

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

VARIA HOLDINGS LLC,
Patent Owner.

IPR2024-01363
Patent 9,405,947 B2

Before KEVIN F. TURNER, NORMAN H. BEAMER, and
PETER D. SHAPIRO, *Administrative Patent Judges*.

BEAMER, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Apple Inc., Petitioner, filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–32 of U.S. Patent No. 9,405,947 B2 (Ex. 1001, the “’947 patent”). Pet. 1. Varia Holdings LLC, Patent Owner, filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and any preliminary response shows that “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

For the reasons explained below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review as to challenged claims 1–32 and the grounds raised in the Petition.

II. BACKGROUND

A. *Real Parties in Interest*

Each party identifies itself as the real party in interest. Pet. 84; Paper 5, 2.

B. *Related Matters*

The parties identify *Varia Holdings LLC v. Apple Inc.*, Case No. 1:23-cv-07477-RPK-RML (EDNY) (the “District Court case”) and co-pending *Inter Partes* Review Case Nos. IPR2024-01362 and IPR2024-01364 as related matters. Pet. 84; Paper 5, 2.

C. The '947 Patent

The '947 patent is directed to mobile communication devices enabled to output radio frequency signal data, such as a security key or an identifier, emulating an active or passive RFID (radio frequency identification) transponder. Ex. 1001, code (57). Emulation of an active RFID transponder involves a user selecting radio frequency signal data to output, and emulation of a passive RFID transponder involves outputting data in response to detecting for proximal presence of an RFID reader. *Id.*

Figure 1 is reproduced below.

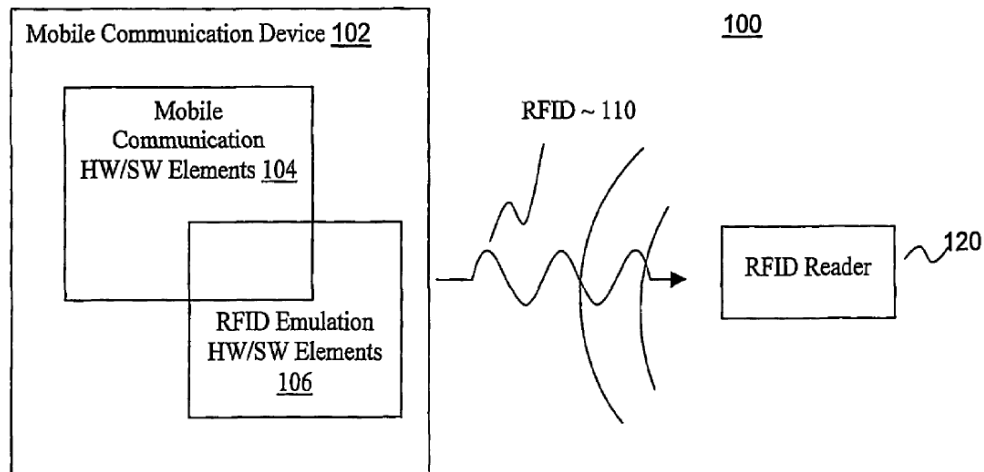


Figure 1

Figure 1 is a block diagram depicting mobile communication device 102, including mobile communication element 104, such as a wireless mobile phone, to perform its “primary function” — a user communicating with another user of another communication device (such as making a voice phone call). Ex. 1001, 3:32–39, 4:7–24. Figure 1 further depicts RFID element 106, for provision or transfer of a key or identifier in the form of a radio frequency signal 110, which may be read by a radio frequency identifier (RFID) reader 120. *Id.* at 3:42–47.

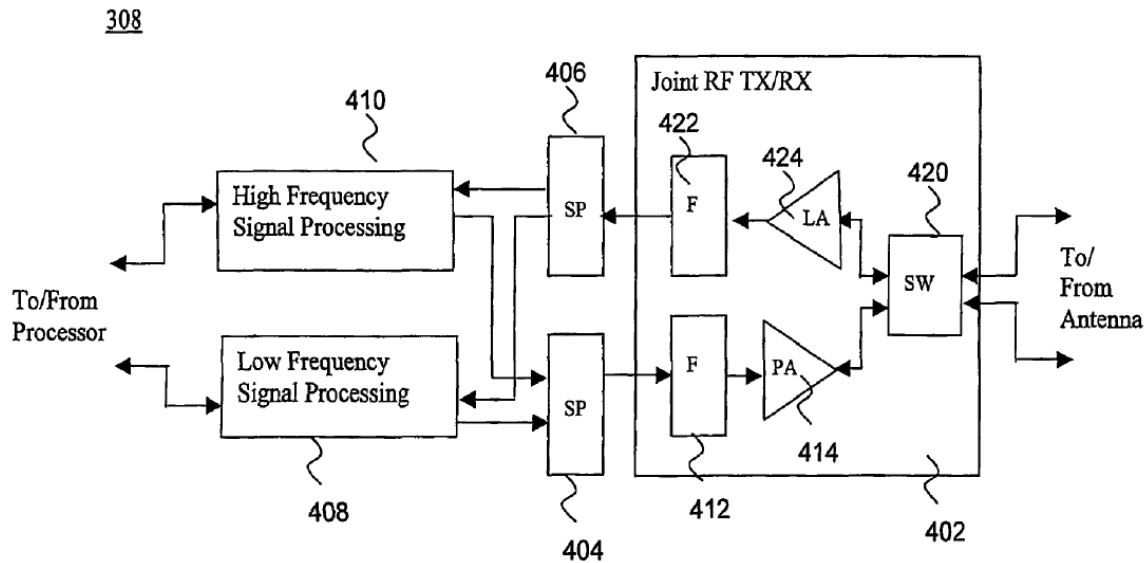
As indicated in Figure 1, mobile communication element 104 and RFID element 106 are shown to intersect, representing that substantial portions of the hardware and/or software elements employed to provide an RFID are the same elements employed to facilitate user communications, thus:

advantageously leverag[ing] on existing elements of mobile communication device 102, and supplement[ing] them, to enable mobile communication device 102 to be able to provide a RFID, emulating a RFID transponder, as well as facilitating user communication.

