

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

THL HOLDING COMPANY, LLC,
Patent Owner.

IPR2024-00400
Patent 11,350,246 B2

Before CHRISTOPHER M. KAISER, SHEILA F. McSHANE, and
ELIZABETH J. REAGAN, *Administrative Patent Judges*.

KAISER, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Apple Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 20–27 (“the challenged claims”) of U.S. Patent No 11,350,246 B2 (Ex. 1001, “the ’246 patent”). Petitioner also filed an explanation of the need to file two petitions challenging the same patent. Paper 3. THL Holding Company, LLC (“Patent Owner”) did not file a Preliminary Response.

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). *Inter partes* review may not be instituted unless “the information presented in the petition filed under [35 U.S.C.] section 311 and any response filed under [35 U.S.C.] section 313 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.” 35 U.S.C. § 314(a) (2018). “When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a) (2023).

For the reasons set forth below, upon considering the briefing and the evidence of record, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner will prevail with respect to at least one of the challenged claims, and we institute *inter partes* review on all of the challenged claims based on all of the grounds identified in the Petition.

B. *Real Parties in Interest*

Petitioner identifies itself as the real party in interest. Pet. 82. Patent Owner identifies itself as the real party in interest. Paper 6, 1.

C. Related Matters

The parties identify a district court case, *THL Holding Company, LLC v. Apple Inc.* (W.D. Tex.), as a related proceeding. The parties disagree about the case number of the related case, with Petitioner identifying it as Case No. 6:23-cv-00077 and Patent Owner identifying it as Case No. 1:23-cv-00548-OLG. Pet. 82; Paper 6, 1. Petitioner also challenges claims 1–19 of the '246 patent in a parallel petition filed in IPR2024-00399.¹ *See* Paper 3, 1.

D. The '246 Patent

The '246 patent is titled “Wireless Device and Methods for Use Therewith.” Ex. 1001, code (54). The application leading to this patent was filed on January 19, 2022, claiming priority to applications filed as early as February 26, 2010. *Id.* at codes (22), (63).

According to the '246 patent, “wireless communication devices are commonly used to access long range communication networks as well as broadband data networks,” and “[m]any wireless telephones have operating systems that can run applications that perform additional features and functions.” *Id.* at 2:13–28. “Consequently, the wireless telephone has, in some ways, become an important device for many aspects of the user’s life,” and “[m]isplacing a user’s wireless telephone can be an annoying experience.” *Id.* at 2:35–42.

¹ Patent Owner does not request that we exercise our discretion to deny institution of either parallel petition. On the present record, we find that Petitioner’s explanation of the need for two parallel petitions is sufficient to justify not exercising discretion to deny institution in either case. The parallel petitions challenge different sets of claims of the '246 patent, and there are a large number of claims challenged collectively between the two petitions.

The '246 patent describes “a location system for use with a handheld wireless communication device.” *Id.* at 4:52–55. The wireless communication device can be “a smart phone, digital book, netbook, personal computer with wireless data communication or other wireless communication device that includes a wireless transceiver for communicating over a long range wireless network . . . and/or a short-range wireless network.” *Id.* at 4:55–64. An adjunct device can be coupled to with wireless communication device. *Id.* at 5:31–34.

A separate wireless device can be attached to an object such as a set of keys, and it communicates with the adjunct device. *Id.* at 7:40–44. In particular, the adjunct device coupled to the wireless communication device has a “short-range wireless receiver” that “is configured to receive [a] paging signal . . . generated by [the] wireless device.” *Id.* at 5:31–40. Upon receiving the paging signal, the wireless device “emits a detectable alert signal that helps the user locate” the object to which the wireless device is attached. *Id.* at 7:47–57, Fig. 6. In addition, the '246 patent describes “a location application that operates under user control to . . . locate . . . [an] object associated with” the adjunct device. *Id.* at 10:49–53. This application uses signal strength, time of flight, or a directional antenna to locate the object associated with the adjunct device. *Id.* at 10:53–11:30.

E. Illustrative Claim

Claim 20 of the '246 patent is challenged, independent, and illustrative; it is reproduced below.

