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Paper 12
Entered: August 21, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD.,
SAMSUNG ELECTRONICS AMERICA, INC., and APPLE INC.,
Petitioner,

v.

ROSETTA-WIRELESS CORPORATION,
Patent Owner.

Case IPR2016-00622[1]
Patent 7,149,511 B1

Before JUSTIN T. ARBES, PATRICK R. SCANLON, and JOHN A. HUDALLA, *Administrative Patent Judges.*

Opinion for the Board filed by *Administrative Patent Judge* HUDALLA.

Opinion Dissenting filed by *Administrative Patent Judge* ARBES.

HUDALLA, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

In Case IPR2016-00622 ("622 IPR"), Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Apple Inc. (collectively

[1] Case IPR2016-00616 has been consolidated with this proceeding.

"Petitioner"), filed a Petition (Paper 4[2], "622 Petition" or "622 Pet.") requesting an *inter partes* review of claims 1–10, 19–22, 58–65, and 68–71 of U.S. Patent No. 7,149,511 B1 (Ex. 1001, "the '511 patent") pursuant to 35 U.S.C. §§ 311–319. Patent Owner, Rosetta-Wireless Corporation ("Patent Owner"), filed a Preliminary Response to the 622 Petition. Paper 8 ("622 Preliminary Response" or "622 Prelim. Resp."). Taking into account the arguments presented in Patent Owner's 622 Preliminary Response, we determined that the information presented in the 622 Petition established that there was a reasonable likelihood that Petitioner would prevail in challenging claims 1–10, 19–22, 58–65, and 68–71 of the '511 patent under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this proceeding on August 22, 2016, as to these claims of the '511 patent. Paper 12 ("622 Institution Decision" or "622 Dec. on Inst.").

In related Case IPR2016-00616 ("616 IPR"), Petitioner filed a second Petition (616 IPR, Paper 1, "616 Petition" or "616 Pet.") requesting an *inter partes* review of claims 1–10 and 58–65 of the '511 patent. Patent Owner filed a Preliminary Response to the 616 Petition. 616 IPR, Paper 7 ("616 Preliminary Response" or "616 Prelim. Resp."). Taking into account the arguments presented in Patent Owner's 616 Preliminary Response, we also determined that the information presented in the 616 Petition established that there was a reasonable likelihood that Petitioner would prevail in challenging claims 1–10 and 58–65 of the '511 patent under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review proceeding on August 22, 2016, as to these claims of the

[2] Unless otherwise indicated, citations to papers and exhibits are made to Case IPR2016-00622.

'511 patent. Paper 15[3] ("616 Institution Decision" or "616 Dec. on Inst."). In the 616 Institution Decision, we ordered the consolidation of the 616 IPR with the 622 IPR for purposes of trial. *Id.* at 30–31.

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 28, "PO Resp."), and Petitioner filed a Reply to the Patent Owner Response (Paper 37, "Pet. Reply"). An oral hearing was held on February 14, 2017, and a transcript of the hearing is included in the record. Paper 46 ("Tr.").

Petitioner proffered a Declaration of Erez Zadok, Ph.D. (Ex. 1004) with the 622 Petition and a Declaration of Nathaniel Polish, Ph.D. (Ex. 1058) with the 616 Petition. Petitioner also proffered a Declaration of Dr. Zadok (Ex. 1064) with its Reply. Patent Owner proffered Declarations of William H. Mangione-Smith, Ph.D. with its Preliminary Responses (Exs. 2001, 2016) and with its Response (Ex. 2022).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–10, 19–22, 58–65, and 68–71 of the '511 patent. For the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable under 35 U.S.C. § 103(a).

I. BACKGROUND

A. Related Proceedings

Both parties identify the following proceedings related to the '511 patent (616 Pet. 1–2; 622 Pet. 6–7; Paper 7, 2):

[3] The 616 Institution Decision is included in the 622 IPR as Paper 15 because it includes a consolidation order.

Rosetta-Wireless Corp. v. Apple Inc., No. 1:15-cv-00799 (N.D. Ill., filed Jan. 27, 2015);

Rosetta-Wireless Corp. v. High Tech Computer Corp., No. 1:15-cv-10603 (N.D. Ill., filed Nov. 24, 2015);

Rosetta-Wireless Corp. v. Samsung Elecs. Co., Ltd., No. 1:15-cv-10605 (N.D. Ill., filed Nov. 24, 2015);

Rosetta-Wireless Corp. v. LG Electronics Co., No. 1:15-cv-10608 (N.D. Ill., filed Nov. 24, 2015); and

Rosetta-Wireless Corp. v. Motorola Mobility LLC, No. 1:15-cv-10611 (N.D. Ill., filed Nov. 24, 2015).

B. The '511 patent

The '511 patent is directed to "a wireless intelligent personal server that receives data transmitted over a wireless communications channel and automatically processes it so as to maintain a copy of at least one electronic file stored in a source computer." Ex. 1001, 1:8–12. Figure 1 of the '511 patent is reproduced below.

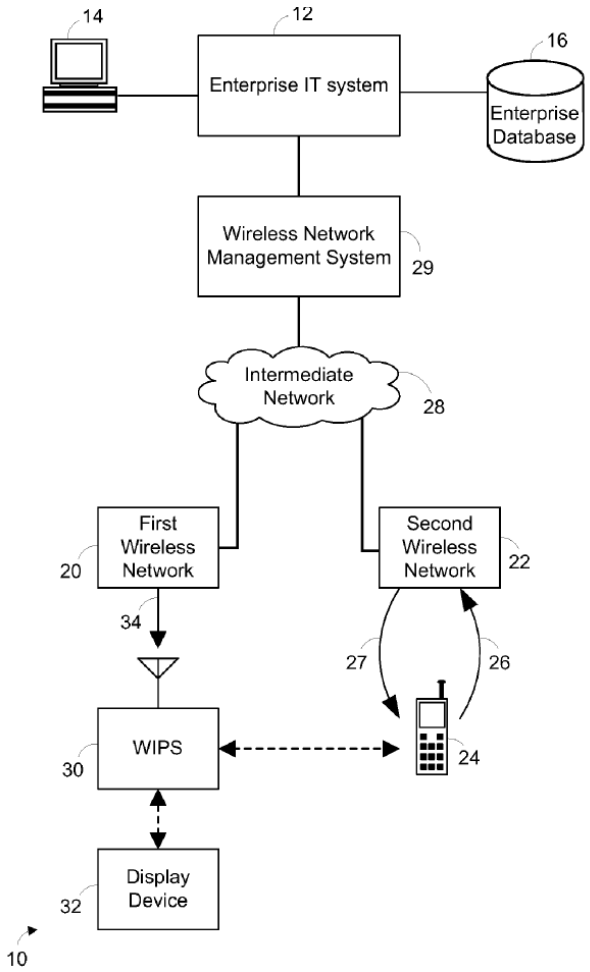

Figure 1 depicts wireless communication system 10 having enterprise information technology (IT) system 12 connected to one or more personal computers 14 and centralized enterprise database 16. *Id.* at 3:62–4:6. Enterprise IT system 12 uses wireless network management system 29 to communicate with first wireless network 20 and second wireless network 22 via intermediate network 28, which may be a wide-area network (WAN) or a local-area network (LAN). *Id.* at 4:34–41.

Wireless intelligent personal server (WIPS) 30 receives and stores data wirelessly transmitted over downstream channel 34 by first wireless network 20. *Id.* at 4:44–46, 5:35–36. WIPS 30 can use the received data to either update one or more of the files stored in its memory or to add a new

file to its memory. *Id.* at 5:41–44. WIPS 30 also may transmit signals to second wireless network 22 over upstream channel 26. *Id.* at 6:16–21. Moreover, WIPS 30 is able to transfer data stored in its memory to and from different types of display devices 32 on an intermittent basis. *Id.* at 4:48–50.

Display device 32, which may be a desktop PC or a personal digital assistant (PDA), interfaces with WIPS 30 to display data stored in WIPS 30. *Id.* at 4:55–67. This is accomplished by WIPS 30 copying requested data and transmitting it to display device 32. *Id.* at 9:64–10:8. Applications running on display device 32 also may allow a user to modify data stored in WIPS 30. *Id.* at 4:55–67; 8:39–41; 10:9–16.

The patent application from which the ’511 patent issued was filed on August 31, 2000. *Id.* at [22].

C. Illustrative Claim

Claims 1 and 58 of the ’511 patent are independent and have been amended by *Ex Parte* Reexamination Certificate US 7,149,511 C1, dated Jan. 10, 2012. Ex. 1001, 16–17 (certificate issued from Reexamination Control No. 90/011,569).[4] The remaining claims have not been amended. Claims 2–10 and 19–22 depend directly or indirectly from claim 1, and claims 59–65 and 68–71 depend directly or indirectly from claim 58. Claim 1 is illustrative of the challenged claims and recites:

[4] The ’511 patent also was the subject of a request for *ex parte* reexamination in Reexamination Control No. 90/011,418, which was terminated.

> 1. A wireless intelligent personal network server, comprising:
>
> a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;
>
> a memory;
>
> a central processing unit (CPU);
>
> a set of embedded machine language instructions within said personal network server, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
>
> a first interface for allowing an application on an external display device to pick and open said at least one electronic file while said at least one electronic file remains resident on said personal network server, wherein said personal network server is hand-portable.

Ex. 1001, 17 (1:21–2:8). Claim 58 differs from claim 1 only insofar as the word "receiver" in "radio frequency (RF) receiver" is replaced with "transceiver." *Id.* at 17 (2:11).

D. The Prior Art

Petitioner relies on the following prior art:

> Kimura et al., U.S. Patent No. 5,864,853, filed Sept. 14, 1995, issued Jan. 26, 1999 (Ex. 1035, "Kimura");
>
> Terence A. Goggin, WINDOWS CE DEVELOPER'S HANDBOOK (1999) (Ex. 1030, "Goggin");
>
> "Proxim Delivering Industry's Lowest Priced Commercial Frequency Hopping Wireless LAN PC Card," Business Wire (Mar. 29, 1999) (Ex. 1015, "Proxim");
>
> Bodnar, U.S. Patent No. 6,012,063, filed Mar. 4, 1998, issued Jan. 4, 2000 (Ex. 1005, "Bodnar");
>
> HEWLETT-PACKARD HP JORNADA 820/820E HANDHELD PC USER'S GUIDE (1998) (Ex. 1006, Ex. A, "Jornada");

"Earthmate™ GPS Receiver: The Smart Way to Navigate," http://www.delorme.com/earthmate/ (as allegedly archived by the Internet Archive on Feb. 2, 1999) (Ex. 1012, "DeLorme Receiver"), and "Earthmate™ Accessories," http://delorme.com/earthmate/accessories.htm (as allegedly archived by the Internet Archive on May 4, 1999) (Ex. 1039, "DeLorme Accessories") (collectively, "DeLorme");

Todd Ogasawara, "HP Jornada External Keyboard (Part HP F1275A) Impressions," http://to-tech.com/windowsce/jornada/keyboard/index.html (as allegedly archived by the Internet Archive on May 8, 1999) (Ex. 1013, "Ogasawara"); and

HEWLETT-PACKARD HP CAPSHARE 920 PORTABLE E-COPIER (1999) (Ex. 1007, "CapShare").

E. Instituted Grounds

We instituted trial based on the following grounds (616 Dec. on Inst. 30; 622 Dec. on Inst. 41–42):

Reference(s)	Basis	Claims Challenged	Citation
Kimura	35 U.S.C. § 103(a)	1–6, 8–10, 58–63, and 65	616 Pet. 13–59
Goggin	35 U.S.C. § 103(a)	1–10, 19, 58–65, and 68	622 Pet. 17–39
Goggin, Proxim	35 U.S.C. § 103(a)	1–10, 19, 58–65, and 68	622 Pet. 17–39
Goggin, Bodnar	35 U.S.C. § 103(a)	2 and 59	622 Pet. 39–44
Goggin, Proxim, Bodnar	35 U.S.C. § 103(a)	2 and 59	622 Pet. 39–44
Goggin, Jornada	35 U.S.C. § 103(a)	8 and 9	622 Pet. 44–50

Reference(s)	Basis	Claims Challenged	Citation
Goggin, Proxim, Jornada	35 U.S.C. § 103(a)	8 and 9	622 Pet. 44–50
Goggin, DeLorme	35 U.S.C. § 103(a)	20 and 69	622 Pet. 50–53
Goggin, Proxim, DeLorme	35 U.S.C. § 103(a)	20 and 69	622 Pet. 50–53
Goggin, Ogasawara	35 U.S.C. § 103(a)	21 and 70	622 Pet. 53–55
Goggin, Proxim, Ogasawara	35 U.S.C. § 103(a)	21 and 70	622 Pet. 53–55
Goggin, CapShare	35 U.S.C. § 103(a)	22 and 71	622 Pet. 55–57
Goggin, Proxim, CapShare	35 U.S.C. § 103(a)	22 and 71	622 Pet. 55–57

F. Claim Interpretation

In an *inter partes* review, we construe claims by applying the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms or

phrases must be set forth "with reasonable clarity, deliberateness, and precision." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

For purposes of this Decision, and based on the entire trial record, we construe the challenged claims as follows.