Ex. 1001, 3:50–63.

RFID 110 may be any keys and/or identifiers, including 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, etc. Ex. 1001, 4:1–4:7. RFID element 106 can emulate an active or passive transponder — the former via outputting an RFID stored in device 102 in response to a user instruction; the latter outputted automatically, whenever device 102 is within the proximal presence, *i.e.* the operational space, of an intended RFID reader 120. *Id.* at 4:63–5:7.

Mobile communication device 102 includes a transceiver, illustrated in Figure 4 reproduced below. Ex. 1001, 2:8–9, 5:18–22.



The transceiver of Figure 4 includes 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 404,¹ and splitter 406. Ex. 1001, 6:60–7:16. For transmission, switch 404 switches between the output of high frequency signal processing 410 and the output of low frequency signal processing 408 to the transmit path of section 402. *Id.* at 7:9–12. High frequency signal processing 410 performs the transmit and receive signals of a voice call in the GHz range, and low frequency signal processing 408 handles the output signal of the RFID to emulate either an active or a passive transponder in the MHz range. *Id.* at 7:17–30.

¹ We agree with Petitioner that component 404 should be labeled “SW,” indicating that it is a switch, rather than “SP.” Pet. 6, n.3.

D. Illustrative Claim

Independent claim 1 is illustrative of the challenged claims, and follows:

- [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.

Pet. v (bracketed numbering by Petitioner); Ex. 1001, 9:28–46.

E. Asserted Grounds of Unpatentability

Petitioner contends that claims 1–32 are unpatentable as follows:²

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 6–9, 13–17, 22, 23, 25, 26, 30–32	103	Willgert, ³ Mooney ⁴
1, 2, 6–8	103	Willgert
2–7, 10–14, 17–24, 27–31	103	Willgert, Mooney, Holloway, ⁵ Pitroda ⁶

Pet. 1–2. Petitioner supports its Petition with a Declaration of Dr. Zhi Ding. Ex. 1003.

III. DISCRETIONARY DENIAL PURSUANT TO 35 U.S.C. § 325(D)

As a threshold matter, Patent Owner argues that institution should be denied pursuant to 35 U.S.C. § 325(d) because the Patent Office previously considered the Zalewski patent (Exhibit 2001), which Patent Owner asserts has a substantively identical disclosure to Willgert, asserted here. Prelim.

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102, 103 effective March 16, 2013, which is after the ’947 patent’s January 25, 2013 filing date. See Ex. 1001, code (22). Therefore, the pre-AIA version of Section 103 applies.

³ Willgert, US 2005/0083177 A1, filed Nov. 6, 2002, published Apr. 21, 2005. Ex. 1004.

⁴ Mooney et al., US 2003/0045235 A1, filed Sep. 5, 2001, published Mar. 6, 2003. Ex. 1005.

⁵ Holloway et al., WO 02/49322 A2, filed Dec. 11, 2001, published June 20, 2002. Ex. 1006.

⁶ Pitroda, US 7,308,426 B1, filed Aug. 11, 1999, issued Dec. 11, 2007. Ex. 1007.

Resp. 18–19. Patent Owner further argues that Petitioner has failed to demonstrate that the Examiner made a material error in allowing the issued claims over this art. *Id.*

Under 35 U.S.C. § 325(d), the Board may exercise discretion to deny a petition that presents the same or substantially the same art or arguments as were previously presented to the Office. *See* 35 U.S.C. § 325(d); 37 C.F.R. § 42.4(a) (providing that the Board institutes on behalf of the Director). The Board has outlined factors it considers in determining whether to exercise discretion to deny institution under § 325(d):

(a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8, 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton Dickinson*”). The *Becton Dickinson* factors apply when a petition relies on art or arguments previously presented to the Office during any proceeding pertaining to the challenged patent, including reexamination, reissue, and AIA post-grant proceedings. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, 8–10 (PTAB Feb. 13, 2020) (precedential). *Advanced Bionics* explains

how the *Becton Dickinson* factors fit into a two-part framework that examines:

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.

Id. at 8.

We do not agree that Zalewski is substantively identical to Willgert. As discussed below in Section IV.D.4.c), Zalewski disclosed an RFID transponder in a removable cover for a phone that was completely separate from the voice call components of the telephone itself. Ex. 2001, 7:63–8:3. Based on this, Applicant successfully distinguished Zalewski because the RFID transponder functionality, being contained in a removable cover, was completely independent of the phone device, and thus the claim requirement of a “communication device determining the mobile communication device is in an operational space” was not met. Ex. 1002, 94–95. On this basis, Applicant also argued that claim requirements of switching between a voice call state and an RFID transponder state were not met. Ex. 1008, 18, 91, 134–135, 155; Ex. 1002, 530.

In contrast, Willgert discloses an RFID transponder that is integrated with a mobile telephone, and so it cannot be distinguished on the basis that was used for Zalewski. Ex. 1004 ¶ 32. Accordingly, we decline to exercise discretion to deny institution pursuant to 35 U.S.C. § 325(d).

IV. ANALYSIS OF PETITIONER'S CHALLENGES

A. *The Applicable Law*

To prevail in its challenge, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). 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 in evidence, objective indicia of non-obviousness (also called secondary considerations), such as commercial success, long-felt but unsolved needs, and failure of others.⁷

⁷ No evidence of objective indicia of non-obviousness is of record.

Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966). We analyze grounds based on obviousness in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Determining whether an invention would have been obvious under 35 U.S.C. § 103 requires resolving the level of ordinary skill in the pertinent art at the time of the effective filing date of the claimed invention. *Graham*, 383 U.S. at 17. The person of ordinary skill in the art is a hypothetical person who knows the relevant art. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors in determining the level of ordinary skill in the art include the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* One or more factors may predominate. *Id.*

Petitioner’s expert contends that person of ordinary skill in the art (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.

