

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ERICSSON INC. AND NOKIA OF AMERICA CORPORATION,
Petitioner,

v.

HEADWATER PARTNERS II LLC,
Patent Owner.

IPR2025-00404
Patent 9,413,502 B2

Before HYUN J. JUNG, STEPHEN E. BELISLE, and RUSSELL E. CASS,
Administrative Patent Judges.

CASS, *Administrative Patent Judge.*

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

I. INTRODUCTION

A. Background

Ericsson Inc. and Nokia of America Corporation (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–17, 19, 26, 28–41, and 43–46 (the “challenged claims”) of U.S. Patent No. 9,413,502 B2 (Ex. 1001, “the ’502 patent”). Paper 2 (“Pet.”). Headwater Partners II LLC, (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review, under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under 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 (2018); *see also* 37 C.F.R. § 42.4(a) (2024) (“The Board institutes the trial on behalf of the Director.”). The reasonable likelihood standard is “a higher standard than mere notice pleading,” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Real Parties in Interest

Petitioner states that Ericsson Inc. and Nokia of America Corporation are real parties in interest in this proceeding. Pet. 62. Petitioner also states that:

In an abundance of caution, only for purposes of this proceeding, and only to the extent that Patent Owner contends that they should be named an RPI, Petitioners also identify the following entities as potential RPIs without conceding that they would satisfy the factually intensive RPI test: Sprint LLC, AT&T Services, Inc., AT&T Mobility LLC, AT&T Enterprises LLC, T-Mobile USA, Inc., Cellco Partnership d/b/a Verizon Wireless, Verizon Corporate Services Group Inc., and Telefonaktiebolaget LM Ericsson.

Id. Petitioner further states that:

In addition, some of the entities listed above out of an abundance of caution are holding companies that are legally and factually distinct from their subsidiaries (that may also be listed above and which maintain their own independent corporate status, identity, and structure) and have not provided any products or services that might be at issue in the underlying patent infringement lawsuit.

Id.

Patent Owner “identifies Headwater Partners II LLC as the real party in interest.” Paper 9, 1.

C. Related Proceedings

The parties identify the following district court cases involving the ’502 patent: *Headwater Partners II LLC v. Cellco Partnership d/b/a Verizon Wireless et al.*, No. 2:24-cv-00007-JRG (E.D. Tex.); *Headwater Partners II LLC v. T-Mobile USA, Inc., et al.*, No. 2:24-cv-00015-JRG (E.D. Tex.); *Headwater Partners II LLC v. AT&T Services, Inc. et al.*, No. 2:24-cv000016-JRG (E.D. Tex.). Pet. 63; Paper 9, 1.

D. The '502 Patent (Ex. 1001)

The '502 patent is entitled “Backhaul Assisted by User Equipment.” Ex. 1001, code (12). The '502 patent relates to “[s]ystems, methods, and apparatuses for . . . assisting backhaul by user equipment.” *Id.*, code (57). An embodiment of the alleged invention is shown in Figure 3, reproduced below.