1. Whether the Preambles of Independent Claims 1 and 58 are Limiting

In our Decisions on Institution, we determined that the preambles of independent claims 1 and 58 are limiting based on the use of "personal network server" in the bodies of claims 1 and 58. 616 Dec. on Inst. 6–7; 622 Dec. on Inst. 8–9. The parties do not dispute this determination. *See* PO Resp. 24–25; Pet. Reply 6 n.7. We do not perceive any reason or evidence that compels any deviation from this determination. Accordingly, we adopt our previous analysis for purposes of this Final Written Decision and maintain our determination that the preambles of these independent claims are limiting.

2. "Personal Network Server"

In our Decisions on Institution, we determined that the term "personal network server" did not require explicit construction. 616 Dec. on Inst. 7–9; 622 Dec. on Inst. 9–10. In its Response, Patent Owner proffers a construction of "network server" that is slightly different than the one from its Preliminary Response: "a computer in a network configured to receive and share data resources with other devices in that network." PO Resp. 24 (citing Ex. 2022 ¶ 57), 26; 616 Prelim. Resp. 23 (proposing construction of "personal network server" as "a device configured to be interposed between a source server and an external display device that provides source server

data locally to a user."); 622 Prelim. Resp. 20 (same). Patent Owner additionally contends an ordinarily skilled artisan "would have understood that a 'network server' did not include two computers connected in a direct point-to-point communications link." *Id.* (citing Ex. 2022 ¶ 58). According to Patent Owner, the Specification of the '511 patent never uses "network" to refer to a direct point-to-point communications link; instead, Patent Owner contends "network" is used in the Specification with reference to "one of the upstream networks." *Id.* at 29–31 (citing Ex. 1001, 6:51–53, 6:55–64, 7:8–13, 8:43–51, Ex. 2022 ¶¶ 68, 80–81). Patent Owner also highlights certain arguments made during prosecution of the '511 patent in which the inventors purportedly distinguished a prior art reference (Ex. 1038, "Boals") on the basis that "Boals was not a 'network server' because it merely received video display data over a direct point-to-point communications link." PO Resp. 33 (citing Ex. 1002, 355–56; Ex. 2017 ¶ 50).

In reply, Petitioner argues that the Specification "actually describe[s] accessing files on WIPS the same way as accessing files on external devices, such as hard drives (i.e., via direct point-to-point communications links)." Pet. Reply 9 (citing Ex. 1064 ¶¶ 12–14). Dr. Zadok testifies that "Applicant[s] cited to the specification and argued that this portion of the specification described how a '***display device 32 accesses the memory in WIPS 30 as it would an external device, such as an external hard drive*** or a server on a local area network (LAN).'" Ex. 1064 ¶ 13 (quoting Ex. 1001, 6:25–28 and citing Ex. 1002, 206) (emphasis added by Dr. Zadok). Petitioner also argues that none of the dictionaries cited by the parties precludes a network server from merely having a point-to-point

communications link. Pet. Reply 9–10 (citing Ex. 1026, 5; Ex. 2024, 4; Ex. 2025, 4). Petitioner likewise cites its dictionary evidence that "a 'computer network' can consist of only two computers." *Id.* at 10 (citing Ex. 1008, 4). Petitioner additionally argues that the Applicants of the '511 patent distinguished Boals based on arguments other than the point-to-point communications link. *Id.* at 9–10 (citing Ex. 1002, 353, 355–56).

We disagree with Patent Owner's contention that the recited "network server" cannot have a point-to-point connection. The Specification of the '511 patent states that display device 32 can access WIPS 30 just as it would with an external device, such as an external hard drive. *See* Ex. 1001, 6:25–28. Such access is characteristic of a point-to-point connection. We also agree with Petitioner that the Applicants of the '511 patent distinguished Boals during prosecution "from the WIPS because Boals' host 101 'act[ed] as a video display driver' for the display device, rather than as, *e.g.*, an external hard drive." Pet. Reply 8–9 (citing Ex. 1002, 353, 355–56). This does not support Patent Owner's proposed exclusion of point-to-point connections. Finally, we agree with Petitioner that the extrinsic evidence from dictionaries does not preclude a server from having a point-to-point connection; in fact, a contemporaneous dictionary definition in the record expressly supports the notion of a "network server" having a point-to-point connection with its client. *See* Ex. 1008, 4 (defining "computer network" as "a complex consisting of two or more interconnected computers"). Based on this evidence, we do not agree that the term "network server" precludes a point-to-point connection.

Regarding the "personal" nature of the network server, Patent Owner contends we should construe "personal" to mean "configured to provide

access to a user's individual data." PO Resp. 35 (citing Ex. 2022 ¶¶ 82–84). Petitioner argues that construction of "personal" is unnecessary because it does not factor into our unpatentability determination. Pet. Reply 10. We agree with Petitioner.

For these reasons, we determine that no explicit construction of "personal network server" is required beyond our determination that the term does not exclude a point-to-point connection. *See 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.").

3. "Downstream Data"

In our Decisions on Institution, we determined that the term "'downstream data' simply reflects data moving downstream from one place to another, so the term needs no further elucidation." 616 Dec. on Inst. 11; 622 Dec. on Inst. 12. We also determined that the source of "downstream data" and the "external display device" need not be different entities. 616 Dec. on Inst. 12; 622 Dec. on Inst. 13.

Consistent with its Preliminary Response, Patent Owner contends "downstream data" should be construed to mean "data transmitted from a source server to the personal network server." PO Resp. 15 (citing Ex. 2022 ¶ 32). Patent Owner argues that the Specification of the '511 patent "clearly and consistently uses 'downstream data' to refer to data received from the source server and flowing in one direction within the network: toward the display device." *Id.* at 16. Patent Owner contends that each instance of the term "'downstream' is used to specify the direction of the data flow as being

from the source server." *Id.* (citing Ex. 2022 ¶ 33). Patent Owner also highlights the distinction between the use of "downstream" and "upstream" in the Specification and claims as further supporting its proposed construction of "downstream data." *Id.* at 17–18, 21–22. Patent Owner's arguments regarding the application of the words "downstream" and "upstream" are illustrated in its annotated version of Figure 1, which is reproduced below.

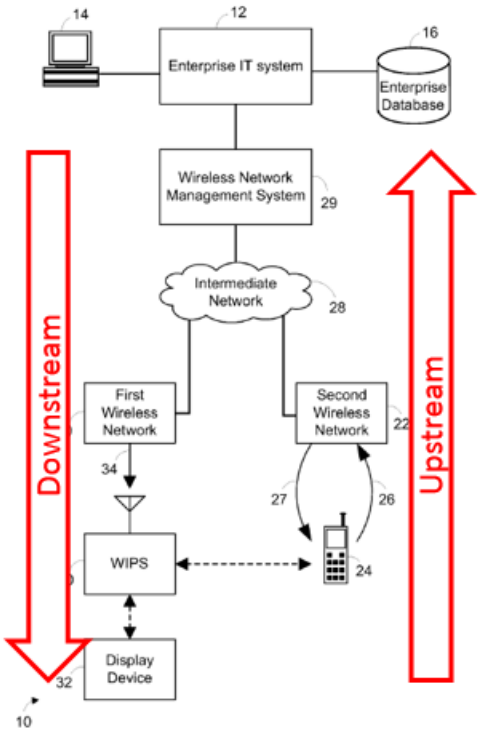

FIG. 1

Id. at 16–17 (citing Ex. 2022 ¶ 34). In this annotated figure, Patent Owner has added arrows tying the words "downstream" and "upstream" to enterprise IT system 12, which Patent Owner calls a "source server," and display device 32. *Id.* at 17 (citing Ex. 2022 ¶ 35).

Patent Owner further references the word "receiving" that precedes "downstream data" in claims 1 and 58 as indicating that "downstream" must mean something other than simply "received." *Id.* at 21. Patent Owner

additionally cites testimony from Dr. Mangione-Smith and certain dictionary definitions as supporting a construction of "downstream" that reflects a flow of data from a server to an end user. *Id.* at 23 (citing Ex. 2007, 3; Ex. 2022 ¶¶ 45–52; Ex. 2023, 3).

In reply, Petitioner argues that we should not adopt a construction that reads in an upstream source server. Pet. Reply 2. Petitioner contends a statement made by the Applicants of the '511 patent during prosecution amounts to an express definition of "downstream data" as "data that is transmitted over a wireless communications channel." *Id.* at 2–3 (quoting Ex. 1002, 356–57). Petitioner also notes that the Applicants distinguished certain prior art during prosecution because it "failed to teach WIPS files 'originat[ing]' from the 'external display device.'" *Id.* at 5–6 (quoting Ex. 1002, 356–57). According to Petitioner, this confirms that "'downstream data' may originate from the display device and not from a separate 'source server.'" *Id.*

"A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." *Merck & Co., Inc. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005). "The preference for giving meaning to all terms, however, is not an inflexible rule that supersedes all other principles of claim construction." *SimpleAir, Inc. v. Sony Ericsson Mobile Commc'ns AB*, 820 F.3d 419, 429 (Fed. Cir. 2016). We are mindful that "it is the *claims*, not the written description, which define the scope of the patent right." *Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998). In addition, our reviewing court "has repeatedly cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Williamson v.*

Citrix Online, LLC, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015) (internal quotation omitted).

We are reticent to read in a limitation—that "downstream data" must be transmitted from a "source server"—when claims 1 and 58 do not recite a source server. Thus, our inclination is not to read a "source server" into the construction of "downstream data" unless the Specification expressly requires the same.

Having reviewed the Specification of the '511 patent in detail, we agree with Petitioner (*see* Pet. Reply 4–5) that the embodiment described with reference to Figure 1 is an "exemplary embodiment." *See* Ex. 1001, 3:46–48, 3:62–64. As such, we do not discern that the Applicants intended the claims to be limited such that "downstream data" must come from a "source server." Moreover, the Specification never describes communications coming from (or going to) enterprise IT system 12 as occurring via a downstream (or upstream) channel. Rather, the Specification uses broad language—and not the terms "downstream" or "upstream"—to describe communications involving enterprise IT system 12:

> An intermediate network 28 is connected to first wireless network 20 and to second wireless network 22, and enterprise IT system 12 uses a wireless network management system 29 to communicate with wireless networks 20 and 22, via intermediate network 28. Intermediate network 28 may[ ]be any wide-area network (WAN) or local-area network (LAN) capable of transmitting digital data between enterprise IT system 12 and wireless networks 20 and 22. Preferably, intermediate network 28 is either the Internet or a private corporate network.

Id. at 4:34–43.

Furthermore, the Specification ties the term "downstream data" to the channel from which it is received. For example, several passages in the Specification state that the WIPS (or its associated receiver) receives downstream data over a wireless communications channel. *See* Ex. 1001, Abstract, 2:53–55, 2:66–3:2, 3:13–15, 3:24–26, 3:36–38, 9:3–6; *see also id.* at 1:7–12 ("[T]his invention relates to a wireless intelligent personal server that receives data transmitted over a wireless communications channel."). This channel, which corresponds to the "first wireless communications channel" in claims 1 and 58, is illustrated as downstream channel 34 in Figure 1, and it is associated with first wireless network 20. *See id.* at 5:35–36, 6:60–62, Fig. 1. Correspondingly, the WIPS causes a wireless telephone to transmit upstream data over an upstream channel. *See id.* at 7:23–28. In Figure 1, upstream channel 26 is associated with second wireless network 22. *See id.* at 4:30–33, 5:51–53, Fig. 1. Thus, the Specification associates the words "downstream" and "upstream" with a particular channel and/or network, rather than the ultimate source or destination of any data. As such, data moving from the downstream channel to the WIPS can encompass data arising from a source server without necessarily being limited to it. We defer to the Specification in this regard because claims must be given their broadest reasonable interpretation consistent with the Specification. *See* 37 C.F.R. § 42.100(b).

We also have reviewed the record evidence regarding the prosecution history. We do not agree with Petitioner's contention (Pet. Reply 2–3 (citing Ex. 1002, 356–57)) that the Applicants expressly defined "downstream data" during prosecution as "data that is transmitted over a wireless communications channel." Such a construction of "downstream data" would

be entirely redundant of other words in the claim limitation "receiving downstream data transmitted over a first wireless communications channel." Nonetheless, this part of the prosecution history is further evidence that "downstream data" is not necessarily tied to a source server. It also evidences the tie between "downstream data" and an associated communication channel.

Although Patent Owner and Dr. Mangione-Smith put forth certain extrinsic evidence purportedly showing that "downstream" must be tied to a source server (*see* PO Resp. 22–24; Ex. 2022 ¶¶ 45–52), this evidence does not override the tie in the Specification of the '511 patent between "downstream data" and the downstream channel. Indeed, certain of the extrinsic evidence supports the notion of directionality, such as data coming from the downstream channel toward the WIPS. *See, e.g.*, Ex. 2007, 3 ("[T]he direction of transmission flow from the source toward the sink (destination/user).").