Ex. 1003 ¶ 20. Patent Owner does not offer a specific definition of a person of ordinary skill in the art. *See, generally*, Prelim. Resp.

Based on a review of the record, we adopt Petitioner’s proposed level of ordinary skill in the art because it is consistent with the evidence of

record, including the asserted prior art and '947 patent specification.
Okajima v. Bourdeau, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b) (2023). Under this standard, claim terms have their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. See *Phillips*, 415 F.3d at 1313–14. Claim terms need only be construed to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner states that “[n]o formal claim constructions are required in this proceeding.” Pet. 7–8. However, Petitioner submits “preliminary” claim constructions proposed by the parties in the District Court case. Pet. 8–11. Patent Owner states that it “does not dispute the Petition’s statement on claim construction for the purposes of this Preliminary Response.” Prelim. Resp. 8.

Notwithstanding the parties’ statements disavowing the need for claim construction, in our analysis set forth below we consider construction issues regarding the independent claim requirements of a “voice call signal” and “determining [if] the mobile communication device is in an operational space.” We invite the parties to further consider these issues going forward.

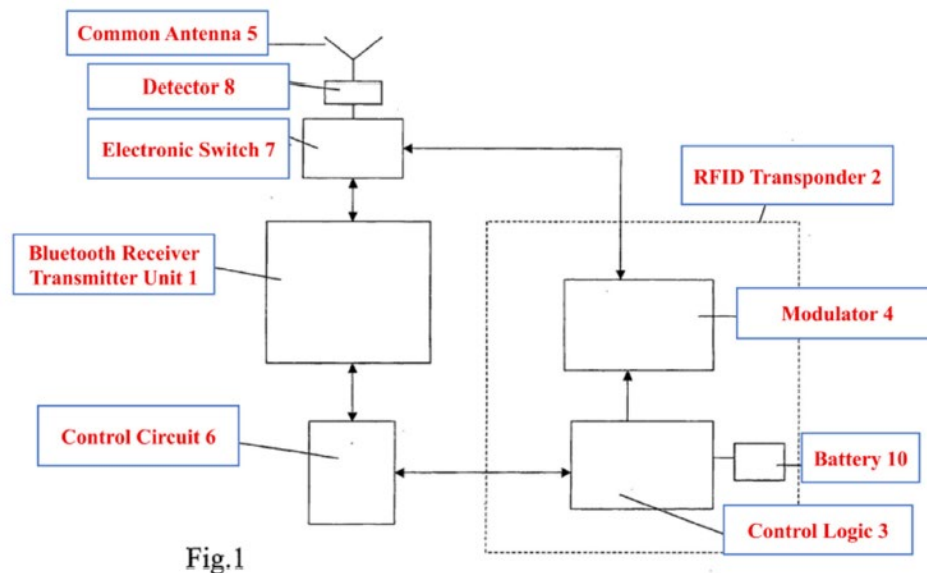
D. Alleged Obviousness of Claims 1, 2, 6–9, 13–17, 22, 23, 25, 26, and 30–32 over Willgert and Mooney

Petitioner contends that claims 1, 2, 6–9, 13–17, 22, 23, 25, 26, and 30–32 would have been obvious over Willgert and Mooney. Pet. 11–48.

1. Willgert

Willgert, titled “Communications Unit,” is directed to identifying objects or persons using an RFID transponder. Ex. 1004, code (57). The transponder is integrated with a Bluetooth receiver/transmitter unit, enabling the sharing of common components. *Id.* This integration “significantly lowers the costs and affords simpler handling.” *Id.* ¶ 9.

Figure 1, with Petitioner’s annotations, is reproduced below.



Pet. 13. Figure 1 is a block diagram of a communications unit including Bluetooth receiver/transmitter unit 1 and RFID transponder 2. Ex. 1004 ¶ 14. RFID transponder 2 includes control logic 3 and associated memory and modulator 4, and in response to receipt of a query signal from an external communicator, reflects the received signal while modulating the signal with a pulse train to provide the communicator with an identity

associated with the RFID. *Id.* ¶ 17. Receiver/transmitter unit 1 and RFID transponder 2 share the use of antenna 5 and control circuit 6, and control logic 3 may be included in the function of control circuit 6. *Id.* ¶ 19. Switch 7 routes a signal received by the antenna 5 to Bluetooth receiver/transmitter 1 or to RFID transponder 2, controlled by detector 8, which detects to which component the signal is directed. *Id.* ¶ 21.

In one embodiment, the Bluetooth receiver/transmitter and RFID transponder can be integrated into a mobile telephone. Ex. 1004 ¶¶ 30, 32. This integrated embodiment can be constructed so that the transponder functions when the mobile telephone is switched-off, so that the user can still be identified *via* RFID without carrying a separate transponder. *Id.* ¶ 31.

2. *Mooney*

Mooney, titled “Smart Bluetooth Interface Gateway To Mate A Non-Bluetooth Wireless Device With A Bluetooth Headset,” is directed to allowing a Bluetooth headset to establish an audio connection and communicate with a conventional wireless phone that does not have Bluetooth installed. Ex. 1005, code (57). This is achieved by attaching a Bluetooth interface gateway device to the phone through the analog audio jack of the phone. *Id.* Figure 1 is reproduced below.