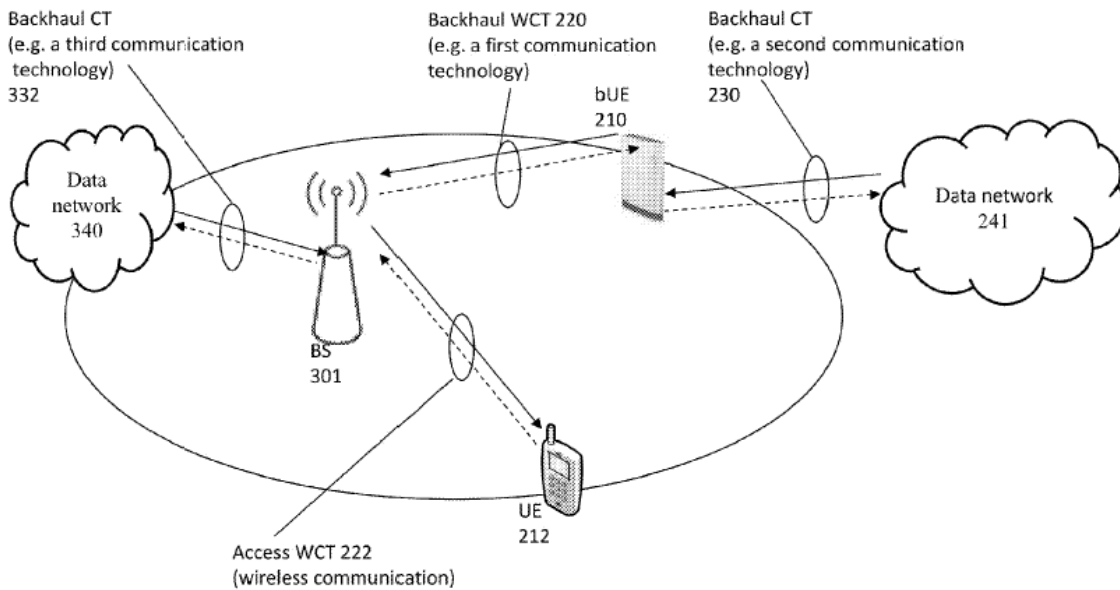


Figure 3

Ex. 1001, Fig. 3, 2:31–32.

As shown in Figure 3, base station (BS) 301 communicates with user equipment (UE) 212 over a wireless communication technology (WCT) 222. Ex. 1001, Fig. 3, 5: 3–6, 9:49–50. BS 301 communicates with a backhaul user equipment (bUE) 210 over WCT 220 (a first communication technology). *Id.* at Fig. 3, 4:59–65. bUE 210 communicates with a data network 241 over a second communication technology 230. *Id.* at Fig. 3, 4:65–3. The second communication technology “includes one or more of broadband internet connectivity, wired communication technology, T1, E1,

digital subscriber line (DSL), Data Over Cable Service Interface Specification (DOCSIS), cable modem, wireless communication technology, WiFi, WiMax, point to point (P2P) or point to multi-point (P2mP) microwave, fiber communication technology, 3G, [or] 4G.” *Id.* at 7:27–34. “For example,” the Specification explains, backhaul WCT 220 (the first communication technology) “may be one of 2G or 3G WCT” and backhaul CT 230 “may be a 4G WCT.” *Id.* at 7:34–36.

As shown in Figure 3, BS 301 is further operable to communicate with data network 340 over backhaul CT 332 (a third communication technology). Ex. 1001, Fig. 3, 9:49–53. The third communication technology may include, for example, “one or more of wired communication technology, T1, E1, DSL, DOCSIS, cable modem, wireless communication technology, WiFi, WiMax, P2P or P2mP microwave, [or] fiber communication technology.” *Id.* at 9:58–63.

The BS “is operable to communicate with [UE] devices, and network connect the UE devices to the data network through the bUE devices” and “network connect the UE devices to the data network through the bUE devices.” Ex. 1001, code (57). The BS is also operative to “select bUE devices for backhaul (BH) traffic, aid in selecting a transmission power level of the bUE devices, or the one or more UE devices, and transmit resource block (RB) scheduling information for the BH traffic of the bUE devices and the access traffic of the one or more UE devices.” *Id.*

E. Illustrative Claims

Of the challenged claims, claims 1, 28, 30, 31, 40, and 43 are independent. Claim 1 is illustrative and is reproduced below.

1. [pre] A system comprising:

- 1[a] a base station (BS) operable to communicate directly with a first data network;
- 1[b] a plurality of backhaul user equipment (bUE) devices, each of the plurality of bUE devices operable to wirelessly communicate with the BS through at least a first communication technology, and the plurality of bUE devices each operable to communicate with a second data network through at least a second communication technology, wherein the second data network is different than the first data network;
- 1[c] the BS operative to: wirelessly communicate with one or more user equipment (UE) devices, and network connect the one or more UE devices to the second data network through one or more of the plurality of bUE devices, or directly to the first data network through a third communication technology;
- 1[d] [the BS operative to:] communicate backhaul (BH) traffic through a selectable one of to the second data network through the one or more of the plurality of bUE devices, and directly to the first data network, wherein the BH traffic comprises access traffic from the one or more UE devices;
- 1[e] [the BS operative to:] aid in selecting a transmission power level of at least one of the plurality of bUE devices, and at least one of the one or more UE devices; and;
- 1[f] [the BS operative to:] transmit resource block (RB) scheduling information for the BH traffic of at least one of the plurality of bUE devices and the access traffic of at least one of the one or more UE devices.

Ex. 1001, 48:45–49:7 (bracketed paragraph identifiers added).