20. [20(p)] A mobile communication device comprising:
[20(a)] a plurality of wireless transceivers including
[20(a)(i)] a Bluetooth transceiver,

- [20(a)(ii)] a long-range transceiver configured to send and receive telephone calls via a telephony network and to communicate Internet data and
- [20(a)(iii)] one or more ultra-wideband transceivers coupled to two or more antennas;
- [20(b)] a memory that stores operational instructions;
- [20(c)] a touch screen; and
- [20(d)(i)] a processor coupled to the memory and to the touch screen,
- [20(d)(ii)] wherein the processor is configured to execute the operational instructions, which upon execution, cause the processor to:
 - [20(d)(iii)] present a graphical user interface via the touch screen;
 - [20(d)(iv)] generate pairing signals in response to indications from a user via the graphical user interface to pair the mobile communication device to each of a plurality of remote devices,
 - [20(d)(v)] wherein the Bluetooth transceiver responds to the pairing signals by communicating RF signals to pair the mobile communication device to each of the plurality of remote devices,
 - [20(d)(vi)] wherein a unique device identifier associated with each of the plurality of remote devices is shared with the mobile communication device during pairing;
 - [20(d)(vii)] display, via the graphical user interface, a name associated with each of the plurality of remote devices;
 - [20(d)(viii)] receive a selection of a selected remote device of the plurality of remote devices in response to selection, via the graphical user interface, of the name associated with the selected remote device,
 - [20(d)(ix)] wherein the graphical user interface visually indicates the selection of the selected remote device;

- [20(d)(x)] determine whether the selected remote device is in range of the Bluetooth transceiver, wherein the selected remote device is determined to be in range of the Bluetooth transceiver based on reception, via the Bluetooth transceiver, of a beacon from the selected remote device;
- [20(d)(xi)] generate an audio alert signal in response to a second indication from the user via the graphical user interface,
- [20(d)(xii)] wherein the Bluetooth transceiver transmits a first RF signal to the selected remote device in response to the audio alert signal, wherein the first RF signal indicates a request to the selected remote device to emit an audio alert to audibly assist the user in determining a location of the selected remote device;
- [20(d)(xiii)] determine an estimated distance to the selected remote device, based on the reception, via the Bluetooth transceiver, of the beacon from the selected remote device; and
- [20(d)(xiv)] present at least one display, via the graphical user interface, wherein the at least one display includes an estimated position of the selected remote device on a map, and wherein the at least one display indicates the estimated distance to the selected remote device.

Ex. 1001, 37:54–38:22 (reference letters added).

F. Prior Art and Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 5, 17–85):

Claim(s) Challenged	35 U.S.C. ² §	Reference(s)/Basis
20, 27	103(a)	Sweeney, ³ Kalliola, ⁴ Turunen, ⁵ Mohammadian, ⁶ Kalayjian, ⁷ Vauclair ⁸
21–26	103(a)	Sweeney, Kalliola, Turunen, Mohammadian, Kalayjian, Vauclair, Thorn ⁹
26	103(a)	Sweeney, Kalliola, Turunen, Mohammadian, Kalayjian, Vauclair, Thorn, Lopatin ¹⁰

In support, Petitioner relies on the testimony of Dr. R. Michael Buehrer (Ex. 1003).

II. ANALYSIS

A. Legal Standards

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. §§ 102 and 103 effective March 16, 2013. The ’246 patent claims priority to an application filed before that date, so we refer to the pre-AIA version of the statute, but our findings and analysis would be the same under the current version of the statute.

³ US 2009/0058670 A1, published Mar. 5, 2009 (Ex. 1005).

⁴ US 2008/0068265 A1, published Mar. 20, 2008 (Ex. 1006).

⁵ US 6,487,595 B1, issued Nov. 26, 2002 (Ex. 1007).

⁶ US 2006/0114166 A1, published June 1, 2006 (Ex. 1008).

⁷ US 2008/0125040 A1, published May 29, 2008 (Ex. 1009).

⁸ US 2008/0320587 A1, published Dec. 25, 2008 (Ex. 1010).

⁹ US 2009/0058651 A1, published Mar. 5, 2009 (Ex. 1011).

¹⁰ US 2020/0107164 A1, published Apr. 2, 2020 (Ex. 1012).

35 U.S.C. § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) if in evidence, “secondary considerations” of non-obviousness, such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. “While the sequence of these questions might be reordered in any particular case,” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the U.S. Court of Appeals for the Federal Circuit has repeatedly emphasized that “it is error to reach a conclusion of obviousness until all those factors are considered,” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1328 (Fed. Cir. 2016). Because Patent Owner does not address objective evidence of non-obviousness, we focus solely on the first three *Graham* factors.

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim is obvious over the prior art. *See Graham*, 383 U.S. at 17–18.