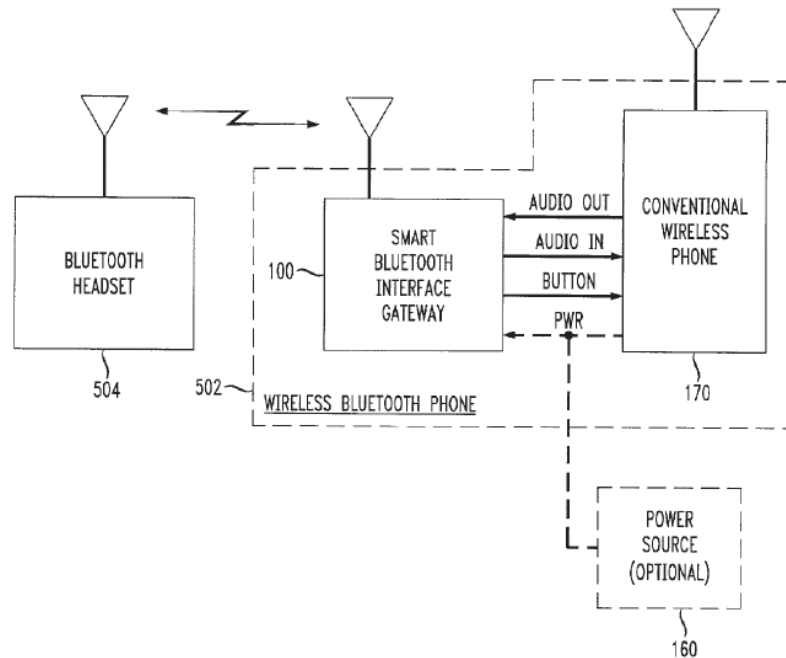
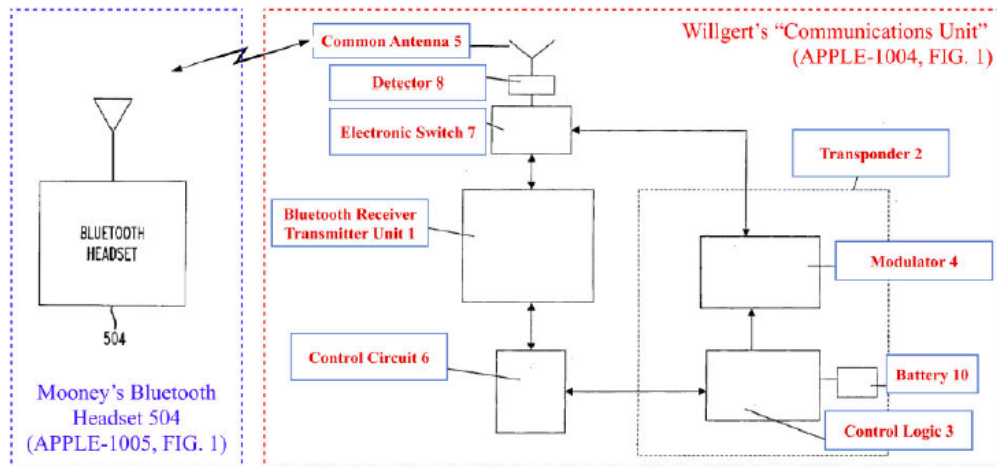


Figure 1 shows Bluetooth headset 504 paired with wireless Bluetooth phone 502 made up of conventional wireless phone 170 connected to smart Bluetooth interface 100 via the audio out, audio in, and button indicator connectors on the wireless phone. Ex. 1005 ¶¶ 31, 38–40. During phone activity, Bluetooth headset 504 can hear voice and/or tones (*e.g.*, from key presses) generated from wireless phone 170. *Id.* ¶ 48.

3. *The Combination of Willgert and Mooney*

Petitioner argues that a person of ordinary skill would have been motivated to use the Bluetooth headset of Mooney with the Bluetooth transceiver of the Willgert communications unit included in a mobile telephone designed for Bluetooth communication. Pet. 16–19. Petitioner provides a composite of Figure 1 of Willgert and Figure 1 of Mooney to illustrate this combination, reproduced below.



Willgert-Mooney

This figure shows the Mooney Bluetooth headset on the left communicating via the Bluetooth wireless standard with the Willgert communications unit on the right. Pet. 19.

Petitioner argues that this combination would have been motivated by the fact that the Willgert teaches that integrating its communications unit into a mobile telephone designed for Bluetooth communication was a “highly user-friendly application,” and that it was well known practice to use a Bluetooth headset wirelessly communicating with the phone to enable hands-free phone calls, as specifically taught by Mooney. Pet. 16–18 (citing Ex. 1004 ¶¶ 8, 30, 32; Ex. 1005, Fig. 3, ¶¶ 7, 39, 48; Ex. 1021; Ex. 1003 ¶¶ 62–65). Petitioner further argues that Bluetooth headsets were a well-known concept and widely available, that incorporating the headset involved known methods yielding predictable results, and that one of ordinary skill would have reasonably expected to succeed in combining the teachings of Willgert and Mooney. *Id.* at 19–21 (citing Ex. 1004 ¶¶ 8, 10, 30; Ex. 1005, ¶ 8; Ex. 1016; Ex. 1017, 1, 3; Ex. 1021, 2; Ex. 1003 ¶¶ 66–68).

Patent Owner does not address the issue of motivation to combine Willgert and Mooney. *See generally* Prelim. Resp. We find, based on the current record, that Petitioner has provided sufficiently articulated reasoning with rational underpinnings for the proffered combined teachings of Willgert and Mooney.

4. *Independent Claims 1, 9, 16, and 26*

a) *Petitioner’s Arguments Challenging the Independent Claims*

For the preamble of independent method claim 1, Petitioner generally relies on the Willgert/Mooney combination of a Bluetooth enabled mobile telephone in wireless communication with a Bluetooth headset, which includes the ability to switch between a Bluetooth transmitter handling the voice calls of the mobile telephone and an RFID transponder. Pet. 21–22 (citing Ex. 1004, Abstr., ¶¶ 30, 32; Ex. 1003 ¶¶ 77–78).⁸

For claim requirement 1.1 of receiving an RFID probing signal from an RFID reader,⁹ Petitioner relies on the disclosure in Willgert of the ability of the RFID transponder to receive a signal provided by an RFID reader when the RFID transponder is in sufficient proximity to the communicator — for example, “at a given short distance, for example of five meters.” Pet. 22–25 (citing Ex. 1004 ¶¶ 4, 5, 17–18, 23; Ex. 1003 ¶¶ 79–84).