Finally, we consider whether we can give proper meaning to the term "downstream" without referring to a source server. In light of the embodiments in the Specification, data can reflect "downstream" directionality with reference to both the downstream channel from which it flows and the WIPS to which it flows. Thus, we do not agree with Patent Owner (PO Resp. 20–21) that our construction must refer to a source server to give meaning to the word "downstream." And, contrary to Patent Owner's argument (*id.*), a construction referring to the downstream channel

from which downstream data flows would not be merely redundant of the "receiving" aspect of claims 1 and 58.[5]

Accordingly, we decline to adopt Patent Owner's proposed construction, because we determine that the patentees of '511 patent did not "demonstrate[] a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction" regarding a "source server." *See Innova/Pure Water, Inc., v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) (internal quotations omitted). The Specification ties "downstream data" to the downstream channel from which it flows, so we construe "downstream data" in claims 1 and 58 with reference to the downstream channel from which it is received, which is the "first wireless communications channel" in the parlance of claims 1 and 58. "Downstream data" also is tied to place where it flows, which is the wireless intelligent personal network server. Accordingly, under our broadest reasonable interpretation standard, we interpret "downstream data" to mean "data moving from a downstream channel to the wireless intelligent personal network server."

As a point of further clarification, we address Patent Owner's contention that "downstream data" must flow toward the display device. *See*

[5] To the extent Patent Owner might argue that construing "downstream data" with reference to the downstream channel conflicts with the claim interpretation preference for giving meaning to all terms, *SimpleAir* counsels that this is not an inflexible rule. *See SimpleAir*, 820 F.3d at 429. In this case, we judge fidelity to the broad disclosure in the Specification to be a more important consideration. Specifically, in contrast to its description of "downstream data" flowing from the downstream channel, the Specification does not expressly tie "downstream data" to a source server.

PO Resp. 16–17. We determine that the Specification does not support such an interpretation. Importantly, communications between the WIPS and the display device are not necessarily made via the upstream or downstream wireless channels. Instead, such communications are described as follows:

> Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may occur in various ways. For example, WIPS 30 may be electrically connected to wireless telephone 24 and/or display device 32. Such electrical connection may be direct, i.e., so that electrical contacts on WIPS 30 directly contact electrical contacts on wireless telephone 24 and/or display device 32. Alternatively, the electrical connection may be through electrical cables, which may be provided with standard connectors, such as USB connectors. Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may also be wireless. For example, WIPS 30 and either wireless telephone 24 or display device 32 may be provided with infrared ports, such as IrDA ports. Alternatively, WIPS 30 and either wireless telephone 24 or display device 32 may use short-range RF communication, such as the Bluetooth protocol, to transfer data. Other methods for data transfer may also be used. For example, WIPS 30 may be provided with a flash memory card, in which case data transfer to display device 32 may be effected by removing the flash memory card from WIPS 30 and connecting it to display device 32.

Ex. 1001, 5:8–28. Therefore, even where there is a wireless connection between the WIPS and the display device, the wireless connection is not associated expressly with the downstream and upstream channels that are described elsewhere in the Specification. Thus, our interpretation of "downstream data" neither requires the display device to be in a downstream relationship with the WIPS, nor requires the display device and the WIPS to communicate over the downstream channel (also known as the "first wireless communications channel").

4. Remaining Terms

Although the parties proffer other terms for construction (*see* 616 Pet. 9–10, 12; 622 Pet. 13–15; PO Resp. 35–36; Pet. Reply 11–12), none of these terms requires explicit construction to resolve issues in this case. *See Vivid Techs.*, 200 F.3d at 803.

II. ANALYSIS

A. Obviousness Ground Based on Kimura (616 IPR)

Petitioner contends claims 1–10 and 58–65 would have been obvious over Kimura. 616 Pet. 13–59; Pet. Reply 22–33. Patent Owner disputes Petitioner's contention. PO Resp. 51–68.

1. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103(a)[6] 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

[6] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. §§ 102 and 103. Because the challenged claims of the '511 patent have an effective filing date before the effective date of the applicable AIA amendments, throughout this Final Written Decision we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *Paulsen*, 30 F.3d at 1480 (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). A patent claim "can be obvious in light of a single reference if it would have been obvious to modify that reference in a way that results in the patented invention." *Kroy IP Holdings, LLC v. Safeway, Inc.*, 107 F. Supp. 3d 656, 672 (E.D. Tex. 2015) (Bryson, J., sitting by designation), *aff'd*, 639 F. App'x 637 (Fed. Cir. 2016).

We analyze Petitioner's obviousness grounds with the principles identified above in mind.

2. Level of Skill in the Art

In determining the level of skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). In addition, the prior art of record in this proceeding—namely, Kimura, Goggin, Bodnar, Jornada, DeLorme, Ogasawara, CapShare, and Proxim—is indicative of the level of skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *GPAC*, 57 F.3d at 1579; *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

Petitioner contends a person of ordinary skill in the art "would have a minimum of a bachelor's degree in computer engineering or computer science and either a master's degree in computer engineering or computer science or two or more years of experience with computer networks and/or computer file systems, or the equivalent." 622 Pet. 15; *see also* 616 Pet. 10–11 n.5. This contention is supported by testimony from Dr. Zadok (Ex. 1004 ¶¶ 22–23) and Dr. Polish (Ex. 1058 ¶ 3). Patent Owner cites Dr. Mangione-Smith's testimony and states that its position regarding the level of ordinary skill in the art "does not differ materially from Petitioner['s]." PO Resp. 23 (citing Ex. 2022 ¶ 23). Dr. Mangione-Smith testifies that an ordinarily skilled artisan "should have an undergraduate degree in Electrical Engineering, Computer Engineering, or a comparable field of study. Such a person should also have at least two years of professional experience in the areas of portable computing and wireless telecommunications." Ex. 2022 ¶ 23.

We agree with Patent Owner that the differences in the parties' positions on the level of ordinarily skill in the art do not materially affect our unpatentability analysis. We prefer Dr. Mangione-Smith's proposed qualifications of an ordinarily skilled artisan at the time of the '511 patent because they include the field of electrical engineering, which would have been relevant to the '511 patent. We also determine that experience in "portable computing and wireless telecommunications" would have been relevant for implementing the teachings of the '511 patent. *See, e.g.*, Ex. 1001, claim 1 ("wireless intelligent personal network server"). Accordingly, we adopt as our own Dr. Mangione-Smith's statement of the level of ordinarily skill in the art. *See* Ex. 2022 ¶ 23.

3. Kimura

Kimura is a patent directed to "a portable file system in which files stored in a portable personal data device are accessible from a data processing device for executing a desired processing on data of the files." Ex. 1035, 1:7–10. Figure 2 of Kimura is reproduced below.

FIG. 2

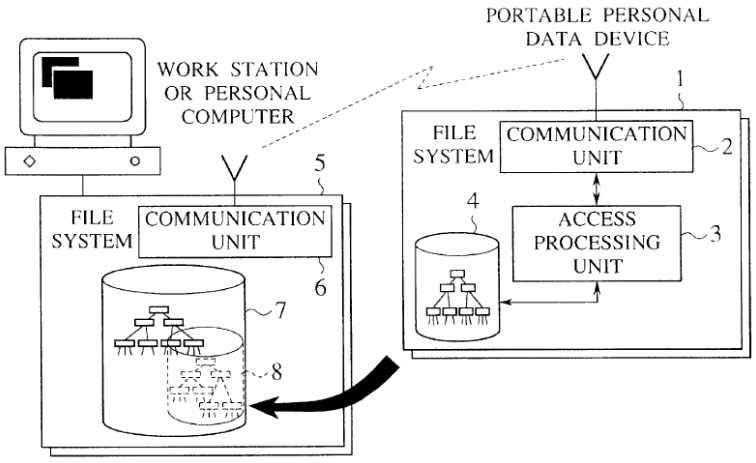

Figure 2 depicts portable personal data device (PPDD) 1 having communication unit 2, access processing unit 3, and file system 4. *Id.* at 6:58–60. Stationary computer 5, which may be a work station or a personal computer, includes communication unit 6 and file system 7. *Id.* at 6:60–62. PPDD 1 and stationary computer 5 use communication units 2 and 6, respectively, for communicating with one another by radio or by online communication mode. *Id.* at 7:6–10. PPDD 1 and stationary computer 5 also have a mechanism for making file system 4 operate as if it were a part 8 of file system 7. *Id.* at 7:10–13.

Figure 3 of Kimura is reproduced below.

FIG. 3

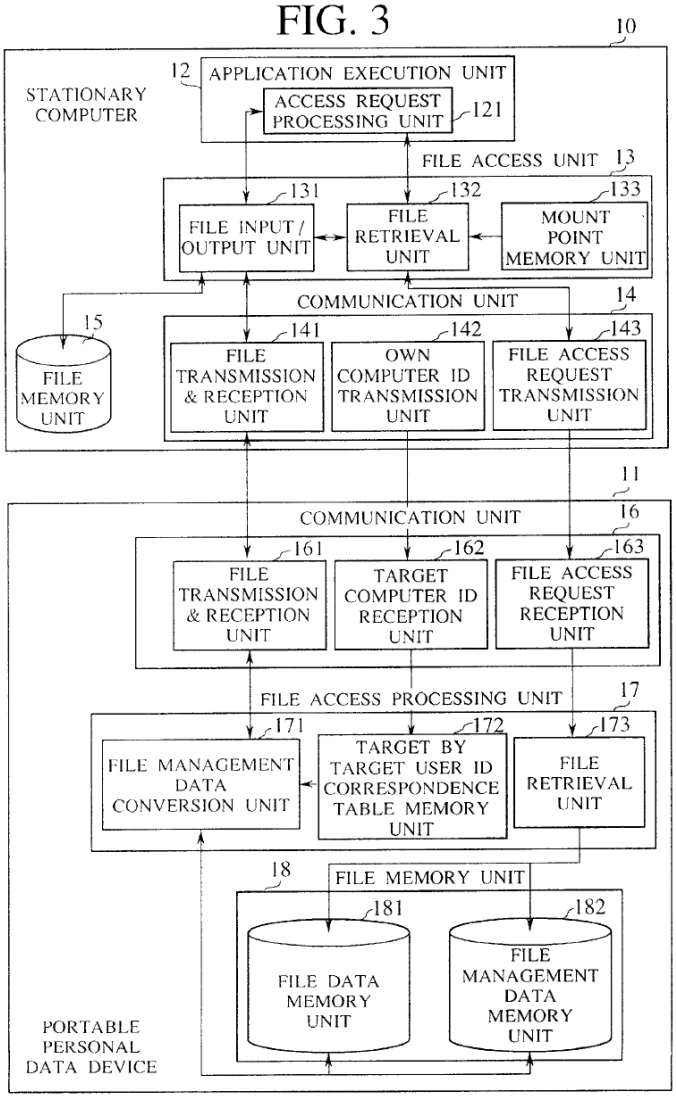

Figure 3 depicts an embodiment of Kimura with PPDD 11 having communication unit 16, file access processing unit 17, and file memory unit 18. *Id.* at 7:55–57. Stationary computer 10 includes application execution unit 12, file access unit 13, communication unit 14, and file memory unit 15. *Id.* at 7:53–55. Communication unit 14 communicates with communication unit 16 such that PPDD 11 handles access requests from stationary computer 10 for files stored in file memory unit 18. *Id.* at 8:31–36, 15:60–67.

We agree with Petitioner (616 Pet. 9) that Kimura qualifies as prior art under 35 U.S.C. § 102(b) because Kimura's issue date of January 26, 1999, is more than one year before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1035, at [45].

4. Claims 1 and 58

a. Comparison of Kimura to Claims 1 and 58 and Obviousness Rationale

Petitioner argues that an ordinarily skilled artisan would have understood Kimura to render obvious the devices recited in claims 1 and 58. 616 Pet. 13–40. Petitioner maps Kimura's PPDD to the recited personal network server of claims 1 and 58. *Id.* at 14–18 (citing Ex. 1035, 6:56-7:35, 15:60–67, Figs. 2, 3). For the recited "radio frequency (RF) receiver" and "transceiver," Petitioner cites Kimura's teachings on various iterations of the communication unit in the PPDD, which can include file transmission and reception unit 161. *Id.* at 19 (citing Ex. 1035, Figs. 2, 3). Petitioner cites Kimura's file transmission and reception unit in the stationary computer for transmitting data to the PPDD as part of a write operation; Petitioner contends the PPDD's reception of this data teaches "receiving downstream data transmitted over a first wireless communications channel." *Id.* at 20–21 (citing Ex. 1035, 8:45–50, 15:54–59). Petitioner contends the transmission is made wirelessly based on Kimura's description of "radio" communication and Kimura's use of a dotted line denoting a "wireless transmission path/link" in Figure 2. *Id.* at 21 (citing Ex. 1035, 7:6–9, Fig. 2; Ex. 1058 ¶ 42).