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). “Not all such factors may be present in every

case, and one or more of these or other factors may predominate in a particular case.” *Id.*

Petitioner asserts that the level of ordinary skill in the art corresponds to “a bachelor’s degree in computer science, computer engineering, electrical engineering, or a similar technical field and 2-4 years of experience with wireless ranging and positioning systems, wireless communication devices, and associated computer programming.” Pet. 7 (citing Ex. 1003 ¶ 35). Patent Owner does not dispute Petitioner’s assertion on the present record.

For purposes of this Decision, we adopt Petitioner’s proposed level of skill, as articulated above. We are satisfied that Petitioner’s proposed definition generally comports with the level of skill necessary to understand and implement the teachings of the ’246 patent and the asserted prior art. This definition is also supported by the testimony of Dr. Buehrer. *See* Ex. 1003 ¶ 35.¹¹

C. Claim Construction

We apply the same claim construction standard used in the federal courts, in other words, the claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), which is articulated in *Phillips*. *See* 37 C.F.R. § 42.100(b). Under the *Phillips*

¹¹ If Patent Owner disagrees with this formulation of the level of skill in the art, it must raise that disagreement in its Response. If a different level of skill would affect the outcome in this case, the parties must brief that issue as well. The failure of Patent Owner to describe how a different level of skill in the art is determinative will be a forfeiture of that argument. If there is a dispute regarding the level of ordinary skill in the art, then the parties are also encouraged to submit evidence, other than conclusory expert testimony, that supports their position.

standard, the “words of a claim ‘are generally given their ordinary and customary meaning,’” which “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312–13.

Petitioner proposes construing two terms. Pet. 8–9 (citing Ex. 1013, 11–15). First, Petitioner proposes that we construe “[b]eacon” as “[s]ignal.” *Id.* at 8. Second, Petitioner proposes that we construe “[p]airing signals” as “[p]rocessor signals to initiate a Bluetooth pairing sequence.” *Id.* On the present record, Patent Owner does not dispute these proposed constructions.

For the purposes of this Decision, we adopt the constructions proposed by Petitioner. Those constructions are supported by briefing in the parallel district court case, in which they were proposed by Patent Owner. Ex. 1013, 11–15.

We also determine that we need not expressly construe any additional claim terms in order to decide whether to institute trial. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

If either party intends to further argue claim construction at trial, including what the plain and ordinary meaning of a term is, they should do so in a clearly designated section of their briefing so as to expressly identify such arguments. *See, e.g.*, 37 C.F.R. § 42.104(b)(3) (content of petition); *see also* Patent Trial and Appeal Board Consolidated Trial Practice Guide, 84 Fed. Reg. 64,280, at 46, 48–45 (Nov. 2019) (available at

<https://www.uspto.gov/TrialPracticeGuideConsolidated>). Claim construction arguments should not be relegated to patentability arguments on the facts.

D. Sweeney, Kalliola, Turunen, Mohammadian, Kalayjian, and Vauclair

Petitioner argues that claims 20 and 27 would have been obvious over the combination of Sweeney, Kalliola, Turunen, Mohammadian, Kalayjian, and Vauclair. Pet. 7–8, 23–68. Based on the current record, we are sufficiently persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted obviousness ground with respect to at least claim 20.

1. Overview of Sweeney

Sweeney discloses “[a] system and method of locating a wireless accessory.” Ex. 1005, code (57). Sweeney discloses a wireless device, such as a cellular telephone, linked via Bluetooth with a wireless accessory, such as a hands-free earpiece that may be moved from “location to location” and thus may become lost or stolen. *Id.* ¶¶ 15–18. The wireless device includes a “location application” that “may indicate an approximate location of the wireless device 104 from the wireless accessory 106 based on the signal strength of the wireless link 108.” *Id.* ¶ 20, Figs. 1, 3, 5. The location of the wireless accessory may be shown on a map of a GUI [graphical user interface] of the wireless device. *Id.* ¶¶ 28, 40.

2. Overview of Kalliola

According to Kalliola, there was a need for “a directional and/or location finding method and system that allows a user to track or locate a signal beacon.” Ex. 1006 ¶ 11. To satisfy this need, Kalliola discloses an application that “work[s] in conjunction with various resources within the wireless communication device in order to provide a visual representation of

the relative direction towards, or location of, an object, place, etc.
maintaining a broadcast beacon.” *Id.*

Kalliola’s system includes a wireless communication device (“WCD”) that may be a cellular telephone. *Id.* ¶¶ 34, 37. The wireless communication device communicates via short-range and long-range wireless networks and protocols. *Id.* ¶¶ 24–36, 46, 48, 49, Fig. 1. The system also includes remotely-activated signal emitters “such as battery-operated transmitters in a keychain, in a wallet, embedded in an ID badge . . . [which] may be activated remotely by a user as needed.” *Id.* ¶ 75. The signal emitters “operate in a lower power or power conservation mode until a message is received instructing a device to activate the position-indicating transmission signal.” *Id.* The position-indicating signal transmitted is received by an antenna array on the WCD, and the WCD determines the direction to the signal emitter, which is displayed for the user as an arrow. *Id.* ¶ 67, Fig. 5.