⁸ Based on the present record, we make no determination at this stage of the proceeding that the preamble of claim 1 (or of claims 9, 16 or 26) is limiting.

⁹ For economy of presentation, we refer to the portions of claim 1 identified by bracketed letters at Section II.D above, and paraphrase the referenced claim requirement, although the complete language of each claim requirement is the subject of our analysis.

For claim requirement 1.2 of executing instructions stored in memory on processing circuitry, Petitioner relies on the disclosure in Willgert of control circuit 6, arguing that one of ordinary skill would have understood that signal transmission functionality may be provided using a processor that runs software instructions stored in a separate associated memory. Pet. 25–28 (citing Ex. 1004 ¶¶ 17–19, 22; Ex. 1012, Abstr., Fig. 9, 12:14–20, 13:1–12, 13:21–26; Ex. 1003 ¶¶ 85–90).

For claim requirement 1.3 of outputting RFID and voice call signals, Petitioner relies on the disclosure in Willgert of circuitry in the communications unit that can switch between transmission of RFID signals and Bluetooth voice communication signals. Pet. 28–30 (citing Ex. 1004 ¶ 22; Ex. 1003 ¶ 91). Petitioner argues that the Willgert-Mooney combination would have included a telephone and associated Bluetooth headset that would have enabled a user of the telephone to conveniently receive and respond to voice calls through use of the wireless headset, enabling it to “hear voice and/or tones” generated from the telephone. *Id.* at 18 (citing Ex. 1004 ¶¶ 30–32; Ex. 1005 ¶ 39, 48; Ex. 1021; Ex. 1003 ¶ 65).

For claim requirement 1.4 of outputting the RFID signal in response to the probing signal, Petitioner relies on the disclosure in Willgert of the ability of the RFID transponder to output an RFID signal when in proximity to an external RFID transmitter. Pet. 30–33 (citing Ex. 1004 ¶¶ 4–7, 15, 17; Ex. 1011 ¶ 6; Ex. 1003 ¶¶ 92–96).

For claim requirement 1.5 that the voice call signal is output over a different radio frequency range than the RFID signal, Petitioner argues that it would have been obvious that the Bluetooth voice communications using

the Bluetooth protocol would have been transmitted over a different frequency range than the RFID signals, given the Bluetooth frequency standards and the known frequency ranges for commonly available RFID transponders. Pet. 35–36 (citing Ex. 1005 ¶¶ 4–5; Ex. 1013, 20, 23; Ex. 1014; Ex. 1015; Ex. 1003 ¶¶ 99–100).

Independent method claim 9 has requirements commensurate with method claim 1. Ex. 1001, 10:4–26.¹⁰ Petitioner’s challenge to claim 9 tracks that of claim 1. Pet. 39–43 (citing Ex. 1004 ¶¶ 4–7, 15, 17, 23, 30; Ex. 1011 ¶ 6; Ex. 1003 ¶¶ 108–116).

Independent claim 16 is a device claim counterpart to method claims 1 and 9 that additionally requires communications circuitry, a storage medium storing instructions, and a processor, which components implement functionality commensurate with the independent method claims. Ex. 1001, 10:45–11:3. Petitioner’s challenge to claim 16 tracks that of claims 1 and 9, and further relies on disclosures in Willgert of the communications unit, control logic, and associated memory. Pet. 43–46 (citing Ex. 1004, Abstr., ¶¶ 4, 6–7, 15, 17, 22, 30, 32; Ex. 1011 ¶ 6; Ex. 1012, 13:1–12; Ex. 1013, 23; Ex. 1003 ¶¶ 117–120).

Independent claim 26 is a device claim with requirements commensurate with device claim 16 that additionally requires transmitting a voice call signal to another mobile communication device. Ex. 1001, 11:37–12:19. Petitioner’s challenge to claim 26 tracks that of claims 1, 9, and 16, and further argues that one of ordinary skill would have understood that

¹⁰ We understand that the claim 9 text, “based u on receipt of the RFID robin signal,” is intended to be, “based upon receipt of the RFID probing signal.” Ex. 1001, 10:21–22.

voice calls from one mobile cell phone are sent to another cell phone.

Pet. 46–47 (citing Ex. 1003 ¶¶ 121–122).

*b) Patent Owner’s Response Regarding
the Independent Claims*

Patent Owner first argues that nothing in the Willgert/Mooney combination, including the signals that perform Bluetooth communication between a mobile device and its paired headset, teaches or suggests “communication circuitry” or other “circuitry” having “voice call signal” functionality. Prelim. Resp. 8. Patent Owner relies on the statements in the ’947 patent that the voice call signals are “‘the primary communication function’ of the claimed mobile device” which “‘facilitate[s] a user of device 102 to engage in communication with another user of another communication device.’” *Id.* at 9 (citing Ex. 1001, 3:36–39, 7:18–21). Patent Owner argues that the signals passing from the Willgert communications unit to the Mooney Bluetooth headset are not voice call signals capable of making or generating a voice/telephone call to the user of another device: they are not used to make or generate calls; they are short-range wireless signals; and they are only an alternative to a wired headset connection. *Id.* at 9 (citing Ex. 1013, 22–23; Ex. 1017, 1).

Patent Owner further argues that merely having the capability to hear a phone conversation (“voice and/or tones”) via an “audio gateway” is insufficient. Prelim. Resp. 10 (citing Ex. 1005 ¶ 48). Patent Owner points out that Petitioner, in arguing a different ground challenging the claims, in effect acknowledges that Bluetooth signals are distinct from voice call signals: “(‘Willgert’s “communications unit,” involve use of a single,

common processor . . . for processing *all wireless signals* (RFID, *Bluetooth, voice calls.*) (emphasis added).” *Id.* (citing Pet. 53); *see also* Ex. 1003 ¶ 96.