F. Applied References

Petitioner relies upon the following references:

Ishii, US 9,544,827 B2, issued Jan. 10, 2017 (Ex. 1004 (“Ishii”));

Sfar, WO 2013/037903 A2, published Mar. 21, 2013
(Ex. 1005, “Sfar”).

Pet. 2–3.

Petitioner submits the Declaration of Dr. Stan McClellan (Ex. 1006).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–17, 19, 26, 28–41, 43–46 of the ’502 patent based on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 12–17, 26, 28, 30–32, 37, 38, 40, 43	103(a) ¹	Ishii
6–11, 19, 29, 33–36, 39, 41, 44–46	103(a)	Ishii, Sfar

Pet. 3.

II. DISCUSSION

A. Claim Construction

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b) (2020). Petitioner identifies the term “client side modem functionality” in claim 5 for construction. Pet. 14. Patent Owner does not address the construction of this term. *See* Prelim. Resp. 4–6. We determine that we do not need to construe the term “client side modem functionality” for purposes of this decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed.

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of an application to which the ’502 patent claims priority. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

Patent Owner argues that the terms “first communication technology,” “second communication technology,” and “third communication technology” should “be understood to have their plain meaning wherein each of these recited communication technologies is a different communication technology.” Prelim. Resp. 5. For purposes of this decision, we will apply Patent Owner’s understanding of these terms. However, we note that Patent Owner does not explain what it means by a “different” communication technology, or how to determine whether two communication technologies qualify as “different.” *Id.* at 5–6. The parties may wish to explore the meaning of this term further during the trial.

The parties do not propose constructions for any other claim terms, and we determine that it is not necessary to provide an express interpretation of any other claim terms at this stage of the proceeding. *See Nidec*, 868 F.3d at 1017; *Vivid Techs.*, 200 F.3d at 803.

B. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented 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 skill in the art; and (4) where in evidence, objective evidence of non-obviousness.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b) (2020). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

Relying on Dr. McClellan, Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention “would have been someone with at least (1) a bachelor’s degree in electrical engineering, computer engineering/science, or a related scientific field, and (2) either (a) a master’s degree in electrical engineering, computer engineering/science, or a related field, or (b) two or more years of work or research experience in wireless networking and/or computing.” Pet. 13

² At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

(citing Ex. 1006 ¶ 21). At this stage of the proceeding, Patent Owner does not challenge Petitioner’s position. Prelim. Resp. 4.

At this stage of the proceeding, we adopt Petitioner’s assessment of the level of skill in the art, which is consistent with the ’502 patent and the asserted prior art of record.

D. Ground 1: Obviousness of Claims 1–5, 12–17, 26, 28, 30–32, 37, 38, 40, and 43 over Ishii and the Knowledge of a Person of Ordinary Skill

Petitioner contends that claims 1–5, 12–17, 26, 28, 30–32, 37, 38, 40, and 43 would have been obvious over Ishii and the knowledge of a person of ordinary skill in the art. Pet. 3, 19–49. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation and provides rationales to support its obviousness contentions. *Id.*

Petitioner also relies upon the McClellan Declaration (Ex. 1006) to support its positions. Patent Owner asserts that the claims are not obvious over Ishii and the knowledge of a person of ordinary skill. Prelim. Resp. 6–12. In particular, Patent Owner alleges that Ishii fails to teach or make obvious “three different communication technologies arranged in the claimed manner,” as required by limitations 1[b] and 1[c]. *Id.*

1. Overview of Ishii (Ex. 1004)

Ishii discloses “[a] hybrid user equipment and small-node device data offloading architecture.” Ex. 1004, code (57). In this architecture, small-node devices “include[] a backhaul link to a telecommunication network and/or the Internet.” *Id.* User equipment (UE) “can send and receive data through the small-node device using the backhaul link according to a half-duplex FDD radio resource assignment in a wireless link between the user equipment and the small-node device.” *Id.*

2. Analysis of Independent Claim 1

As noted previously, claim elements 1[a] through 1[c] recite: (1) “a base station (BS) operable to communicate directly with a first data network” (limitation 1[a]); (2) “a plurality of backhaul user equipment (bUE) devices . . . operable to wirelessly communicate with the BS through at least a first communication technology” (limitation 1[b]); (3) “the plurality of bUE devices each operable to communicate with a second data network through at least a second communication technology, wherein the second data network is different than the first data network” (limitation 1[b]); and (4) “the BS operative to . . . wirelessly communicate with one or more user equipment (UE) devices, and network connect one or more UE devices to the second data network through one or more of the plurality of bUE devices, or directly to the first data network through a third communication technology” (limitation 1[c]).