3. *Overview of Turunen*

Turunen describes “[a] method of transmitting Internet data between a mobile host and a remote host coupled via the Internet and a GSM/GPRS cellular telephone network.” Ex. 1007, code (57). The mobile host “communicates with a Base Transceiver Station (BTS) of a Base Station Subsystem (BSS) of the GSM network.” *Id.* at 5:39–41, Fig. 2.

4. *Overview of Mohammadian*

Mohammadian describes “[p]ortable devices capable of wireless communications . . . including mobile telephones and personal digital assistants (PDAs).” Ex. 1008 ¶ 4. Specifically, wireless device 100 is “equipped with a transceiver 102” that “may be a UWB [Ultra-wide Band] transceiver.” *Id.* ¶ 26. “The transceiver 102 may include a transmitter 104 and a receiver 106 coupled to an elliptic dipole antenna.” *Id.* “The receiver

106 may be used to downconvert a signal from the antenna 108” and “[t]he transmitter 104 . . . provide[s] upconversion for the baseband signal to a frequency suitable for over the air transmission through the antenna 108.”

Id.

5. *Overview of Kalayjian*

Kalayjian describes “[a] method and system for locating objects using a Bluetooth communications protocol.” Ex. 1009, code (57). In Kalayjian, a first device, which “can be, for example, a Bluetooth capable cellular phone,” is used to locate a second device,¹² which “can be, for example, a Bluetooth enabled wireless phone headset.” *Id.* ¶¶ 32–34. “When a user wants to locate one of the [second] devices 320, 400 and 500, the user can initiate the location discovery process through [first] device 310.” *Id.* ¶ 38. “[First] device 310 can transmit a signal to a [second] device,” and, “[u]pon receiving the signal, the [second] device can guide a user to its location and/or notify a user of the distance from [first] device 310 to the [second] device.” *Id.* The second devices “guide a user to their location by emitting auditory or visual signals,” which “allows a user to follow the sound or light to the misplaced object.” *Id.* ¶ 39.

The second devices also “transmit[] a return signal to [first] device 310,” which calculates the distance between the devices and determines “the direction towards a [second] device from the [first] device.” *Id.* ¶¶ 40–42. Figure 8 of Kalayjian is reproduced below.

¹² Kalayjian sometimes refers to the first device as the “master device” and to the second device as the “slave device.” Ex. 1004 ¶¶ 33–34; *see* Pet. 13 n.3. Where it is possible to do so without sacrificing clarity, we instead refer to Kalayjian’s devices as the first device and the second device.

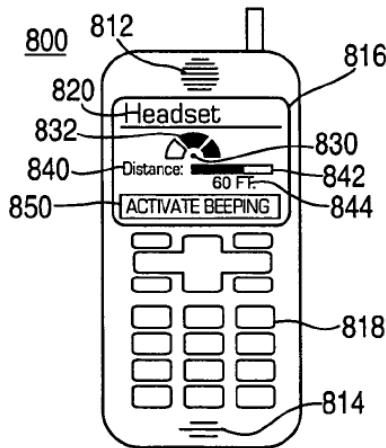


FIG. 8

Id. at Fig. 8. Figure 8 of Kalayjian depicts user interface 800 of a first device “when the [first] device is attempting to locate a [second] device.”

Id. ¶ 49. “Screen 816 can include title 820 to identify the selected [second] device,” as well as “directional graphic 830 to indicate to the user the direction where the [second] device should be located” and “distance graphic 840 to identify the distance between the selected [second] device and [first] device 800.” *Id.* In addition, “[s]creen 816 can include graphical button 850 to enable the user to prompt the [second] device to beep, flash or perform a combination of both, or provide some other indication.” *Id.*

6. Overview of Vauclair

Vauclair describes a pairing process between “a peripheral device,” such as “a mobile telephone handsfree kit,” and “a host device,” such as a “mobile telephone.” Ex. 1010 ¶ 22. These devices “communicate according to any wireless or wired protocol” including “Bluetooth.” *Id.* The peripheral device includes “control circuitry 12, in the form of a suitably programmed processor” that “is connected to transceiver (TRX) circuitry 14, which handles radio frequency communications with other electronic devices able to use the same wireless protocol.” *Id.* ¶ 24. Likewise,

“host . . . device 20 has control circuitry 22, in the form of a suitably programmed processor” that “is connected to transceiver (TRX) circuitry 24, which handles radio frequency communications with other electronic devices able to use the same wireless protocol.” *Id.* ¶ 28. Vauclair describes a pairing process between the devices where the host device sends and receives wireless signals from the peripheral device 10. *Id.* ¶ 34, Fig. 2.