In a second argument, Patent Owner maintains that there is no disclosure in Willgert that teaches or suggests a mobile communications device outputting an “RFID signal” in response to the device “determining” that it is in an “operational space of the RFID reader.” Prelim. Resp. 15–16. Patent Owner argues that Petitioner errs in relying on Willgert’s RFID transponder outputting an RFID signal, in response to a query/transponder signal provided by an external RFID reader, when the RFID transponder is in sufficient proximity to the reader. *Id.* at 16. Patent Owner argues that the RFID transponder of Willgert is a prior art passive transponder, that merely responds to the query signal of a nearby RFID reader — Patent Owner argues that this is different from the mobile communications device determining that it is in the operational space of the RFID reader. *Id.* Patent Owner points out that the RFID transponder of Willgert continues to function while the mobile telephone is switched off, which Patent Owner argues demonstrates that there is no determination by the mobile communications device of being in an operational space of an RFID reader. *Id.* Patent Owner also asserts that, during prosecution of the application that led issuance of the ’947 patent, the Zalewski patent was distinguished based on the fact that it disclosed a conventional RFID transponder akin to that disclosed in Willgert. *Id.* at 16–18 (citing Ex. 1002, 41, 94–95, 343, 530, 546; Ex. 2001, 7:63–8:3).

Patent Owner does not specifically respond to Petitioner’s arguments regarding the remaining requirements of independent claims 1, 9, 16 and 26. *See generally* Prelim. Resp.

*c) Analysis of Petitioner's Challenges
to the Independent Claims*

At this stage, we disagree with Patent Owner's argument that the Willgert/Mooney combination does not teach or suggest the voice call signal requirements of the claims. As stated in the '947 patent, the voice call signals relate to "the primary function of [the mobile communications device], i.e. to facilitate a user in communicating with another user of another communication device." Ex. 1001, 3:55–57. The proffered combination of wirelessly connecting the Bluetooth headset of Mooney to the Bluetooth receiver/transmitter of Willgert's communications unit includes the fact that the Willgert communications unit is integrated into a mobile telephone. Ex. 1004 ¶¶ 30, 32. Thus, when the telephone is being used for its "primary purpose" of communicating with another user, the same voice call signal involved in that communication is also being transmitted from the telephone to the Bluetooth headset. We see no reason why the claimed "voice call signals" must be construed to exclude such signals. Patent Owner declined to address claim construction in its Preliminary Response, but is free to explore this issue post-institution.

We also disagree, based on the current record, with Patent Owner's second argument that Willgert would not have taught or suggested a mobile communications device outputting an "RFID signal" in response to the device "determining" that it is in an "operational space of the RFID reader." We see no reason why the fact that the Willgert transponder responds to the query signal of a RFID reader in proximity to the transponder does not satisfy the requirement of a mobile communications device determining that it is in the operational space of an RFID reader. Patent Owner relies on a

statement in Willgert that the RFID transponder of Willgert continues to function while the mobile telephone is switched off, but this is only one, optional, embodiment of Willgert — more generally, Willgert teaches that the “Bluetooth and transponder are both integrated in a mobile telephone,” with no requirement of such independent transponder functionality.

Ex. 1004 ¶¶ 31–32. Willgert states that “[t]he transponder is thus 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.* ¶ 17. On the present record, we conclude this satisfies the claim requirement of “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.” As explained in Willgert, the system is designed so that the RFID signal only responds when it receives a query signal, which does not occur until the “identity can be read by a communicator at a given short distance, for example of five meters” — in this example, the “operational space” is the area within five meters. *Id.* ¶ 5.

Certainly the fact that the Willgert RFID transponder is “passive” does not distinguish it from the claims. The only support in the ’947 specification for the claim requirement of a communications device outputting an RFID signal in response to the device determining that it is in an operational space of the RFID reader is:

[T]he [RFID] output . . . 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.

Accordingly, device 102 *monitors* for probing signals of an intended RFID reader 120 (or a type of RFID readers 120), *to determine whether device 102 is **within the operational space*** of such a RFID reader 120, block 205. On so determining, device 102 outputs the designated RFID automatically, emulating a *passive* RFID transponder, block 206.

Ex. 1001, 5:3–14 (emphasis added). Significantly, “block 205” referenced above appears in Figure 2, reproduced below.

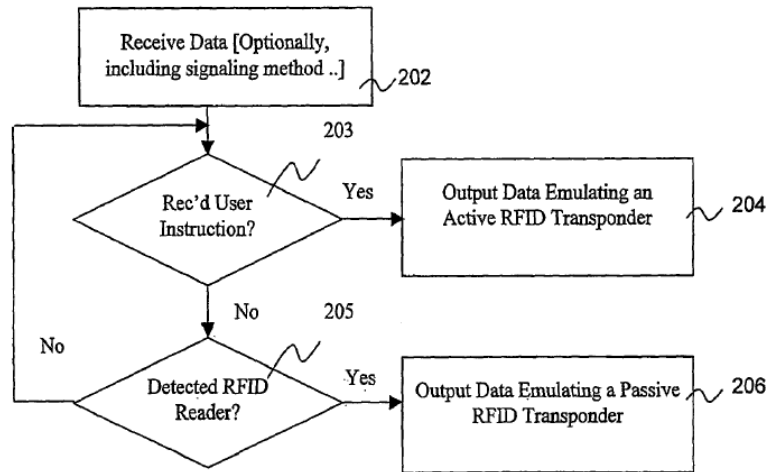


Figure 2

As shown, the function of block 205 is simply “Detected RFID reader,” and if the answer is “Yes,” the RFID data is outputted. Therefore, at this stage we conclude that a communications device, such as that of Willgert, that simply outputs the RFID signal when it detects a sufficiently nearby RFID reader satisfies the claim requirement at issue. Again, Patent Owner is free to explore the scope of the claim terms “transceiver” and “transmitter” post-institution.