With respect to item (1) above, Petitioner argues that Ishii discloses “a base station operable to communicate directly with a first data network because it discloses a base station that connects to a higher layer station,” such as “access gateway apparatus 300,” which “is part of the core network.” Pet. 21 (citing Ex. 1004, 6:34–53, 9:17–22, Fig. 1b; Ex. 1006 ¶ 48). Petitioner states that the “core network is a first data network. *Id.* (citing Ex. 1006 ¶ 48).

As to (2), Petitioner argues that argues that Ishii discloses “advanced user equipment (‘UE-A’) and ‘small-node devices’” that “function as backhaul user equipment devices.” Pet. 23 (citing Ex. 1004, 3:32–35, 6:66–7:6; Ex. 1006 ¶ 53). Petitioner asserts that a UE-A shares a number of features in common with a conventional UE, but “may be a network-side device analogous to a base station” that “allows offloading of data traffic

that would otherwise have to be carried by the link between the macrocell base station and the UE.” *Id.* at 23–24 (quoting Ex. 1004, 5:11–23). Petitioner also points to Ishii’s disclosure that “[t]he UE-A has a backhaul link to the core network and/or the Internet to accommodate the offloaded data.” *Id.* at 24 (citing Ex. 1004, 5:23–25). Petitioner argues that the small-node devices are analogous to UE-As and also “opportunistically offload traffic from the macro base stations” using “a backhaul link, which is connected to the Internet or the core network so as to communicate with a server in the Internet or the core network.” *Id.* (citing Ex. 1004, 7:49–52). Petitioner further contends that Ishii’s system uses a plurality of bUEs, in the form of UE-As or small node devices. *Id.* at 24–25 (citing Ex. 1004, Figs. 1a, 1b, 9:3–5).

Petitioner also argues that “Ishii discloses that its plurality of bUE devices wirelessly communicate with the base station through a first communication technology” using “a base-station-to-small-node-device (BS2D) link.” Pet. 26 (citing Ex. 1004, 9:35–39; Ex. 1006 ¶ 57). This BS2D link is shown in Figure 3 of Ishii, reproduced below.