Petitioner maps Kimura's file memory unit 18 to the recited "memory." *Id.* at 22–23 (citing Ex. 1035, 6:56–7:1, 10:35–49, Fig. 3). Regarding the recited central processing unit (CPU), Petitioner contends an ordinarily skilled artisan "would have known that Kimura's PPDD necessarily . . . , and at the minimum obviously, includes a CPU to perform the operations of the PPDD, including, for example, to perform the operations of the file transmission and reception unit 161 and file memory unit 18." *Id.* at 23 (citing Ex. 1058 ¶ 48).

Petitioner further maps Kimura's file access request reception unit (FARRU) 163 in the PPDD to the recited "first interface" of claims 1 and 58. *Id.* at 28–31 (citing Ex. 1035, Fig. 3). According to Petitioner, FARRU 163 interfaces with stationary computer 12, which Petitioner maps to the "external display device" of claims 1 and 58. *Id.* at 31–32 (citing Ex. 1058 ¶¶ 63–64). Petitioner contends "an 'application' (*i.e.*, a computer software process) on Kimura's stationary computer (the claimed 'external display device') . . . accesses, picks, and opens files on Kimura's PPDD." *Id.* at 32 (citing Ex. 1058 ¶ 64). Petitioner cites Kimura's teachings on "a process executed on the stationary computer 10 mak[ing] an access to a file . . . on the portable personal data device 11" by issuing "an access request . . . at the application execution unit 12 on the stationary computer 10." *Id.* (quoting Ex. 1035, 12:36–53) (emphases omitted). Petitioner explains the requested access is accomplished by "mounting . . . the file system of the portable personal data device 11 to the file system of the stationary computer 10," whereupon files on the PPDD "appear to a user of the stationary computer as if they are stored on the stationary computer." *Id.* at 33 (quoting Ex. 1035, 11:57–12:25). Petitioner further notes that Kimura

expressly equates the "access request" with an "open request." *Id.* at 35–36 (citing Ex. 1035, 15:1–49). Thus, as supported by the testimony of Dr. Polish, Petitioner contends the stationary computer can pick and open files from the PPDD after the drive is mounted. *Id.* at 32–38 (citing Ex. 1058 ¶¶ 65–75).

Patent Owner contends Petitioner has not established that Kimura discloses "receiving downstream data." PO Resp. 55. Patent Owner argues Kimura teaches storing user files "directly onto the PPDD," so Kimura "discloses a system *expressly designed* to avoid the need for transfer from an upstream source server to a downstream receiving device." *Id.* (citing Ex. 1035, 7:10–13; Ex. 2022 ¶ 145). According to Patent Owner, the transfer of data from the stationary computer to the PPDD is not downstream "because it does not flow from a server toward the user." *Id.* at 55–56. Patent Owner explains "[t]here is no flow from the upstream server or enterprise IT system to the PPDD; [rather,] users save their data directly, in real-time, on the PPDD while the device is mounted on the stationary computer." *Id.* at 56 (citing Ex. 2022 ¶ 148).

Nevertheless, as stated above, we do not interpret "downstream data" to require that such data must arise from an unclaimed source server or must flow necessarily toward the user. *See supra* § I.F.3. Rather, Petitioner establishes that Kimura's PPDD and stationary computer communicate wirelessly via communications units 2 and 6, which correspond to a downstream channel, i.e., the "first wireless communications channel." *See* 616 Pet. 20 (citing Ex. 1035, 7:6–10). Petitioner further establishes that Kimura's file transmission and reception unit 141 in the stationary computer transmits data via the downstream channel for reception in the PPDD, where

it is written in file memory unit 18. *See id.* (citing Ex. 1035, 8:45–50). These teachings are commensurate with our construction of "downstream data" because the received data moves from a downstream channel (i.e., the channel between communications units 2 and 6) to the wireless intelligent personal network server (i.e., the PPDD). *See supra* § I.F.3.

Patent Owner additionally argues that Petitioner's mapping of "receiving downstream data" establishes the downstream direction from the stationary computer to Kimura's PPDD. PO Resp. 57 (citing 616 Pet. 19). According to Patent Owner, Petitioner's "pick and open" analysis—where a stationary computer accesses data on the PPDD—inconsistently and illogically establishes an upstream direction from the PPDD to the stationary computer. *Id.* at 57–58. We agree with Petitioner, however, that "the Claims do not specify whether data is flowing 'upstream' or 'downstream' when the 'external display device' accesses the 'electronic file' stored on the 'personal network server.'" Pet. Reply 26. Petitioner's position is consistent with the Specification of the '511 patent, which does not describe communications between the WIPS and the display device using the terms "upstream" and "downstream." *See supra* § I.F.3; Ex. 1001, 5:8–28. In addition, Petitioner is correct that Patent Owner concedes a PPDD can connect to different stationary computers at different times (*see* PO Resp. 53), which undermines Patent Owner's attempt to strictly impose downstream and upstream conventions on a PPDD in conjunction with a single stationary computer. *See* Pet. Reply 26 (citing 616 Pet. 13–14, 43–44, 52–56; Ex. 1058 ¶¶ 29, 83, 97, 100, 101, 103).

Patent Owner further argues that Kimura's PPDD is not a "network server." PO Resp. 59. The crux of Patent Owner's argument is that the

PPDD shares files over "a direct point-to-point communications link between the stationary computer and the PPDD" rather than through a network. *Id.* (citing Ex. 2022 ¶ 153). Nonetheless, as stated above, we decline to adopt Patent Owner's proposed exclusion of computers connected by a point-to-point connection from the scope of a "network server" in claims 1 and 58. *See supra* § I.F.2. Accordingly, we determine that Kimura's PPDD acts as a network server because it "shares data and/or files with at least one other connected computer, namely Kimura's stationary computer." 616 Pet. 14–15 (citing Ex. 1035, 6:56–7:35).

Patent Owner also argues Kimura teaches away from the wireless intelligent personal network server of claims 1 and 58 because Kimura discloses "a portable device that can only be connected while in the local vicinity of the stationary computer to which it is attached." PO Resp. 64. Patent Owner argues this device limitation "negates one of the primary benefits of Rosetta's invention: providing the user with access to updated data files even when outside the enterprise IT network, and even when the wireless connection is poor." *Id.*

In reply, Petitioner argues that Patent Owner's arguments do not establish that Kimura criticizes, discredits, or otherwise discourages investigation into the invention in the challenged claims. Pet. Reply 31 (citing *Meiresonne v. Google, Inc.*, No. 2016-1755, 2017 U.S. App. LEXIS 3978, at *6 (Fed. Cir. Mar. 7, 2017)). We agree with Petitioner. First, Petitioner is correct that "providing the user with access to updated data files even when outside the enterprise IT network, and even when the wireless connection is poor" is not claimed, so Kimura's alleged failure to teach this feature is not a proper basis for establishing "teaching away." *See id.*

Second, even if this were a requirement of the claims, Petitioner is correct that Kimura addresses the problem of remote access by a user to files even when the user is disconnected from the source server. *See id.* Specifically, Kimura contemplates that a user could "look up or update" personal data on a PPDD "when the user has no stationary computer such as a work station or a personal computer readily available to him during a travelling or at a visiting spot." Ex. 1035, 7:36–42. Thus, we do not agree with Patent Owner that Kimura teaches away from the claimed invention.

For these reasons, and in light of Petitioner's obviousness rationale, Petitioner establishes that Kimura teaches or suggests every limitation in claims 1 and 58, and explains why one of ordinary skill in the art would have had a reason to modify Kimura in a way that results in the invention as recited in claims 1 and 58.

b. Secondary Considerations of Nonobviousness

We now consider Patent Owner's proffered evidence regarding secondary considerations of nonobviousness for the invention of the '511 patent. Patent Owner bears a production burden to show a genuine issue of fact regarding the existence of a secondary consideration and its nexus to the claimed invention. *See Prometheus Labs., Inc. v. Roxane Labs., Inc.*, 805 F.3d 1092, 1101–02 (Fed. Cir. 2015). For secondary considerations to have probative value, there must be a nexus between the merits of the claimed invention and the secondary considerations. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 306 n.42 (Fed. Cir. 1985).

First, Patent Owner contends the invention "satisfied a critical need for remote data access." PO Resp. 66 (citing Ex. 2022 ¶¶ 177–178). Patent Owner cites Dr. Mangione-Smith's testimony that extremely limited bandwidth on cellular networks caused frustrating delays in the receipt of emails on mobile devices. Ex. 2022 ¶ 177. Dr. Mangione-Smith further testifies that this problem existed for ten years until the solution provided by the invention of the '511 patent. *Id.* ¶ 178. In reply, Petitioner argues that "remote data access" is not covered by the claims. Pet. Reply 32. Petitioner also argues that Patent Owner was required to, but did not, provide evidence that others had tried and failed to solve the alleged problem. *Id.* (citing *Amazon.com v. Personalized Media Commc'ns*, Case IPR2014-01534, slip op. at 44–45 (PTAB Mar. 22, 2016) (Paper 55)).

Although we do not agree with Petitioner that Patent Owner must show failure of others for this factor to have probative value, we find that Patent Owner's evidence of long-felt but unmet need lacks a nexus to the merits of the claimed invention. Patent Owner's evidence is tied generically to the problem of "remote data access," rather than any particular aspect of the invention appearing in the claims. Furthermore, even if we were to credit a nexus to the merits of the claimed invention, we find Dr. Mangione-Smith's testimony regarding the long-standing need to be anecdotal and lacking in support (such as citations to contemporaneous references) as to the alleged ten-year need that was allegedly unmet. It is hard to fathom that recognizable improvements in the area of "remote data access" were stymied over ten years in an industry that Dr. Mangione-Smith characterizes as "the fast-moving marketplace of cellular devices, PDAs and computers."

Ex. 2022 ¶ 179. As such, we accord Patent Owner's evidence of long-felt need little or no weight.

Second, Patent Owner contends its "invention took a different approach from the teachings and general consensus of the industry at the time." PO Resp. 66. Specifically, Patent Owner contends the invention diverged from the purported consensus solution to "remote data access problems" of "better infrastructure and software." *Id.* Patent Owner cites an April 2000 article as proof that improved data rates were contemplated at that time. *Id.* at 66–67 (citing Ex. 2006, 2, 6). Patent Owner further cites testimony from Edward F. Bachner III, the co-founder, Chief Executive Officer, and President of Rosetta-Wireless Corporation, and a named inventor on the '511 patent, for the proposition that "Rosetta's approach was initially shunned as an unworkable solution." *Id.* at 67 (citing Ex. 2017 ¶ 22).

Patent Owner's unexpected results analysis hinges on the alleged shunning of its solution as being unworkable. *See id.* at 67. The only evidence of such shunning is Mr. Bachner's testimony, which, as Petitioner points out (Pet. Reply 33), is conclusory and unsupported by other evidence. As such, we find the record does not establish that ordinarily skilled artisans would have considered unexpected the results from the claimed invention. And again, Patent Owner's evidence is not tied to particular aspects of the claimed invention in a way that establishes the required nexus. *See id.* at 32 (noting "the Claims do not require 'remote data access'"), 33 (noting "the purported solution of 'mobile access to source server files regardless of location or connectivity' has no nexus to the Claims"). Thus, we also accord

Patent Owner's evidence of shunning and unexpected results little or no weight.

Third, Patent Owner proffers evidence of "substantial praise." PO Resp. 67. Specifically, Patent Owner cites an article from *Chicago Business Journal* as purportedly praising the invention of the '511 patent (PO Resp. 68 (citing Ex. 2012, 1; Ex. 2017 ¶ 25)), but the article includes an equal measure of skepticism about WIPS technology, as we noted previously. *See* Ex. 2012, 2 ("It's unclear what the problems are that [Patent Owner is] really solving . . . . [WIPS] may be another layer that encumbers rather than helps."). Patent Owner also contends it was awarded "a highly selective $2 million grant from NIST to develop working prototypes of its WIPS technology." *Id.* (citing Exs. 2010, 2011; Ex. 2017 ¶¶ 23–24). Patent Owner additionally cites emails from David D. Naim and Sergio Fogel allegedly praising the invention. *See* PO Resp. 67–68 (citing Ex. 2003; Ex. 2013, 1; Ex. 2017 ¶¶ 24, 26). Yet we agree with Petitioner (Pet. Reply 33) that Patent Owner fails to establish a nexus between any of this evidence and the merits of the claimed invention. Thus, we accord Patent Owner's evidence of praise little weight.

c. Conclusion Regarding Claims 1 and 58

In light of the entire trial record, we determine, by a preponderance of the evidence, that the subject matter of claims 1 and 58 would have been obvious over Kimura under 35 U.S.C. § 103(a).

6. Claims 2 and 59

Claim 2 depends from claim 1 and further recites "said downstream data reflects changes made to at leas[t] one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory." Ex. 1001, 13:46–49. Claim 59 depends from claim 58 and includes the same limitation. *Id.* at 18:14–17.