7. Analysis of Claim 20

a) Preamble

Claim 20 recites “[a] mobile communication device.” Ex. 1001, 40:21. Petitioner argues that Sweeney teaches this portion of claim 20. Pet. 23. On the present record, Patent Owner does not dispute this argument. Sweeney discloses “wireless devices, such as cell phones” that “include a transceiver configured to transmit [a] signal to [a] wireless accessory and receive location information from the wireless device” and that a user moves while searching for a wireless device. Ex. 1005 ¶¶ 2, 5, 22, Fig. 1.

b) Limitation 20(a)

Claim 20 recites “a plurality of wireless transceivers.” Ex. 1001, 40:22. Petitioner argues that the combination of Sweeney, Kalliola, Turunen, and Mohammadian teaches or suggests this limitation for the reasons discussed below with respect to limitations 20(a)(i), 20(a)(ii), and 20(a)(iii), which recite various transceivers. On the present record, Patent Owner does not dispute this argument.

c) Limitation 20(a)(i)

Claim 20 recites “a Bluetooth transceiver.” Ex. 1001, 40:22–23. Petitioner argues that Sweeney teaches this limitation. Pet. 24–26. On the present record, Patent Owner does not dispute this argument. Sweeney teaches a wireless link between a wireless device and a wireless accessory,

and “the wireless link . . . may be a Bluetooth® connection.” Ex. 1005 ¶ 17, Fig. 1. The wireless device of Sweeney “may . . . include a transceiver configured to transmit [a] signal to the wireless accessory and receive location information from the wireless device.” *Id.* ¶ 5. Dr. Buehrer testifies that these teachings amount to a teaching that Sweeney includes a Bluetooth transceiver. Ex. 1003 ¶¶ 165–166.

d) Limitation 20(a)(ii)

Claim 20 recites “a long-range transceiver configured to send and receive telephone calls via a telephony network and to communicate Internet data.” Ex. 1001, 40:23–25. Petitioner argues that the combination of Kalliola and Turunen teaches this limitation and that a person of ordinary skill in the art would have had a reason to combine the teachings of these references with those of Sweeney. Pet. 26–30. On the present record, Patent Owner does not dispute this argument. Kalliola teaches that its wireless communication device includes “[l]ong-range communications” that “performs functions related to the exchange of information over large geographic areas (such as cellular networks) via an antenna.” Ex. 1006 ¶ 46, Fig. 3. The methods used for these long-range communications include “basic voice communications (e.g., via GSM).” *Id.* ¶ 46. Turunen teaches the transmission of internet data between a mobile device and the internet. Ex. 1007, 5:30–38. Dr. Buehrer testifies that a person of ordinary skill in the art would have expected Sweeney’s wireless device to be capable of sending and receiving telephone calls using the GSM network taught by Kalliola. Ex. 1003 ¶¶ 179–181. Dr. Buehrer also testifies that a person of ordinary skill in the art would have been motivated to modify the mobile device of Sweeney and Kalliola to be capable of internet data communications over Kalliola’s GPRS link. *Id.* ¶ 182.

e) Limitation 20(a)(iii)

Claim 20 recites “one or more ultrawideband transceivers coupled to two or more antennas.” Ex. 1001, 40:25–27. Petitioner argues that Mohammadian teaches this limitation and that a person of ordinary skill in the art would have had a reason to combine the teachings of Mohammadian with those of Sweeney, Kalliola, and Turunen. Pet. 31–32. On the present record, Patent Owner does not dispute this argument. Mohammadian teaches equipping a “wireless device” with “a UWB transceiver,” and it defines “UWB” as referring to “Ultra-Wideband.” Ex. 1008 ¶¶ 4, 26, Fig. 1. It also teaches using “multiple antennas.” *Id.* ¶¶ 24, 26. Dr. Buehrer testifies that a person of ordinary skill in the art would have combined the teachings of Mohammadian with those of Sweeney, Kalliola, and Turunen in order to give the resulting wireless communication device “high speed communications” using “very little power.” Ex. 1003 ¶ 185 (quoting Ex. 1008 ¶ 4).