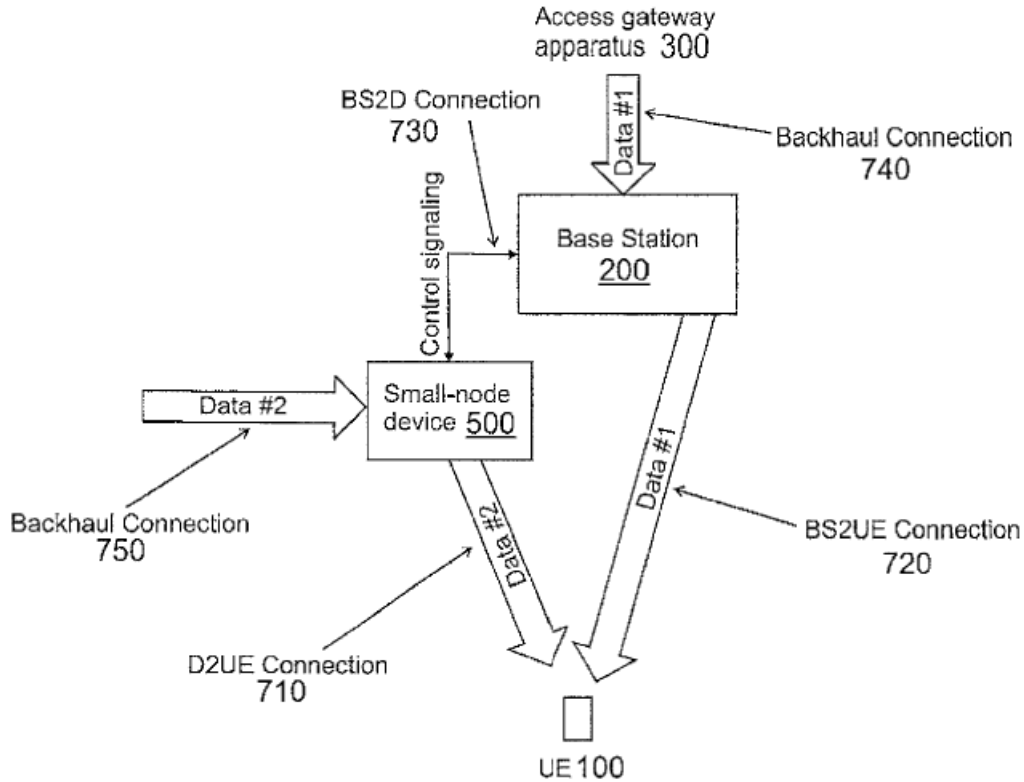


FIG. 3

Figure 3 of Ishii illustrates the control-plane and user-plane data flows for a small-node device. Ex. 1004, Fig. 3, 3:52–53.

Petitioner also cites to Ishii’s disclosure that “the BS2D link may comprise a wired X2 interface link” or, alternatively, “may be a wired or wireless link that is different from an X2 link.” *Id.* at 26 (citing Ex. 1004, 9:35–39). Thus, according to Petitioner, the small-node devices may communicate with the base station over a wireless BS2D connection (a first communication technology).

With respect to item (3), Petitioner argues that the small-node devices can communicate with the Internet, which is a second data network different from the first (core) data network. Pet. 26 (citing Ex. 1004, 5:23-25, 7:49–52). According to Petitioner, the small-node devices “communicate with the Internet through a WiFi or a cellular connection.” *Id.* at 27 (citing

Ex. 1004, 7:52–55). “This WiFi or cellular connection”, Petitioner contends “is a second communication technology that is different from the first communication technology (i.e., an X2 interface or LTE).” *Id.* (citing Ex. 1004, 9:35–39; Ex. 1006 ¶ 59).

With respect to item (4), Petitioner argues that the base station communicates with the UE through a wireless BS2UE connection, as shown in Figure 3 reproduced above. Pet. 29 (citing Ex. 1004, 3:3–11; Ex. 1006 ¶ 61). Petitioner also asserts that the base station connects UE device to the Internet (the second data network) through one or more of the small-node devices (plurality of bUE devices). *Id.* at 29–30 (citing Ex. 1004, 10:2–22; Ex. 1006 ¶ 62). Petitioner cites to portions of Ishii explaining that the base station can decide what data to communicate directly through the base station and what data to offload to the small-node devices. *Id.* Therefore, the BS can communicate some data directly to the core network (the first data network) through the BS itself, and offload other data to the small-node devices (one or more of the plurality of bUE devices) to communicate to the Internet (the second data network) through backhaul connection 750.

Finally, Petitioner argues, “Ishii discloses that the base station communicates with the first data network through a third communication technology.” Pet. 31–32 (citing Ex. 1004, 6:40–46). Petitioner references Ishii’s disclosures that the system can use “Evolved Universal Radio Access (E-UTRA)/Universal Terrestrial Radio Access Network (UTRAN) (also denoted as Long Term Evolution (LTE)),” as well as “a wide variety of other wireless protocols such as WiMax, WiFi, or LTE Advanced,” and that “[t]he backhaul link” between the small-node devices and the core network “may be a wired connection or a wireless connection or a mixture of a wired

connection and a wireless connection,” and that “[t]he wireless connection may be a connection provided by a WiFi (Wireless LAN) or cellular system.” *Id.*

Patent Owner responds that “the claims recite three different communication technologies used to transfer data over three different legs of a single network system,” but “the Petition’s theory fails to establish the disclosure or obviousness of this requirement.” Prelim. Resp. 6. Patent Owner acknowledges that “Ishii discloses that several different communication technologies were *known*,” but argues that “Ishii does not disclose that *three different* communication technologies would be used within the *same* implementation in the manner claimed in the ’502 patent.” *Id.* at 8. More specifically, Patent Owner argues that there is no “express disclosure” of this requirement because Petitioner does not “identify a disclosure showing that within a single implementation of the network system, *all three* communication links the Petition relied upon would use a *different* communication technology.” *Id.* at 9.

Patent Owner also argues that the claimed requirement for three different communication technologies is not inherently disclosed by Ishii because “one possible option for *each one* of the three communication links that Petitioner relies on Ishii for is a ‘cellular’ or ‘LTE’ connection.” Pet. 9–10 (citing Pet. 26–27, 31–32). According to Patent Owner, “an arrangement in which *even two* (much less *all three*) of the communication links use only the *same* LTE communication technology does not satisfy the claimed requirement that there be three *different* communication technologies within the system.” *Id.* Thus, Patent Owner contends, it is “indisputably possible

to implement Ishii’s teachings in a manner that does *not* meet the claim requirements.” *Id.* at 10.