Also, Patent Owner’s reliance on the prosecution history regarding the Zalewski patent is misplaced. As Patent Owner has explained, Zalewski disclosed “‘an RFID transponder 110’ embedded in a removable cover for a

phone or other device ‘such as an MP3 player.’” Prelim. Resp. 17 (citing Ex. 2001, 7:63–8:3). Based on this, Applicant successfully distinguished Zalewski because the RFID transponder functionality, being contained in a removable cover, was completely independent of the phone device, and thus, according to applicant, the claim requirement of “*communication device* determining the mobile communication device is in an operational space” was not met. Ex. 1002, 94–95 (“even if said turning on in response to a sufficient electric field provided by an RFID reader can be read as such a determination, *this determination is not made by the mobile terminal*, but rather by the passive RFID transponder in a cover attached to the mobile terminal”) (emphasis added). In contrast, in Willgert, the transponder is integrated with the Bluetooth transmitter and the overall mobile telephone, with overlapping circuitry, including switch 7, controlled by detector 8, functioning to detect whether a received signal is a Bluetooth signal or an RFID signal. Ex. 1004 ¶¶ 10, 19, 21, 32.

In sum, as set forth above, Petitioner provides detailed explanations as to how the combination of Willgert and Mooney allegedly renders obvious independent claims 1, 9, 16, and 26. Other than the above arguments in Patent Owner’s response, which we do not agree with, Patent Owner does not specifically respond to Petitioner’s arguments regarding the remaining requirements of the independent claims. Accordingly, based on our analysis set forth above, including our analysis of Patent Owner’s arguments, we determine that Petitioner has presented a reasonable likelihood to prevail in demonstrating unpatentability of independent claims 1, 9, 16, and 26 as obvious over the combination of Willgert and Mooney.

5. *Claims 2, 6–8, 13–15, 17, 22, 23, 25, and 30–32*¹¹

Claim 2 adds to claim 1, and claim 17 adds to claim 16, the requirement that the RFID transponder data comprises a security key or an identifier. Ex. 1001, 9:47–49, 11:4–6. Claim 6 adds to claim 2, claim 22 adds to claim 17, and claim 30 adds to claim 26, the requirement of provisioning RFID data to the communications device. *Id.* at 9:61–63, 11:21–24, 12:30–33. Claim 7 adds to claim 6, claim 23 adds to claim 22, and claim 31 adds to claim 30, the requirement of provisioning a signaling attribute for RFID transponder data output. *Id.* at 9:64–67, 11:25–29, 12:34–39. Claim 8 adds to claim 1, claim 15 adds to claim 9, claim 25 adds to claim 16, and claim 32 adds to claim 26, the requirement that the mobile communication device is a wireless mobile phone or a personal digital assistant. *Id.* at 10:1–3, 10:42–44, 11:33–36, 12:40–43.

Petitioner provides detailed explanations, supported by Petitioner’s expert’s testimony, as to how the combination of Willgert and Mooney allegedly renders obvious these dependent claims, relying on disclosures in Willgert of pertinent components of the communications unit, the nature of the transmitted RFID signals, and the ability to write data into the transponder memory. Pet. 36–39, 47–48 (citing Ex. 1003 ¶¶ 101–107, 123). Patent Owner does not address separately these explanations and supporting evidence by Petitioner regarding these claims. *See generally* Prelim. Resp.

Accordingly, having reviewed Petitioner’s arguments and supporting evidence in the present record, we determine Petitioner has demonstrated a

¹¹ We do not consider claims 13 and 14 here because those claims depend from claim 10, which Petitioner challenges based on the combination of Willgert, Mooney, Holloway, and Pitroda, as discussed below. Pet. 58, 79.

reasonable likelihood that it will prevail in demonstrating unpatentability of claims 2, 6–8, 15, 17, 22, 23, 25, and 30–32 as obvious over the combination of Willgert and Mooney.¹²

E. Alleged Obviousness of Claims 1, 2, and 6–8 over Willgert

Petitioner alternatively contends that claims 1, 2, and 6–8 would have been obvious over Willgert alone. Pet. 48–58.

a) Petitioner’s Arguments Regarding Reliance on Willgert Alone

Petitioner bases its challenge on an alleged broader construction of the claims that Patent Owner espoused in the District Court case. Pet. 48–51 (citing Ex. 1050, 25–26; Ex. 1052, 8; Ex. 1053, 6, 13; Ex. 1055, 65:13–23, 134:5–13; Ex. 1003 ¶ 124). Petitioner alleges that “Varia interprets the claims as encompassing circuitry of different components within a mobile device that *collectively* enable transmission/reception functionality of the mobile device.” *Id.* at 50–51. For example, Petitioner characterizes Patent Owner’s litigation position as asserting 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.” *Id.* at 50 (citing Ex. 1053, 6). Therefore, rather than relying on the above combination of Willgert and Mooney, in which the Bluetooth headset of Mooney is wirelessly connected to the communications unit of Willgert, Petitioner places sole reliance on the Willgert embodiment in which the communications unit is included in a mobile telephone. *Id.* at 48–58.

¹² See footnote 11 re claims 13 and 14.

Applying this construction, Petitioner argues that the required processing circuitry executing instructions stored in memory of claim 1.2, which cause output of an RFID signal and a voice call signal as required by claim 1.3, are provided by “Willgert’s ‘communications unit’ in a telephone (configured to output voice call signals and RFID signals) [which] includes a combined set of components and/or a sum total of circuitry for outputting a voice call signal and a RFID transponder signal.” Pet. 53 (citing Ex. 1004 ¶¶ 30–32; Ex. 1003 ¶ 128).

Petitioner further argues that it would have been obvious to “use . . . a single, common processor . . . for processing all wireless signals (RFID, Bluetooth, voice calls).” Pet. 53 (citing Ex. 1004 ¶¶ 19, 24; Ex. 1003 ¶ 129). Petitioner starts with the disclosure in Willgert 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.” *Id.* (citing Ex. 1004 ¶ 19). From that, Petitioner argues that a person of ordinary skill would have been motivated to integrate the processor controlling the mobile telephone voice call capability into the processor that handled the Bluetooth and RFID functionality. *Id.* at 53–54 (citing Ex. 1004 ¶ 31; Ex. 1010, 3:22–25, 5:1–12; Ex. 1012, 13:1–12; Ex. 1017, 1; Ex. 1003 ¶¶ 129–130).