f) Limitation 20(b)

Claim 20 recites “a memory that stores operational instructions.” Ex. 1001, 40:28. Petitioner argues that Sweeney teaches this limitation. Pet. 33–34. On the present record, Patent Owner does not dispute this argument. The wireless device of Sweeney includes “a memory for storing the set of instructions which may include a location application for locating a wireless accessory.” Ex. 1005 ¶ 6.

g) Limitation 20(c)

Claim 20 recites “a touch screen.” Ex. 1001, 40:29. Petitioner argues that Sweeney teaches this limitation. Pet. 34–35. On the present record, Patent Owner does not dispute this argument. The display of Sweeney’s wireless device “may be a . . . touch screen.” Ex. 1005 ¶ 30.

h) Limitation 20(d)(i)

Claim 20 recites “a processor coupled to the memory and to the touch screen.” Ex. 1001, 40:30–31. Petitioner argues that the combination of Sweeney and Kalliola teaches this limitation. Pet. 35–38. On the present record, Patent Owner does not dispute this argument. Sweeney depicts a processor coupled to a memory. Ex. 1005, Fig. 3. Kalliola teaches a processor coupled to a user interface, Ex. 1006 ¶ 53, such as the touch screen of Sweeney.

i) Limitation 20(d)(ii)

Claim 20 recites “wherein the processor is configured to execute the operational instructions.” Ex. 1001, 40:31–33. Petitioner argues that Sweeney teaches this limitation. Pet. 38–39. On the present record, Patent Owner does not dispute this argument. Sweeney discloses a “set of instructions” that “may be executed by the processor.” Ex. 1005 ¶ 37.

j) Limitation 20(d)(iii)

Claim 20 recites “present a graphical user interface via the touch screen.” Ex. 1001, 40:34. Petitioner argues that Sweeney teaches this limitation. Pet. 39–40. On the present record, Patent Owner does not dispute this argument. Sweeney discloses that its display, which is a touch screen, “may display a graphical user interface (GUI).” Ex. 1005 ¶ 22, 29, 30.

k) Limitation 20(d)(iv)

Claim 20 recites “generate pairing signals in response to indications from a user via the graphical user interface to pair the mobile communication device to each of a plurality of remote devices.” Ex. 1001, 40:35–38. Petitioner argues that the combination of Sweeney and Vauclair teaches this limitation and that a person of ordinary skill in the art would

have had a reason to combine the teachings of these references with those of Sweeney, Kalliola, Turunen, and Mohammadian. Pet. 40–47. On the present record, Patent Owner does not dispute this argument. Sweeney discloses using a wireless device to search for and locate remote “wireless accessories,” with the user able to “select a wireless accessory from a list.” Ex. 1005 ¶¶ 6, 16, 25, 53, Fig. 1. According to Sweeney, the wireless device and the wireless accessories communicate using Bluetooth. *Id.* ¶¶ 17, 33, 41. Vauclair also teaches first and second devices communicating via Bluetooth. Ex. 1010 ¶ 22. In Vauclair, “to initiate the [pairing] process, the user may select a pairing option from a menu,” causing the device “to send a signal to the control circuitry.” *Id.* ¶¶ 30, 36. Vauclair’s control circuitry is “in the form of a suitably programmed processor,” which initiates a Bluetooth pairing sequence in response to the signal. *Id.* ¶¶ 28, 49, 51, Figs. 2, 3. Dr. Buehrer testifies that a person of ordinary skill in the art would have combined the teachings of Vauclair with those of Sweeney because Vauclair provides a detailed description of the Bluetooth pairing process that Sweeney teaches using. Ex. 1003 ¶¶ 218–220.

l) Limitation 20(d)(v)

Claim 20 recites “wherein the Bluetooth transceiver responds to the pairing signals by communicating RF signals to pair the mobile communication device to each of the plurality of remote devices.” Ex. 1001, 40:38–41. Petitioner argues that Vauclair teaches this limitation. Pet. 48–50. On the present record, Patent Owner does not dispute this argument. Vauclair teaches “transceiver circuitry” that “handles radio frequency communications with other electronic devices,” and it describes a series of radio signals sent between the devices to effectuate the Bluetooth pairing process. Ex. 1010 ¶¶ 28, 34, 37, Fig. 2.

m) Limitation 20(d)(vi)