Finally, Patent Owner argues that “the Petition does not even *allege* a theory of obviousness.” Prelim. Resp. 11. Moreover, Patent Owner contends, even if the first and second communication technologies are different (for example X2 interface or LTE for the first communication technology and WiFi or cellular for the second communication technology), “[t]he Petition provides *no* allegation that the ‘third communication technology’ would be different from *either* (much less *both*) of the alleged ‘first’ and ‘second’ communication technologies.” *Id.* at 11–12 (citing Pet. 31).

Based on the present record, we find that Petitioner has made a sufficient showing for purposes of institution.

First, we agree with Petitioner that Ishii discloses “a base station (BS) operable to communicate directly with a first data network.” *See* Pet. 21. In this regard, we agree that Ishii discloses a base station (BS) that connects to access gateway apparatus 300, which is part of the core network (a first data network). Ex. 1004, 6:34–53, 9:17–22, Figs. 1b, 5; Pet. 21; Ex. 1006 ¶ 48.

Second, we preliminarily agree with Petitioner that Ishii discloses “a plurality of backhaul user equipment (bUE) devices . . . operable to wirelessly communicate with the BS through at least a first communication technology.” *See* Pet. 23–26. We agree with Petitioner that Ishii’s advanced user equipment (UE-A) and small-node devices function as backhaul user devices using a “backhaul link” 750 connected to the core network or Internet (the second data network). Ex. 1004, 3:32–35, 5:23–25, 6:66–7:6, 7:49–52, Figs. 3, 11; Pet. 23–25. We also agree that Ishii discloses that the

bUE devices wirelessly communicate with the base station over a BS2D link using a “first communication technology,” such as “a wireless link that is different from an X2 link.” Ex. 1004, 9:35–39, Fig. 3; Pet. 26.

We also preliminarily agree that Ishii discloses that the bUE devices are “operable to communicate with a second data network” different from the first data network through a “second communication technology.” *See* Pet. 26–27. Ishii discloses that the bUEs (small-node devices) can communicate with a second data network (the Internet 410) that is different from the first data network (core network 400). Ex. 1004, 5:23-25, 7:49–52. Ishii also discloses that this communication can take place “through a WiFi or cellular connection.” *Id.* at 7:52–55. This “WiFi or cellular connection” is a “second communication technology” different from the “first communication technology.” For example, the first communication technology could be a cellular LTE wireless link and the second communication technology could be a WiFi wireless link. *See id.* at 7:52–55, 9:35–39.

Finally, we preliminarily agree with Petitioner that Ishii discloses that the base station is operative to “wirelessly communicate with one or more user equipment (UE) devices, and network connect one or more UE devices to the second data network through one or more of the plurality of bUE devices, or directly to the first data network through a third communication technology.” *See* Pet. 29–32. Ishii discloses that the base station wirelessly communicates with one or more UE devices through a wireless BS2UE connection, as shown in Figure 3 reproduced above. Ex. 1004, 3:3–11; Pet. 29; Ex. 1006 ¶ 61. As we understand the remainder of this claim element, it appears to present two alternatives: (i) that the base station

network connects UEs to the second data network through one or more bUE devices, or (ii) the base station network connects UEs to the first data network through a third communication technology.

We preliminarily determine that Ishii discloses both of these alternatives. With respect to alternative (i), we preliminarily determine that Ishii discloses that the base station network connects UEs to the second data network (Internet 410) through one or more bUE devices (small node devices 500). Ex. 1004, Figs. 3, 5, 5:23–25, 7:49–55; 10:2–22; Pet. 29–30; Ex. 1006 ¶ 62. This is further supported by Ishii’s disclosure that the base station can decide what data to communicate directly through the base station and what data to offload to the small-node devices for connection to the Internet. Ex. 1004, 10:2–22; Ex. 1006 ¶ 62. With respect to alternative (ii), we preliminarily determine that Ishii discloses that the base station communicates with the first data network (core network 400) through a third communication technology (such as WiMax or LTE Advanced). Ex. 1004, 6:40–46; Pet. 31–32; Ex. 1006 ¶ 63. More specifically, Ishii discloses that the communication between the base station and the core network can be carried out using a “wide variety of . . . wireless protocols such as WiMax . . . or LTE Advanced,” which are different communication technologies than the first communication technology (cellular LTE) and the second communication technology (WiFi). Ex. 1004, 6:40–46.