Petitioner cites Kimura's teachings on producing "a back-up for the file system of the portable personal data device in the stationary computer side" when the file system of the PPDD is mounted to the file system of the stationary computer. 616 Pet. 41 (citing Ex. 1035, 16:39–43, 17:33–37). According to Petitioner, this is accomplished by transferring data from the PPDD to the stationary computer. *Id.* (citing Ex. 1035, 17:33–37). In particular, Petitioner cites Kimura's teachings on a scenario where "'files . . . [of the PPDD] are updated [on the PPDD] after the back-up is completed,' in which case upon the next back-up procedure 'the back-up data in the stationary computer [] side are also updated accordingly.'" 616 Pet. 41 (quoting Ex. 1035, 18:12–23 and citing Ex. 1058 ¶ 79) (alterations by Petitioner).

Petitioner acknowledges "Kimura does not disclose that the downstream data received *by* the PPDD *from* the stationary computer" reflects file changes on the stationary computer, but nonetheless contends this would have been obvious based on Kimura's teachings on this functionality in the reverse direction. *Id.* at 42 (citing Ex. 1058 ¶ 81). In support of this contention, Petitioner cites Dr. Polish's testimony that file synchronization was well-known, that there would be no technical barriers to such synchronization, and that it would have been useful to update a PPDD

based on changes made to files on a stationary computer. *Id.* at 40–44 (citing Ex. 1058 ¶¶ 80–83). Dr. Polish contends an ordinarily skilled artisan would have been motivated to modify Kimura by, for example, the desire "to keep Kimura's PPDD synchronized with one particular source stationary computer (such as a work computer)" so that a user would "have updated work files on her PPDD for when she wants to access those files using . . . a different stationary computer at a later time (such as her home computer)." Ex. 1058 ¶ 83

Petitioner shows persuasively that file synchronization was well-known and that Kimura teaches transfer of data for synchronization in the upstream direction. 616 Pet. 40–42. In addition, Dr. Polish's testimony supports the notion that sending updates made to a file on the stationary computer to the PPDD in downstream data would have been obvious based on the disclosure of Kimura. Ex. 1058 ¶¶ 80–83.

We now consider Patent Owner's arguments. Patent Owner notes the difference between the "electronic file" first recited in claims 1 and 58 and the "source electronic file" recited in claims 2 and 59. PO Resp. 62. Based on its contention that a "source electronic file" is "a file stored on an upstream source server," Patent Owner contends that, in Petitioner's analysis, "there is no distinction drawn between the two files—the source file and the copy of the source file are both the file stored on the PPDD." *Id.* (citing Ex. 2022 ¶ 164). Patent Owner also argues that Petitioner argues inconsistently that "'downstream data' originates from the stationary computer of Kimura" and that "'source electronic files' are stored on the PPDD rather than the stationary computer." *Id.* at 64 (citing 616 Pet. 22, 41).

To the extent Patent Owner's arguments are based on its proposed construction for "downstream data," we reject them for the same reasons mentioned above. *See supra* § I.F.3. In addition, we are persuaded by Petitioner's showing that "the source file resides in the stationary computer memory, and the downloaded file is a copy of the source file written to the PPDD." Pet. Reply 30 (citing 616 Pet. 40–44). Furthermore, contrary to Patent Owner's argument, we are persuaded that an ordinarily skilled artisan would have found it obvious to modify Kimura's teachings on synchronization such that "the downstream data received by the PPDD from the stationary computer could serve to update the version of a file already stored on the PPDD, where the received downstream data reflects changes made to a source file on that particular stationary computer." 616 Pet. 42–43 (citing Ex. 1058 ¶¶ 81–82).

Patent Owner does not make any other separate arguments directed to claims 2 and 59. Considering Petitioner's analysis of the additional limitations from claims 2 and 59 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 2 and 59, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 2 and 59 would have been obvious over Kimura under 35 U.S.C. § 103(a).

7. Claims 3 and 60

Claims 3 and 60 both recite "said at least one electronic file is a new electronic file." Ex. 1001, 13:51–52, 18:19–20. Petitioner cites Kimura's teaching on receiving data at the PPDD from the stationary computer and

then storing the data in memory as a file. 616 Pet. 44–45 (citing Ex. 1035, 8:45–50). Petitioner cites Dr. Polish's testimony as supporting that it would have been obvious to create a new file in the PPDD as part of this storage operation. *Id.* at 45 (citing Ex. 1058 ¶ 85). Petitioner additionally references a passage in Kimura regarding "creation . . . of files." *Id.* (quoting Ex. 1035, 10:35–37).

Patent Owner does not present separate arguments directed to claims 3 and 60. Considering Petitioner's analysis of the additional limitations from claims 3 and 60 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 3 and 60, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 3 and 60 would have been obvious over Kimura under 35 U.S.C. § 103(a).

8. Claims 4 and 61

Claim 4 recites "said first interface allows said external display device read-only access to said at least one electronic file." Ex. 1001, 13:54–56. Claim 61 recites a similar limitation, but without the "read-only" limitation. *Id.* at 18:22–23. Regarding access to the electronic file, Petitioner references its obviousness analysis from claim 1. 616 Pet. 45–46. For the "read-only" limitation, Petitioner cites Kimura's teachings on read-only access to backed-up files on the stationary computer. *Id.* at 46 (citing Ex. 1035, 16:59–17:5, Fig. 12). Petitioner relies on the testimony of Dr. Polish to support its contention that these teachings on read-only access equally could

be applied to restrict access to files of Kimura's PPDD by the stationary computer. *Id.* at 46–47 (citing Ex. 1058 ¶ 88).

Regarding the "read-only access" aspect of claim 4, Kimura teaches read-only access to the files of the stationary computer. Ex. 1035, 16:59–17:5, Fig. 12. We are persuaded by Dr. Polish's testimony that applying this "known technique" to files on Kimura's PPDD would have been obvious based on the disclosure of Kimura, and that a person of ordinary skill in the art would have had reason to do so to "limit access to certain files on the PPDD such that those files could not be edited or deleted by a user of a linked stationary computer." Ex. 1058 ¶ 88. This rationale, in conjunction with Petitioner's analysis for claim 1's "pick and open" language above, is likewise applicable to claim 61, which merely recites "access."

Patent Owner does not make separate arguments for claims 4 and 61. Considering Petitioner's analysis of the additional limitations from claims 4 and 61 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 4 and 61, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 4 and 61 would have been obvious over Kimura under 35 U.S.C. § 103(a).

9. Claims 5 and 62

Claims 5 and 62 both recite "said first interface allows said external display device to change said at least one electronic file." Ex. 1001, 13:58–59, 18:25–26. Petitioner cites Kimura's teachings on write operations and their resulting changes to stored files on the PPDD. 616 Pet. 48–49 (citing

Ex. 1058 ¶¶ 91–92; Ex. 1035, 8:45–50, 15:36–59). We are persuaded that Kimura's cited write operations change files of the PPDD.

Patent Owner does not make separate arguments for claims 5 and 62. Considering Petitioner's analysis of the additional limitations from claims 5 and 62 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 5 and 62, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 5 and 62 would have been obvious over Kimura under 35 U.S.C. § 103(a).

10. Claims 6 and 63

Claim 6 and 63 both recite "said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA)." Ex. 1001, 13:61–64, 18:28–31. As mentioned above, Petitioner maps Kimura's stationary computer to the recited "external display device," *see* 616 Pet. 31, and Kimura additionally teaches the stationary computer can be a personal computer. *Id.* at 49–50 (citing Ex. 1035, 6:54–62, Fig. 2).

Patent Owner does not make separate arguments for claims 6 and 63. Considering Petitioner's analysis of the additional limitations from claims 6 and 63 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 6 and 63, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject

matter of claims 6 and 63 would have been obvious over Kimura under 35 U.S.C. § 103(a).

11. Claims 8 and 9

Claim 8 depends from claim 1 and further recites "said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time." Ex. 1001, 13:46–49. Petitioner cites Kimura's teachings on connecting the PPDD "with various different types of stationary computers." 616 Pet. 54 (quoting Ex. 1035, 20:1–3) (emphasis omitted). Petitioner also cites Kimura's teaching that users "can utilize any stationary computer 5 by simply placing the portable personal data device 1 carried along with him in a vicinity of this stationary computer 5, even if this stationary computer 5 is not his home machine that he usually uses." *Id.* (quoting Ex. 1035, 7:27–31) (emphases omitted). Patent Owner does not make separate arguments for claim 8.

We are persuaded that Kimura's cited teachings suggest using different stationary computers to access the PPDD at different times. *See* Ex. 1035, 7:27–31. Petitioner's arguments are supported by testimony from Dr. Polish, who states that an ordinarily skilled artisan would have been motivated "to advance Kimura's goal of permitting a user to travel with her PPDD and connect it to a variety of different types of stationary computers at different times." 616 Pet. 55 (quoting Ex. 1058 ¶ 101).

Claim 9 depends from claim 8 and further recites "first and second external display devices are different kinds of display device." Ex. 1001, 18:14–17. Building on its obviousness analysis for claim 8, Petitioner again

cites Kimura's teaching that the PPDD "can be connected with various different types [i.e., 'kinds'] of stationary computers." 616 Pet. 55 (quoting Ex. 1035, 20:1–3) (emphasis omitted; bracketed text added by Petitioner). In light of this teaching, and supported by testimony from Dr. Polish, Petitioner contends an ordinarily skilled artisan would have been motivated "to use two different kinds of display device in such a way, such as a desktop computer and laptop computer, or two different kinds of desktop computers, especially when traveling with the PPDD to different locations having different kinds of stationary computers." *Id.* at 55–56 (citing Ex. 1058 ¶ 103). We are persuaded by this rationale, which is rooted in a teaching from Kimura. *See* Ex. 1035, 20:1–3.

Patent Owner does not make separate arguments for claims 8 and 9. Considering Petitioner's analysis of the additional limitations from claims 8 and 9 in combination with its analysis for claim 1, we determine Petitioner has shown that Kimura teaches all the limitations in claims 8 and 9, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 8 and 9 would have been obvious over Kimura under 35 U.S.C. § 103(a).

12. Claims 10 and 65

Claim 10 depends from claim 1 and further recites "a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel." Ex. 1001, 14:11–13. Claim 65 depends from claim 58 and further recites "said RF transceiver transmits at least one signal over a second wireless communications channel." Ex. 1001, 18:36–37.

Regarding the "radio frequency (RF) transmitter" of claim 10, Petitioner cites its analysis from claim 1, which relies on file transmission and reception unit 161 in the PPDD. 616 Pet. 19 (citing Ex. 1035, Figs. 2, 3), 56. Petitioner also cites its similar analysis from claim 58 relative to the "RF transceiver" limitation in claim 65. *Id.* at 59. Regarding the "second wireless communication channel" in claims 10 and 65, Petitioner notes that the Specification of the '511 patent "discloses separate 'upstream' and 'downstream' channels between the same two items in its system." *Id.* at 57 (citing Ex. 1001, 4:30–33). As such, Petitioner relies on Kimura's teachings on executing a read request as teaching the second channel. *Id.* at 35–37, 56–59. Specifically, Petitioner quotes Kimura as teaching "data of the requested file are read out from a specified position in the file data memory unit 181 [of the PPDD] . . . , and the obtained file content is returned to the application execution unit 12 of the stationary computer 10." *Id.* at 36 (quoting Ex. 1035, 15:43–50) (emphasis omitted; bracketed text added by Petitioner).

Petitioner establishes that the transmission channel handling data flow from the PPDD to the stationary computer may be regarded as the "second wireless communication channel." *See id.* at 56–58. We also are persuaded that Kimura's read operation, which results in data being transferred from the PPDD to the stationary computer, teaches the recited "transmitting at least one signal" using that second channel. *See id.* at 35–37 (citing, *inter alia*, Ex. 1035, 15:1–49). We are further persuaded that Kimura's file transmission and reception unit 161 teaches the RF transmitter recited in claim 10 and the RF transceiver recited in claim 65. *See* Ex. 1035, Figs. 2, 3.

Patent Owner does not make separate arguments for claims 10 and 65. Considering Petitioner's analysis of the additional limitations from claims 10 and 65 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Kimura teaches all the limitations in claims 10 and 65, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 10 and 65 would have been obvious over Kimura under 35 U.S.C. § 103(a).

B. Obviousness Ground Based on Goggin (622 IPR)

Petitioner contends claims 1–10, 19, 58–65, and 68 would have been obvious over Goggin. 622 Pet. 17–39. Patent Owner disputes Petitioner's contention. PO Resp. 38–51, 65–68.

1. Goggin

Goggin is a book for software developers regarding Windows CE, which is a "stripped-down version" of the Windows 98/NT operating systems "engineered specifically for small, low-resource, portable devices." Ex. 1030, 21–22, 30–31.[7] Window CE devices include handheld personal computers (HPC) with a memory, a processor, a display, and wireless networking capability. *Id.* at 32, 34–35, 51–55, 62–63, 177.

Goggin describes Remote Application Programming Interface (RAPI), which is "a special set of functions that allows developers . . . to access any files, databases, or system information on a [Windows] CE

[7] We refer to the 5-digit page numbers applied by Petitioner to Goggin.

device" for importing to desktop software, among other things. *Id.* at 308. RAPI includes file access functions that allow other machines in a system "to create directories, read and write files, and find files matching a certain criteria" on a Windows CE device. *Id.* at 314–15, 328. Examples of these file access functions include "CeWriteFile()" for writing data to an open file and "CeReadFile()" for reading data from an open file. *Id.* at 528–29, 545. RAPI also includes miscellaneous shell and system functions "to retrieve information about the various applications running on the CE device, work with CE shortcuts, and start CE applications remotely." *Id.* at 318–19.