Claim 20 recites “wherein a unique device identifier associated with each of the plurality of remote devices is shared with the mobile communication device during pairing.” Ex. 1001, 40:41–44. Petitioner argues that Vauclair teaches this limitation. Pet. 50–51. On the present record, Patent Owner does not dispute this argument. Vauclair teaches the use of a peripheral device identifier that “uniquely identifies the peripheral device.” Ex. 1010 ¶ 51. The peripheral device sends this identifier during the pairing process, and the host device receives the identifier. *Id.* ¶¶ 38–39.

n) Limitation 20(d)(vii)

Claim 20 recites “display, via the graphical user interface, a name associated with each of the plurality of remote devices.” Ex. 1001, 40:45–46. Petitioner argues that the combination of Sweeney and Kalayjian teaches this limitation. Pet. 51–54. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that a user may choose a wireless accessory to search for by “select[ing] a wireless accessory from a list.” Ex. 1005 ¶ 53. Kalayjian teaches the use of a graphical user interface that “include[s] list 630 of the [second] devices that are associated with [first] device 600,” which “permit[s] a user to select a [second] device from list 630.” Ex. 1009 ¶ 47. On Kalayjian’s list, each second device has a name associated with it. *Id.* at Fig. 6. Dr. Buehrer testifies that a person of ordinary skill in the art would have combined Kalayjian’s use of device names in a list with Sweeney’s use of a list to select a device to locate in order to allow a user to more easily view and select the appropriate device. Ex. 1003 ¶ 237.

o) Limitation 20(d)(viii)

Claim 20 recites “receive a selection of a selected remote device of the plurality of remote devices in response to selection, via the graphical user interface, of the name associated with the selected remote device.” Ex. 1001, 40:47–50. Petitioner argues that the combination of Sweeney and Kalayjian teaches this limitation. Pet. 54–55. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that “[t]he user may enter the selection [of a peripheral device] using a graphical user interface.” Ex. 1005 ¶ 53. Kalayjian teaches selecting a second device from a list of names associated with various second devices. Ex. 1009 ¶ 47, Fig. 6. After a name is selected from Kalayjian’s list, the graphical user interface displays “status information 730 about the selected [second] device.” *Id.* ¶ 48, Fig. 7.

p) Limitation 20(d)(ix)

Claim 20 recites “wherein the graphical user interface visually indicates the selection of the selected remote device.” Ex. 1001, 40:50–52. Petitioner argues that Kalayjian teaches this limitation. Pet. 55–57. On the present record, Patent Owner does not dispute this argument. Kalayjian teaches that, after the user selects a second device, “[s]creen 716 can include title 720 to identify the selected [second] device.” Ex. 1009 ¶ 48, Fig. 7.

q) Limitation 20(d)(x)

Claim 20 recites “determine whether the selected remote device is in range of the Bluetooth transceiver, wherein the selected remote device is determined to be in range of the Bluetooth transceiver based on reception, via the Bluetooth transceiver, of a beacon from the selected remote device.” Ex. 1001, 40:53–58. Petitioner argues that Sweeney teaches this limitation. Pet. 57–58. On the present record, Patent Owner does not dispute this

argument. Sweeney teaches that, after a user selects an accessory to locate, the wireless device “scan[s] for the wireless accessory and inform[s] the user once the wireless [accessory] is in range of the wireless device. Ex. 1005 ¶ 54. The determination that the accessory is within range is made based on a determination by the wireless device’s “transceiver 308 that a signal has been received from the wireless accessory.” *Id.* ¶ 38. Dr. Buehrer testifies that this transceiver is a Bluetooth transceiver. Ex. 1003 ¶¶ 165–166.

r) Limitation 20(d)(xi)

Claim 20 recites “generate an audio alert signal in response to a second indication from the user via the graphical user interface.” Ex. 1001, 40:59–61. Petitioner argues that the combination of Sweeney, Kalayjian, and Vauclair teaches this limitation. Pet. 58–62. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that the user “may enable the wireless device 104 to transmit a signal through the wireless link 108 commanding the wireless accessory 106 to emit an alert to the wireless user 102 indicating the location of the wireless accessory 106.” Ex. 1005 ¶ 23. This alert may be an “alarm.” *Id.* ¶ 42. The second device of Kalayjian includes “speaker 324 to emit sounds operable to guide a user to its location,” and the first device of Kalayjian includes a screen that “can include graphical button 850 to enable the user to prompt the [second] device to beep.” Ex. 1009 ¶¶ 34, 49, Fig. 8. Vauclair teaches that selecting an option from a menu results in “send[ing] a signal to the control circuitry.” Ex. 1010 ¶ 30.

s) Limitation 20(d)(xii)

Claim 20 recites

wherein the Bluetooth transceiver transmits a first RF signal to the selected remote device in response to the audio alert signal,

wherein the first RF signal indicates a request to the selected remote device to emit an audio alert to audibly assist the user in determining a location of the selected remote device.