Based on the present record, we do not agree with Patent Owner’s arguments to the contrary. Patent Owner does not appear to dispute that Ishii discloses several different communication technologies for the various connections described in the claim. *See* Prelim. Resp. 6–12. Instead, Patent Owner’s argument is that Ishii does not specifically disclose a single

embodiment that itself uses three different communication technologies as claimed. *Id.* at 8–9. Ishii, however, discloses multiple alternatives for each of the first, second, and third communication technologies, and we preliminarily determine that Ishii discloses the use of each of the listed alternatives for each of the different communication technologies. The fact that other alternatives are also listed does not detract from this disclosure. *See Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1376 (Fed. Cir. 2005) (“The court rejects the notion that one . . . ingredient[] cannot anticipate because it appears . . . in a longer list,” but instead “the disclosure is prior art to the extent of its enabling disclosure.”); *Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1324 n.6 (Fed. Cir. 2003) (“The anticipation analysis asks solely whether the prior art reference discloses and enables the claimed invention, and not . . . whether alternatives are also disclosed.”).

Patent Owner cites *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) for the proposition that “[a]nticipation requires the presence in a single prior art disclosure of all elements of a claimed invention *arranged as in the claim*.” Prelim. Resp. 8–9. To begin with, we note that *Finisar* did not deal with a situation, like the one here, where the patent specification discloses multiple examples for different claim limitations (i.e., the first, second, and third communication technologies), and the use of a different example for each limitation (communication technology) satisfies the claim. *Finisar*, 523 F.3d at 1334–1338. Instead, *Finisar* found that two disclosures on different pages in a prior art reference would be read “in concert” because they both fell within the same chapter subheading and sub-subheading. *Id.* at 1337. Based on this finding, *Finisar*

determined that the prior art at issue disclosed the disputed elements of the claim. *Finisar*, 523 F.3d at 1334–1338.

Based on the above, we preliminarily determine that Ishii teaches limitations 1[a]–1[c].

We have also reviewed Petitioner’s arguments and evidence for the preamble and limitations 1[d]–1[f]. Pet. 32–40. Patent Owner does not present arguments specifically directed to these claim limitations. Based on the present record, we determine that Petitioner has sufficiently shown that Ishii teaches or makes obvious these limitations.

Consequently, at this stage of the proceeding, Petitioner has demonstrated a reasonable likelihood that claim 1 is unpatentable over Ishii.

3. Claims 2–5, 12–17, 26, 28, 30–32, 37, 38, 40, and 43

Petitioner contends that claims 2–5, 12–17, 26, 28, 30–32, 37, 38, 40, and 43 would have been obvious over Ishii. Pet. 40–49. Patent Owner does not separately address these claims at this stage of the proceeding. *See* Prelim. Resp. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 2–5, 12–17, 26, 28, 30–32, 37, 38, 40, and 43 would have been obvious over Ishii.

E. Ground 2: Obviousness of Claims 6–11, 19, 29, 33–36, 39, 41, and 44–46 Over Ishii in View of Sfar

Petitioner presents arguments that claims 6–11, 19, 29, 33–36, 39, 41, and 44–46 would have been obvious over the combination of Ishii and Sfar. Pet. 3, 49–60. Patent Owner does not separately address these claims at this stage of the proceeding. Prelim. Resp. 22–34. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable

likelihood that claims 6–11, 19, 29, 33–36, 39, 41, and 44–46 would have been obvious over the combination of Ishii and Sfar.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the '502 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (indicating that a decision whether to institute an *inter partes* review “require[s] a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–17, 19, 26, 28–41, and 43–46 of the '502 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '502 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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PETITIONER:

Jacob Baron
HOLLAND & KNIGHT LLP
jacob.baron@hklaw.com

PATENT OWNER:

Reza Mirzaie
Dale Chang
Amy Hayden
James Milkey
Neil Rubin
Philip Wang
RUSS, AUGUST & KABAT
rmirzaie@raklaw.com
dchang@raklaw.com
ahayden@raklaw.com
jmilkey@raklaw.com
nrubin@raklaw.com
pwang@raklaw.com