Petitioner contends Goggin "is prior art under at least pre-AIA § 102(b)." 622 Pet. 15. Supported by a declaration from Dr. Ingrid Hsieh-Yee, Petitioner contends Goggin "was published in April 1999, copyrighted in 1999, and stamped in 1999 by the Library of Congress" and that "[i]t would have been available in libraries starting in 1999." *Id.* at 15 n.6 (citing Ex. 1029 ¶¶ 9–20; Ex. 1030, 5–6).[8]

In its 622 Preliminary Response, Patent Owner contended Petitioner had failed to establish that Goggin is a § 102(b) reference, because Petitioner's declaration "shows only that Goggin was publicly available by September 17, 1999, which is after the August 31, 1999 critical date." 622 Prelim. Resp. 5, 28–32. In our 622 Institution Decision, we agreed with Patent Owner that Petitioner had not established publication of Goggin by the one-year critical date, August 31, 1999, so Goggin is not available as prior art under 35 U.S.C. § 102(b). 622 Dec. on Inst. 16. We nonetheless determined that Petitioner proffered a threshold amount of evidence,

[8] Dr. Zadok testifies that Goggin was "published in April 1999, and that it is at least a § 102(a) reference." Ex. 1004 ¶ 56.

including the declaration of Dr. Hsieh-Yee, showing Goggin was available as a printed publication before the filing date of the application that issued as the '511 patent, which was August 31, 2000. *Id.* (citing 622 Pet. 15; Ex. 1029 ¶¶ 12, 17–19; Ex. 1030, 5 (Library of Congress date stamp of December 1, 1999); Ex. 1042 (evidence that Goggin was added to the collection at the Library of Congress on March 22, 2000); Exs. 1045, 1046 (evidence that Goggin was available in the George Mason University Library by September 17, 1999)). Based on this showing, and because Patent Owner acknowledged that Petitioner's evidence "shows . . . that Goggin was publicly available by September 17, 1999" (622 Prelim. Resp. 5), we determined that Goggin is available as prior art under 35 U.S.C. § 102(a). 622 Dec. on Inst. 16–17. During the course of trial, Patent Owner made no attempt to show an invention date for the claims of the '511 patent that is earlier than Goggin. Therefore, we maintain our determination that Goggin qualifies as prior art under § 102(a) for purposes of this Decision.

2. Claims 1 and 58

a. Comparison of Goggin to Claims 1 and 58 and Obviousness Rationale

Petitioner argues that an ordinarily skilled artisan would have understood Goggin to render obvious the devices recited in claims 1 and 58. 622 Pet. 19–32. Petitioner cites Goggin's teachings on portable devices running Windows CE as teaching the recited "wireless intelligent personal network server" of claim 1. *Id.* at 19–20 (citing Ex. 1030, 30–31, 63, 308, 328). For the recited "radio frequency (RF) receiver," Petitioner cites Goggin's teachings on wireless Local Area Network (LAN) cards and Ethernet cards in Windows CE devices. *Id.* at 20–23 (citing Ex. 1030, 63,

177, 389–90, 392). Petitioner contends Goggin teaches "receiving downstream data" via its disclosure of a desktop computer executing the function "CeWriteFile()" and wirelessly transmitting "data pointed to by [the] 'szBuf' parameter in 'CeWriteFile()'" to a Windows CE device, where it is received by an RF receiver/transmitter. *Id.* (citing, *inter alia*, Ex. 1004 ¶ 85; Ex. 1030, 314–15, 545–46). Petitioner contends Goggin's descriptions of software/firmware functions on Windows CE devices that are invoked by RAPI functions, such as "CeCreateFile()," "CeWriteFile()," and "CeReadFile()," teach the "set of embedded machine instructions." *Id.* at 24–26 (citing Ex. 1030, 309, 314–16, 333, 505–06, 545).

Petitioner maps Goggin's desktop PC that issues RAPI commands to the recited "external display device." *Id.* at 27, 29–30 (citing, *inter alia*, Ex. 1030, 328). Petitioner also contends Goggin's description of RAPI functions teaches the recited "first interface" on Windows CE devices, because RAPI function calls from the desktop computer result in sending the requested information, and the Windows CE device is able to respond with the requested information. *Id.* at 28–29 (citing Ex. 1004 ¶¶ 137, 154). Petitioner further maps Goggin's teachings on RAPI functions for manipulating files to the "pick and open" language of claim 1. *Id.* at 26–28, 30–32 (citing, *inter alia*, Ex. 1030, 314–16, 505–06, 528–29). According to Petitioner, the files created, read from, and/or written to remain resident on the Windows CE device based on Goggin's teachings of an "active handle" for files in the Windows CE device's memory. *Id.* at 26–27 (citing Ex. 1030, 107–08, 505–06), 31 (citing Ex. 1004 ¶¶ 143–50, 158).

With support from Dr. Zadok's testimony, Petitioner contends an ordinarily skilled artisan "would have considered together the various

teachings of Goggin in implementing a system involving Windows CE devices because the entirety of the Goggin book and its various chapters is directed to advantageous ways of using devices running Windows CE." 622 Pet. 22 n.9 (citing Ex. 1004 ¶ 59).

Patent Owner argues "Goggin does not disclose a device that carries out the functionality claimed in the '511 patent." PO Resp. 40. Patent Owner contends Goggin does not have "any instruction on which features to select, and in what combination, to achieve" the functionality of the claimed invention. *Id.* Specifically, Patent Owner argues "the Goggin reference does not disclose a WIPS, or tell a reader how to combine the features of Windows CE to write software that can be used by a Windows CE device to serve as a WIPS." *Id.* at 40–41 (citing Ex. 2022 ¶ 105).

In reply, Petitioner notes that Goggin discloses RAPI functions as tools to allow other machines access to data and files on Windows CE devices. Pet. Reply 12 (citing 622 Pet. 17; Ex. 1030, 328). To implement such access, Petitioner contends an ordinarily skilled artisan would have honed in on nine APIs described in a section entitled "File Access Functions." *Id.* at 12–13 (citing Ex. 1030, 18, 314–15; Ex. 1064 ¶¶ 21–22).

We agree with Petitioner (Pet. Reply 12) that obviousness does not require that an actual application or device be described or built in an asserted reference. Rather, Petitioner need only show "an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418. Quoting Goggin, Petitioner establishes that RAPI functions "help[] extend the [Windows] CE application into the Desktop by giving the other machines in your system access to the data and files on the [Windows] CE device." 622 Pet. 29 (quoting Ex. 1030, 328). The purpose

of such functions "is to make it *easier* for developers to build programs by providing tools to implement the functionality." Pet. Reply 15 (citing Ex. 1004 ¶¶ 86, 113–124; Ex. 1064 ¶¶ 23–24). Indeed, Patent Owner's characterization of Goggin serves as an acknowledgement that an ordinarily skilled artisan would have had a reason to select Goggin's file access functions from among all of the teachings in the reference: "Petitioner[] rel[ies] on a *specific set* of RAPI functions to support [its] obviousness allegations—the file access functions. These functions allow a developer to manage files on a [Windows] CE device, including opening files, writing to files, and reading from files." PO Resp. 39 (citing Ex. 2022 ¶ 101) (emphasis added). Accordingly, we are persuaded that an ordinarily skilled artisan would have pursued Goggin's file access functions because they constitute "a finite number of identified, predictable solutions . . . within his or her technical grasp." *KSR*, 550 U.S. at 402.

Patent Owner contends Petitioner relies exclusively on Goggin's RAPI functions for teaching the recited "network server." PO Resp. 42–44 (citing, *inter alia*, 622 Pet. 20). According to Patent Owner, any Windows CE device carrying out RAPI functions cannot operate as a network server because it must have an exclusive and "direct, point-to-point communications link" with the Windows desktop computer. *Id.* at 44 (citing Ex. 2022 ¶ 115). Patent Owner additionally argues RAPI functions cannot transfer data wirelessly and, as such, "cannot be used to facilitate networked communications." *Id.* at 47–48 (citing Ex. 2022 ¶¶ 127–128). Thus, Patent Owner argues that the Windows CE device cannot serve as the recited "network server." *Id.* at 48.

As discussed above, we do not agree that the broadest reasonable interpretation of the term "network server" excludes point-to-point communications links. *See supra* § I.F.2. Thus, Patent Owner's arguments regarding point-to-point communications do not undermine Petitioner's unpatentability analysis. Furthermore, contrary to Patent Owner's argument, Petitioner cites Goggin's teachings on Windows CE devices and desktop computers communicating wirelessly. *See* 622 Pet. 22 (citing Ex. 1030, 24, 308, 328, 392). Supported by Dr. Zadok's testimony, Petitioner contends an ordinarily skilled artisan "would have understood that it is advantageous to use RAPI wirelessly." *Id.* at 22–23 (citing, *inter alia*, Ex. 1004 ¶¶ 32, 85). In light of Goggin's teachings and Dr. Zadok's testimony, we are persuaded that a Windows CE device can act as a "network server" via a wireless connection.

Patent Owner also argues that Petitioner does not establish that the Windows CE device in Goggin "receiv[es] downstream data." PO Resp. 49. Specifically, Patent Owner contends Petitioner's analysis does not "address[] the transmission of data from a source server," and instead focuses on "the exchange of information with a desktop PC (or, at most, another Windows device) . . . over a direct point-to-point communications link." *Id.* at 50. Patent Owner also disputes Petitioner's citation of data pointed to by the "szbuf" parameter in the "CeWriteFile()" function being wirelessly transmitted to a Windows CE device for teaching "receiving downstream data." *Id.* at 51. In particular, Patent Owner contends CeWriteFile() "is a general function for writing files on a Windows CE device[] and 'szbuf' data is entirely generic" such that they do not disclose "data transferred from a source server in a downstream direction. *Id.* (citng Ex. 2022 ¶ 136).

Patent Owner's arguments are based largely on its proposed constructions of "receiving downstream data" and "network server," which we have addressed them above. *See supra* §§ I.F.2, I.F.3. These arguments do not undermine Petitioner's obviousness analysis. As established by Petitioner, Goggin teaches that the function CeWriteFile() is used to transmit wirelessly data pointed to by the "szBuf" parameter from a desktop computer to a Windows CE device. 622 Pet. 20–23 (citing, *inter alia*, Ex. 1004 ¶ 85; Ex. 1030, 314–15, 545–46). Considering our interpretation of "downstream data" above (*see supra* § I.F.3), we are satisfied that the Windows CE device's receipt of this data teaches "receiving downstream data."

For these reasons, and in light of Petitioner's obviousness rationale, Petitioner establishes that Goggin teaches or suggests every limitation in claims 1 and 58, and explains why one of ordinary skill in the art would have had a reason to modify Goggin in a way that results in the invention as recited in claims 1 and 58.

b. Secondary Considerations of Nonobviousness

We discuss Patent Owner's evidence of secondary considerations above. *See supra* § II.A.4.b.

c. Conclusion Regarding Claims 1 and 58

In light of the entire trial record, we determine, by a preponderance of the evidence, that the subject matter of claims 1 and 58 would have been obvious over Goggin under 35 U.S.C. § 103(a).

5. Claims 2 and 59

With respect to updating an electronic file, Petitioner highlights Goggin's teachings on "the value of having files synchronized in environments with [Windows] CE devices." 622 Pet. 43 (citing Ex. 1030, 328, 373, 383, 388–389). Relying on the testimony of Dr. Zadok, Petitioner contends it would have been obvious to use Goggin's RAPI functions to update files on a Windows CE device based only on changes made on a desktop computer. *Id.* at 43–44 (citing Ex. 1004 ¶ 174). Petitioner further contends that,

> in updating the Windows CE version of the electronic file, [an ordinarily skilled artisan] would have found it advantageous and more efficient to transfer only the subsequent changes made to the desktop version of the file instead of transferring the whole file again because this would be faster, increase battery life on mobile devices, and reduce overall network data usage and associated costs.

Id. at 44 (citing Ex. 1004 ¶ 174). Patent Owner does not present separate arguments directed to claims 2 and 59.

For downstream data reflecting changes to a source electronic file, Petitioner's obviousness showing is based entirely on Dr. Zadok's testimony. Although Goggin suggests file synchronization, Goggin is silent on how synchronization is accomplished. At the institution stage, we found Petitioner's showing to be "at least suggestive of updating a version of a file stored in the memory of the personal network server." 622 Dec. on Inst. 28. Nevertheless, under the preponderance of the evidence standard applicable here, we determine that Dr. Zadok's testimony cannot overcome Goggin's silence on the particular details of how files are updated. Dr. Zadok's

testimony on this point is not grounded in any record evidence.[9] *See* Ex. 1004 ¶ 174. Thus, we conclude Petitioner has not demonstrated, by a preponderance of the evidence, that the subject matter of claims 2 and 59 would have been obvious over Goggin.