Ex. 1001, 40:61–67. Petitioner argues that the combination of Sweeney and Kalayjian teaches this limitation. Pet. 62–63. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that the user “may enable the wireless device 104 to transmit a signal through the wireless link 108 commanding the wireless accessory 106 to emit an alert to the wireless user 102 indicating the location of the wireless accessory 106.” Ex. 1005 ¶ 23. This alert may be an “alarm.” *Id.* ¶ 42. Sweeney also teaches a transceiver that transmits Bluetooth signals to the accessory. *Id.* ¶¶ 5, 17. Similarly, Kalayjian teaches a Bluetooth transceiver that transmits a Bluetooth signal to the second device to prompt the second device to beep. Ex. 1009 ¶¶ 7, 38–39, 49, 54, Fig. 10. Dr. Buehrer testifies that a person of ordinary skill in the art would have known that Bluetooth signals are RF signals. Ex. 1003 ¶ 261.

t) Limitation 20(d)(xiii)

Claim 20 recites “determine an estimated distance to the selected remote device, based on the reception, via the Bluetooth transceiver, of the beacon from the selected remote device.” Ex. 1001, 41:1–4. Petitioner argues that Sweeney teaches this limitation. Pet. 64–65. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that “the wireless device displays location information to the user,” with that information including “an approximate distance to the wireless device determined and based on the signal strength received from the wireless accessory.” Ex. 1005 ¶ 55, Fig. 5.

u) Limitation 20(d)(xiv)

Claim 20 recites “present at least one display, via the graphical user interface, wherein the at least one display includes an estimated position of the selected remote device on a map, and wherein the at least one display indicates the estimated distance to the selected remote device.” Ex. 1001, 41:5–9. Petitioner argues that Sweeney teaches this limitation. Pet. 64–65. On the present record, Patent Owner does not dispute this argument. Sweeney teaches that “the wireless device displays location information to the user,” with that information including “an approximate distance to the wireless device.” Ex. 1005 ¶ 55, Fig. 5. Sweeney also teaches that “location application 306 may display an arrow, map, or text for helping the user find the wireless accessory 310.” *Id.* ¶ 40. In addition, Dr. Buehrer testifies that a person of ordinary skill in the art would have configured Sweeney’s graphical user interface to display distance and a map on the same display in order to permit a user to see both pieces of location information simultaneously. Ex. 1003 ¶ 271.

v) Conclusion Regarding Claim 20

Based on the current record, there is a reasonable likelihood that Petitioner will prevail in demonstrating that claim 20 is unpatentable as obvious in view of Sweeney, Kalliola, Turunen, Mohammadian, Kalayjian, and Vauclair.

8. Analysis of Claim 27

Because Petitioner demonstrates a reasonable likelihood of success in proving that at least one claim of the ’246 patent is unpatentable, we institute review on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge raised by Petitioner,

especially, as in this case, when Patent Owner does not separately argue those claims. Those challenges, in our view, are best left for trial after full development of the record.

E. Remaining Grounds

Petitioner also challenges the patentability of claims 21–26 based on the addition of Thorn to the combination discussed above, and challenges the patentability of claim 26 by additionally relying on Lopatin. *See* Pet. 7–8, 68–80. Patent Owner does not separately address the merits of Petitioner’s other prior art challenges.

Because Petitioner meets the threshold for institution by demonstrating a reasonable likelihood that at least claim 20 is unpatentable as obvious, we need not decide whether Petitioner’s other challenges demonstrate the same. Those challenges, in our view, are best left for trial after full development of the record.

III. CONCLUSION

Following 35 U.S.C. § 314, we have determined that the totality of the information presented at this stage shows there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition, and we institute on all grounds raised and all claims challenged in the Petition.

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. This is not a final decision as to the patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record as fully developed during trial.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 20–27 of the '246 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that 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, which commences on the entry date of this Decision.

IPR2024-00400
Patent 11,350,246 B2

FOR PETITIONER:

Jennifer C. Bailey
Callie A. Pendergrass
ERISE IP, P.A.
Jennifer.Bailey@eriseip.com
Callie.Pendergrass@eriseip.com

FOR PATENT OWNER:

John S. LeRoy
Frank A. Angileri
Marc Lorelli
BROOKS KUSHMAN P.C.
jleroy@brookskushman.com
fangileri@brookskushman.com
mlorelli@brookskushman.com