Based on this premise, that the communications unit functionality of Willgert is integrated with the voice call capability of a mobile phone, Petitioner argues that this combination satisfies the claim 1.2 and 1.3 requirements of processing circuitry executing instructions stored in memory, causing output of an RFID signal and a voice call signal. Pet. 55–58 (citing Ex. 1004 ¶¶ 5, 17, 19, 23–25, 30–31; Ex. 1003 ¶¶ 129–134).

For the remaining requirements of claim 1, and the requirements of claims 2 and 6–8, Petitioner refers to its analysis in its Willgert/Moony discussion of how Willgert meets those requirements. Pet. 51–52, 58.

b) Patent Owner’s Response Regarding Petitioner’s Reliance on Willgert Alone

Patent Owner asserts that Petitioner mischaracterizes Patent Owner’s claim constructions in the District Court case by relying on preliminary litigation documents rather than the actual claim construction briefing in that case. Prelim. Resp. 11–12. Patent Owner argues that its litigation construction requires the RFID components to be electronically integrated into a device having voice call signal functionality, which Willgert fails to disclose. *Id.* at 12–13. Patent Owner further argues that the Willgert communications unit is only equipped with Bluetooth and RFID capability, and not with any voice call signaling components or telephone capability. *Id.*

Patent Owner challenges, as conclusory and unsupported, Petitioner’s argument that it would have been obvious to integrate voice call capability into Willgert’s communications unit, given that Willgert teaches that it is “particularly advantageous” when “the [RFID] transponder will also function when the mobile telephone is switched off in general” so that “the user can be identified without carrying a separate transponder.” Prelim. Resp. 13–15 (citing Ex. 1004 ¶ 31).

c) Analysis Regarding Petitioner’s Reliance on Willgert Alone

Whether or not Patent Owner has espoused, during the District Court case, the broad interpretation of the claims that Petitioner relies on, we do

not agree, based on the current record, that the claims should be construed to encompass a device that has independent RFID transponder components that are separate from and independent of the components that provide voice call capability. During prosecution of related applications, in distinguishing Zalewski, Applicant disavowed such a broad interpretation. For example, Applicant asserted:

The term “transceiver” . . . is well understood by those of ordinary skill in the art. One 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

Ex. 1008, 40. Also:

[A] person having ordinary skill in the art would have understood “a transceiver of a mobile communication device” to be a transmitter and receiver combined in a single package/housing/unit and sharing at least some common circuitry for both transmission and reception located within a mobile communication device.

....

A person having ordinary skill in the art would understand Applicants’ disclosure as describing a single transceiver that can be switched from a first state in which it transmits voice call signals to a second state in which it transmits RFID signals.

Id. at 92, 94.

However, Petitioner also argues, and provides expert testimony in support, that it would have been obvious to integrate Willgert’s communications unit with the voice call capability of a mobile telephone. Pet. 53–54 (citing Ex. 1003 ¶¶ 129–130). At this stage of the proceeding, we find support for this position, including the fact that Willgert specifically teaches that the communications unit can be *integrated* into a mobile

telephone. Ex. 1004 ¶ 32. Patent Owner challenges this argument based on the statement in Willgert that the communications unit can be “constructed so that the transponder will also function when the mobile telephone is switched-off.” Prelim. Resp. 13–15 (citing Ex. 1004 ¶ 31). However, Willgert provides this as one option, and we do not find that this statement teaches away from a fully integrated approach alternative.

Accordingly, based on our analysis set forth above, including our analysis of Patent Owner’s arguments, we determine that Petitioner has presented a reasonable likelihood to prevail in demonstrating unpatentability of claims 1, 2, and 6–8 over Willgert.

F. Alleged Obviousness of Claims 2–7, 10–14, 17–24, and 27–31 over Willgert, Mooney, Holloway, and Pitroda

Petitioner contends that claims 2–7, 10–14, 17–24, and 27–31 would have been obvious over Willgert, Mooney, Holloway, and Pitroda. Pet. 58–80. In addition to reliance on Willgert and Mooney alone for claims 2, 6, 7, 13, 14, 17, 22, 23, 30, and 31, as discussed above in Section IV.D.5, Petitioner provides detailed explanations, supported by Petitioner’s expert’s testimony, as to how Holloway and Pitroda, in combination with Willgert and Mooney, would have taught or suggested additional requirements of the dependent claims 3–5, 10–12, 18–21, 24, and 27–29, such as specific types of RFID security keys or identifiers, and user selection of RFID transponder data. Pet. 68–80 (citing Ex. 1003 ¶¶ 136–153). Patent Owner does not address separately these explanations and supporting evidence by Petitioner regarding these claims. *See generally* Prelim. Resp.

Accordingly, based on our analysis set forth above, including our analysis of Patent Owner’s arguments, we determine that Petitioner has

presented a reasonable likelihood to prevail in demonstrating unpatentability of claims 2–7, 10–14, 17–24, and 27–31 over Willgert, Mooney, Holloway, and Pitroda.

V. CONCLUSION

After considering the evidence and arguments presented in the Petition and the Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that at least one claim of the '947 patent is unpatentable. Accordingly, we institute an *inter partes* review of claims 1–32 and all of the grounds presented in the Petition. See 37 C.F.R. § 42.108(a); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); *AC Techs. S.A. v. Amazon.com, Inc.*, 912 F.3d 1358, 1364 (Fed. Cir. 2019) (“[I]f the Board institutes an IPR, it must . . . address all grounds of unpatentability raised by the petitioner.”). At this stage of the proceeding, we have not made a final determination as to the patentability of these challenged claims.

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314, *inter partes* review is instituted as to challenged claims 1–32 of the '947 patent with respect to all grounds of unpatentability presented in the Petition; and

FURTHER ORDERED that *inter partes* review is commenced on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

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