6. Claims 3 and 60

For the recited "new electronic file" in claims 3 and 60, Petitioner cites Goggin's teachings on the CeCreateFile() function, which "creates a file for reading or writing." 622 Pet. 32–33 (citing Ex. 1030, 505–06).

Patent Owner does not present separate arguments directed to claims 3 and 60. Considering Petitioner's analysis of the additional limitation from claims 3 and 60 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 3 and 60, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 3 and 60 would have been obvious over Goggin under 35 U.S.C. § 103(a).

7. Claims 4 and 61

Regarding the additional "read-only access" limitation in claim 4, we understand from a review of the Goggin disclosure cited in Petitioner's claim chart that Goggin teaches the creation of read-only files on a Windows CE device by setting various file attributes with RAPI functions.

[9] In contrast, Petitioner's obviousness ground based on Kimura cites Kimura's teachings on incremental updating after a back-up operation. *See* 616 Pet. 41 (quoting Ex. 1035, 18:12–23)

See Pet. 33–34 (citing Ex. 1030, 505–06, 541). In this way, Petitioner contends the Windows CE device has hardware and software that allow a desktop computer (acting as the display device) to access files on the Windows CE device on a read-only basis. *See id.* Petitioner cites the same teaching for claim 61, which is the same as claim 4 without the "read-only" limitation. *Id.* We additionally observe that claim 61's recitation of allowing for access by the external display device is similar in scope to claim 1's "pick and open" language; the RAPI functions cited by Petitioner for this language likewise provide access to specified files. *See id.* at 26–28, 30–32.

Patent Owner does not present separate arguments directed to claims 4 and 61. Considering Goggin's teachings on setting files for read-only access in conjunction with Petitioner's analysis for claims 1 and 58, we are satisfied that an ordinarily skilled artisan would have understood Goggin as teaching the access limitations of claims 4 and 61. As such, we determine Petitioner has shown that Goggin teaches all the limitations in claims 4 and 61, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 3 and 60 would have been obvious over Goggin under 35 U.S.C. § 103(a).

8. Claims 5 and 62

For the limitation in claims 5 and 62 regarding changing the electronic file, Petitioner cites Goggin's teachings on the CeWriteFile() function as allowing changes to be written to a file. 622 Pet. 34 (citing Ex. 1030, 328,

545). We are persuaded that Goggin teaches the desktop computer may use a RAPI write function to change files on a Windows CE device.

Patent Owner does not present separate arguments directed to claims 5 and 62. Considering Petitioner's analysis of the additional limitation from claims 5 and 62 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 5 and 62, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 5 and 62 would have been obvious over Goggin under 35 U.S.C. § 103(a).

9 Claims 6 and 63

For the Markush group limitation in claims 6 and 63, Petitioner maps Goggin's teachings of a desktop computer to the recited "external display device." *See* 622 Pet. 34–35 (citing, *inter alia*, Ex. 1030, 25, 328). Patent Owner does not present separate arguments directed to claims 6 and 63. Considering Petitioner's analysis of the additional limitation from claims 6 and 63 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 6 and 63, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 6 and 63 would have been obvious over Goggin under 35 U.S.C. § 103(a).

10. Claims 7 and 64

Claims 7 and 64 further limit the external display device to a personal digital assistant (PDA). Petitioner cites Goggin's teachings on RAPI functions "giving the *other machines* in your system access to the data and files on the [Windows] CE device," including "non-Microsoft development products." 622 Pet. 35–36 (quoting Ex. 1030, 328) (emphasis added by Petitioner). In view of these teachings, Dr. Zadok testifies it would have been obvious "to connect a PDA to Goggin's Windows CE device as one of those 'other machines' because doing so would have advantageously allowed a[n] [ordinarily skilled artisan] to transfer or synchronize the files and data between a PDA and Goggin's Windows CE device." Ex. 1004 ¶ 204.

Petitioner's obviousness showing for claims 7 and 64 is premised on Goggin's basic teachings that desktop computers and wireless computers can access a Windows CE device. 622 Pet. 35 (citing Ex. 1030, 24[10], 63); *see also* Ex. 1030, 30 (discussing other types of computers, such as handheld devices). In light of these basic teachings and of Goggin's teachings on connecting "other machines," we are persuaded by Dr. Zadok's testimony that it would have been obvious to one of ordinary skill in the art to connect other types of computers, such as PDAs, to a Windows CE device. *See* Ex. 1004 ¶ 204. Accordingly, we are persuaded by Petitioner's obviousness showing, as supported by Dr. Zadok's rationale.

Patent Owner does not present separate arguments directed to claims 7 and 64. Considering Petitioner's analysis of the additional limitation from

[10] Although the Petition mistakenly cites page 25 of Goggin, the quoted language is from page 24.

claims 7 and 64 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 7 and 64, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 7 and 64 would have been obvious over Goggin under 35 U.S.C. § 103(a).

11. Claims 8 and 9

For the recitations in claims 8 and 9 regarding different display devices and different types of display devices, Petitioner again cites Goggin's teachings about "other machines" having access to a Windows CE device via RAPI functions. 622 Pet. 48 (citing Ex. 1030, 328; Ex. 1004 ¶ 210). Supported by Dr. Zadok's testimony, Petitioner argues an ordinarily skilled artisan "would have found it obvious and straightforward to connect different Windows-based computers to the [Windows] CE device at different times to . . . allow access to [a] file from different locations, such as home and office." *Id.* (citing Ex. 1004 ¶¶ 210–211).

Petitioner's analysis for claims 6, 7, 63, and 64 shows that different types of external display devices may access the Windows CE device. Dr. Zadok's testimony regarding home and office use provides a persuasive rationale about why an ordinarily skilled artisan would have been motivated to use different display devices at different times. *See* Ex. 1004 ¶¶ 210–211.

Patent Owner does not make separate arguments for claims 8 and 9. Considering Petitioner's analysis of the additional limitations in claims 8 and 9 in combination with its analysis for claims 1, 6, 7, 58, 63, and 64, we determine Petitioner has shown that Goggin teaches all the limitations in

claims 8 and 9, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 8 and 9 would have been obvious over Goggin under 35 U.S.C. § 103(a).

12. Claims 10 and 65

For the limitations in claims 10 and 65 about transmitting over a second wireless communications channel, Petitioner contends Goggin teaches "send[ing] a request to create a file (using CeCreateFile()) . . . on a *first* channel (from a remote display device to the Windows CE device)," whereupon "the Windows CE device creates a file and returns an active handle for that file to the desktop machine on a *second* channel (*i.e.*, a channel in the other direction . . .)." 622 Pet. 37 (citing Ex. 1004 ¶ 237). Specifically, Petitioner quotes Goggin's teaching on the CeCreateFile() function "creat[ing] a file for reading or writing and return[ing] an active handle to that file." *Id.* (quoting Ex. 1030, 505–06) (emphasis omitted). Petitioner notes that the Specification of the '511 patent "makes clear that these upstream and downstream paths are considered different 'channels.'" *Id.* at 37–38 n.12 (citing Ex. 1001, 4:30–33). Petitioner additionally cites Goggin's teachings on the use of wireless connections for communicating with a Windows CE device. *Id.* at 38 (citing Ex. 1030, 30, 63).

We are persuaded by Petitioner's showing that certain RAPI functions result in data moving from a Windows CE device to a desktop computer. *See id.* at 36–37. Dr. Zadok explains that an ordinarily skilled artisan would have considered this data to have been transmitted in a second wireless

channel, particularly in light of the description of channels in the '511 patent. *See* Ex. 1004 ¶¶ 236–37.

Patent Owner does not make separate arguments for claims 10 and 65. Considering Petitioner's analysis of the additional limitations in claims 10 and 65 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 10 and 65, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 10 and 65 would have been obvious over Goggin under 35 U.S.C. § 103(a).

13. Claims 19 and 68

Regarding the bar-code input and bar-code reader limitations in claims 19 and 68, Petitioner cites Goggin's teachings on using bar code readers with a Windows CE device. 622 Pet. 39 (citing Ex. 1030, 64, 388). As such, Petitioner persuasively shows Goggin teaches the use of bar code readers with Windows CE devices.

Patent Owner does not make separate arguments for claims 19 and 68. Considering Petitioner's analysis of the additional limitations in claims 19 and 68 in combination with its analysis for claims 1 and 58, we determine Petitioner has shown that Goggin teaches all the limitations in claims 19 and 68, or at least renders them obvious under Petitioner's obviousness rationale. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 19 and 68 would have been obvious over Goggin under 35 U.S.C. § 103(a).

B. Obviousness Ground Based on Goggin and Bodnar

Petitioner contends claims 2 and 59 would have been obvious over the combination of Goggin and Bodnar. 622 Pet. 39–44.

1. Bodnar

Bodnar relates to "storing information in one device, particularly a portable (e.g., hand-held) computing device, and transferring that information to another computing device." Ex. 1005, 1:16–19. Bodnar teaches the use of a "Delta Block" File System (DBFS) to achieve improved and minimized data transfer by calculating the "deltas" or differences between two data sets. *Id.* at 1:38–41, 2:21–31. In this way, only changed blocks of information are transferred during an update. *Id.* at 6:35–45.

Petitioner contends Bodnar qualifies as prior art under at least 35 U.S.C. § 102(a) based on Bodnar's issue date of January 4, 2000. 622 Pet. 39. Patent Owner does not put forth evidence of invention earlier than this date. Accordingly, we agree that Bodnar qualifies as § 102(a) prior art because Bodnar's issue date is before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1005, at [45].

2. Claims 2 and 59

Building on its obviousness analysis for claims 1 and 58 based on Goggin, Petitioner cites Bodnar's teachings on "sending information about a 'delta' between the original and modified files to update a remote copy of the file." 622 Pet. 40, 42 (citing, *inter alia*, Ex. 1005, 2:21–31, 6:35–45). As supported by the testimony of Dr. Zadok, Petitioner contends that an

ordinarily skilled artisan would have had reason to modify Goggin's teachings on using RAPI commands with Bodnar's sending of only delta information in order to "update files more quickly." *Id.* at 39–41 (citing, *inter alia*, Ex. 1004 ¶¶ 181–83). This would result in transferring to a Windows CE device only the changes made to the source electronic file on the desktop computer. Furthermore, we are persuaded that Bodnar's teachings on transmitting incremental changes to update a file could be implemented with RAPI commands, as suggested by Petitioner. *See id.* at 40 (citing Ex. 1004 ¶ 182).

Patent Owner does not present separate arguments directed to claims 2 and 59. Considering Petitioner's analysis of the additional limitation from claims 2 and 59 in combination with its analysis for claims 1 and 58 in the Goggin obviousness ground, we determine Petitioner has shown the combination of Goggin and Bodnar teaches all the limitations in claims 2 and 59. We are also persuaded by Petitioner's rationale for combining Goggin and Bodnar. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 2 and 59 would have been obvious over the combination of Goggin and Bodnar.

C. Obviousness Ground Based on Goggin and Jornada

Petitioner contends claims 8 and 9 would have been obvious over the combination of Goggin and Jornada. 622 Pet. 44–50.

1. Jornada

Jornada is a user manual that describes "the Hewlett-Packard Jornada 820 or 820e Handheld PC (H/PC), a mobile device powered by the

Microsoft® Windows® CE operating system." Ex. 1006, 8.[11] Jornada describes the ways in which a Jornada HPC may connect to desktop or notebook PCs. *Id.* at 8, 21–22.

Petitioner contends Jornada was "published and made publicly available in 1998, [and] is prior art under at least pre-AIA § 102(b)." 622 Pet. 45 (citing, *inter alia*, Ex. 1056 ¶¶ 3–5). Petitioner's contention is supported by a declaration from David Lobato of Hewlett-Packard, who testifies that Jornada "was published by Hewlett Packard Company and made available to the public in connection with purchase of the HP Jomada 820/820e Handheld PC." Ex. 1056 ¶ 5. Mr. Lobato further testifies the HP Jornada "was released to the public for purchase [in] October, 1998." *Id.* ¶ 6. We also observe Jornada includes a copyright date of 1998. Ex. 1006, 5.

Patent Owner does not dispute Petitioner's evidence of publication. We determine Petitioner has persuasively shown that Jornada was published in 1998. Thus, we determine that Jornada qualifies as prior art under 35 U.S.C. § 102(b) because Jornada's 1998 publication date is more than one year before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1006, 5; Ex. 1056 ¶¶ 3–6.

2. Claims 8 and 9

Building on its analysis for the Goggin obviousness ground, Petitioner cites Jornada as teaching that data and files on a Windows CE device may

[11] We refer to the 5-digit page numbers applied by Petitioner to Jornada.

also be accessed from a notebook PC. 622 Pet. 47–49 (citing Ex. 1006, 8, 11). In light of this teaching, Petitioner contends an ordinarily skilled artisan would have found it obvious to implement a notebook PC in Goggin as a different type of display device (other than a desktop PC) for accessing a Windows CE device. *See id.* at 46 (citing Ex. 1004 ¶ 216; Ex. 1030, 328). Petitioner also notes that Goggin expressly identifies the HP Jornada computer. *Id.* at 45 (citing Ex. 1030, 54–55, Fig. 1.10).

Petitioner's citations from Jornada further support its obviousness case regarding different types of external display devices accessing a Windows CE device at different times. We are also persuaded that an ordinarily skilled artisan would have had reason to combine Goggin with Jornada, particularly in light of Goggin's express mention of the HP Jornada computer. *See* Ex. 1030, 54–55, Fig. 1.10.

Patent Owner does not present separate arguments directed to claims 8 and 9. Considering Petitioner's analysis of the additional limitation from claims 8 and 9 in combination with its analysis for claims 1, 6–9, 58, 63, and 64 in the Goggin obviousness ground, we determine Petitioner has shown the combination of Goggin and Jornada teaches all the limitations in claims 8 and 9. We are also persuaded by Petitioner's rationale for combining Goggin and Jornada. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 8 and 9 would have been obvious over the combination of Goggin and Jornada.

D. Obviousness Ground Based on Goggin and DeLorme

Petitioner contends claims 20 and 69 would have been obvious over the combination of Goggin and DeLorme. 622 Pet. 50–53.

1. DeLorme

DeLorme consists of two different web pages (DeLorme Receiver and DeLorme Accessories) pertaining to a Global Positioning System (GPS) receiver called Earthmate and its accessories. Exs. 1012, 1039. DeLorme states that the Earthmate GPS receiver can be connected to a Windows CE device using an adapter cable. Ex. 1012, 8; Ex. 1039, 10.

Petitioner contends DeLorme Receiver and DeLorme Accessories were "published on DeLorme's website (www.delorme.com/earthmate) and made publicly available by May 1999," so they qualify as a prior art under 35 U.S.C. § 102(b). 622 Pet. 50 (citing Exs. 1012, 1039; Ex. 1057 ¶¶ 8, 11). Petitioner's contention is supported by a declaration from Christopher Butler from the Internet Archive, which provides a service known as the Wayback Machine for archiving Internet websites. *See* Ex. 1057 ¶¶ 1–7. Based on records from the Internet Archive, Mr. Butler testifies that Delorme Receiver was archived from the Internet on February 2, 1999, whereas Delorme Accessories was archived from the Internet on May 4, 1999. Ex. 1057 ¶¶ 8, 11.

Patent Owner does not dispute Petitioner's evidence of publication. We determine Petitioner has persuasively shown that DeLorme Receiver and DeLorme Accessories were published on the Internet by May 1999. Thus, we determine that DeLorme Receiver and DeLorme Accessories qualify as prior art under 35 U.S.C. § 102(b) because their February and May 1999 publication dates are more than one year before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1057 ¶¶ 8, 11.

To the extent that the DeLorme Receiver and DeLorme Accessories are two separate references, Petitioner argues (1) that DeLorme Accessories "is a subpage" of DeLorme Receiver with a link on the DeLorme Receiver page (*see* Ex. 1012, 7); and (2) "there would be a motivation to combine the references since both are directed at the Delorme Earthmate" (*see* Ex. 1004 ¶ 256). 622 Pet. 51 n.14. In light of these arguments, we are satisfied that the DeLorme Receiver and DeLorme Accessories are interrelated teachings that an ordinarily skilled artisan would have known to combine. *See KSR*, 550 U.S. at 418. Henceforth, we will follow Petitioner's convention and refer collectively to DeLorme Receiver and DeLorme Accessories as simply "DeLorme."

2. Claims 20 and 69

Claim 20 depends from claim 1 and further recites "a GPS input for connecting a global positioning system (GPS) receiver." Ex. 1001, 14:60–61. Claim 69 depends from claim 58 and includes the same limitation. *Id.* at 18:53–54. Petitioner cites Goggin as teaching that a Windows CE device can have a serial port for connecting serial devices. 622 Pet. 51 (citing Ex. 1030, 36). Petitioner further cites DeLorme as teaching that the Earthmate GPS receiver can be connected to a Windows CE device using a serial port adapter cable. *Id.* at 52 (citing Ex. 1012, 7–8; Ex. 1039, 11). Petitioner contends an ordinarily skilled artisan would have had reason to combine DeLorme with Goggin because "De[L]orme explicitly suggests connecting a GPS device to a Windows CE machine," among other things. *Id.* at 50.

Petitioner's citations to DeLorme establish that GPS receivers were known to be used with Windows CE devices. *See id.* at 51–52. Patent Owner does not present separate arguments directed to claims 20 and 69. Considering Petitioner's analysis of the additional limitation from claims 20 and 69 in combination with its analysis for claims 1 and 58 in the Goggin obviousness ground, we determine Petitioner has shown the combination of Goggin and DeLorme teaches all the limitations in claims 20 and 69. We are also persuaded by Petitioner's rationale for combining Goggin and DeLorme. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 20 and 69 would have been obvious over the combination of Goggin and DeLorme.

E. Obviousness Ground Based on Goggin and Ogasawara

Petitioner contends claims 21 and 70 would have been obvious over the combination of Goggin and Ogasawara. 622 Pet. 53–55.

1. Ogasawara

Ogasawara is a web page containing a review of the Hewlett-Packard Jornada External Keyboard, which is for use with Windows CE devices. Ex. 1013, 6.

Petitioner contends Ogasawara was "made publicly available in May 1999 [and] is prior art under at least pre-AIA § 102(b)." 622 Pet. 53 (citing Ex. 1057 ¶ 9). Petitioner's contention is again supported by the declaration of Christopher Butler, who testifies that Ogasawara was archived from the Internet on May 8, 1999. Ex. 1057 ¶ 9.

Patent Owner does not dispute Petitioner's evidence of publication. We determine Petitioner has persuasively shown that Ogasawara was published on the Internet by May 1999. Thus, we determine that Ogasawara qualifies as prior art under 35 U.S.C. § 102(b) because its May 1999 publication date is more than one year before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1057 ¶ 9.

2. Claims 21 and 70

Claim 21 depends from claim 1 and further recites "a keyboard input for connecting an external keyboard." Ex. 1001, 14:64. Claim 70 depends from claim 58 and includes the same limitation. *Id.* at 18:57. Petitioner cites Ogasawara as teaching that an external keyboard can be added to handheld PCs using Windows CE. 622 Pet. 55 (citing Ex. 1013, 6). Petitioner contends an ordinarily skilled artisan would have had reason to combine Ogasawara with Goggin because "Ogasawara explicitly discusses connecting an external keyboard to a Windows CE device," among other things. *Id.* at 53.

Petitioner's citations to Ogasawara establish that it was known to use an external keyboard with a Windows CE device. *See id.* at 54. Patent Owner does not present separate arguments directed to claims 21 and 70. Considering Petitioner's analysis of the additional limitation from claims 21 and 70 in combination with its analysis for claims 1 and 58 in the Goggin obviousness ground, we determine Petitioner has shown the combination of Goggin and Ogasawara teaches all the limitations in claims 21 and 70. We are also persuaded by Petitioner's rationale for combining Goggin and

Ogasawara. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 21 and 70 would have been obvious over the combination of Goggin and Ogasawara.

F. Obviousness Ground Based on Goggin and CapShare

Petitioner contends claims 22 and 71 would have been obvious over the combination of Goggin and CapShare. 622 Pet. 55–57.

1. CapShare

CapShare is a product specification for the HP CapShare 920, which is a handheld and portable copier by Hewlett-Packard that can be used with Windows CE devices. Ex. 1007, 4–5. CapShare states that the CapShare 920 device copies business cards. *Id.*

Petitioner contends CapShare was "published by Hewlett-Packard in July 1999[,] made publicly available in August 1999[, and] is prior art under at least pre-AIA § 102(a)." 622 Pet. 55 (citing Ex. 1056 ¶¶ 3, 4, 7, 8). Petitioner's contention is supported by the declaration of Mr. Lobato, who testifies that CapShare "was published by Hewlett Packard Company and made available to the public in connection with purchase of the HP CapShare 920." Ex. 1056 ¶ 7. Mr. Lobato further testifies "the Cap[S]hare 920 was released to the public for purchase [in] August, 1999." *Id.* ¶ 8. We also observe CapShare includes a notation that it was "Printed in USA 7/99" and a copyright date of 1999. Ex. 1007, 5.

Patent Owner does not dispute Petitioner's evidence of publication, and Patent Owner does not put forth evidence of invention earlier than the filing date of the '511 patent. We determine Petitioner has persuasively

shown that CapShare was published in 1999. Thus, we determine that CapShare qualifies as prior art under 35 U.S.C. § 102(a) because CapShare's 1999 publication date is before the filing date for the challenged claims of the '511 patent, which is August 31, 2000. *See* Ex. 1001, at [22]; Ex. 1007, 5; Ex. 1056 ¶¶ 3, 4, 7, 8.

2. Claims 22 and 71

Claim 22 depends from claim 1 and further recites "a card reader input for connecting a card reader." Ex. 1001, 14:67. Claim 71 depends from claim 58 and includes the same limitation. *Id.* at 18:60. Petitioner cites CapShare as teaching that a card reader can be added to Windows CE devices. 622 Pet. 57 (citing Ex. 1007, 4–5). Petitioner also cites this teaching as a reason for combining CapShare with Goggin. *See id.* at 56.

We are persuaded by Petitioner's showing from CapShare on the use of business card readers with a Windows CE device. *See id.* at 55–56. This is the same type of card-reading described in the '511 patent. *See* Ex. 1001, 11:29–33. Patent Owner does not present separate arguments directed to claims 22 and 71. Considering Petitioner's analysis of the additional limitation from claims 22 and 71 in combination with its analysis for claims 1 and 58 in the Goggin obviousness ground, we determine Petitioner has shown the combination of Goggin and CapShare teaches all the limitations in claims 22 and 71. We are also persuaded by Petitioner's rationale for combining Goggin and CapShare. Thus, we determine, by a preponderance of the evidence, that the subject matter of claims 22 and 71 would have been obvious over the combination of Goggin and CapShare.

G. Obviousness Grounds That Add Proxim

Proxim is a press release from Proxim, Inc., that announces "the availability of the RangeLAN2(TM) CE PC Card for Windows CE-based Handheld PCs." Ex. 1015, 3. Building on the obviousness grounds discussed above, Petitioner posits adding Proxim to each ground "[t]o the extent it is argued that further disclosure of a RF receiver or transmitter is required." 622 Pet. 23.

Petitioner contends Proxim was published "March 29, 1999, and available on LEXIS, making it prior art under at least pre-AIA § 102(b)." *Id.* at 17 (citing Ex. 1055). In support of this contention, Petitioner includes a "Certificate of Authenticity" in which Amy Klenke of LexisNexis states:

> To the best of my knowledge, [Proxim] was loaded onto the LN [LexisNexis] services on March 30th, 1999, and appeared to customers on the Lexis system and has been stored in the LN services in such a manner that LN customers cannot alter the text of such documents as made available to other LN customers by LN through the LN services.

Ex. 1055, 2. The "Certificate" appears to have been "[s]worn and subscribed" to a notary public from the State of Ohio. *Id.*

We determine that the "Certificate" in Exhibit 1055 is not an "affidavit" as required by 37 C.F.R. § 42.63(b) and as defined by 37 C.F.R. §§ 1.68 and 42.2. Specifically, this document does not indicate that Ms. Klenke was warned that willful false statements are punishable by fine or imprisonment or that Ms. Klenke was sworn under penalty of perjury. *See* 28 U.S.C. § 1746; 37 C.F.R. §§ 1.68, 42.2. Accordingly, we give no weight to the "Certificate" in Exhibit 1055.

Petitioner does not present any other evidence that Proxim qualifies as a printed publication under 35 U.S.C. § 102(b). As such, Petitioner has

failed to establish that Proxim is prior art under § 102(b). Thus, we conclude Petitioner has not demonstrated, by a preponderance of the evidence, that the subject matter of claims 1–10, 19–22, 58–65, and 68–71 would have been obvious over the various Goggin-based grounds discussed above in combination with Proxim.

III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that:

A. claims 1–6, 8–10, 58–63, and 65 of the ’343 patent are unpatentable under § 103(a) over Kimura;

B. claims 1, 3–10, 19, 58, 60–65, 68 of the ’343 patent are unpatentable under § 103(a) over Goggin;

C. claims 2 and 59 of the ’343 patent are unpatentable under § 103(a) over the combination of Goggin and Bodnar;

D. claims 8 and 9 of the ’343 patent are unpatentable under § 103(a) over the combination of Goggin and Jornada;

E. claims 20 and 69 of the ’343 patent are unpatentable under § 103(a) over the combination of Goggin and DeLorme;

F. claims 21 and 70 of the ’343 patent are unpatentable under § 103(a) over the combination of Goggin and Ogasawara; and

G. claims 22 and 71 of the ’343 patent are unpatentable under § 103(a) over the combination of Goggin and CapShare.

Petitioner, however, has not demonstrated, by a preponderance of the evidence, that:

H. claims 2 and 59 of the ’511 patent are unpatentable under § 103(a) over Goggin; and

I. claims 1–10, 19–22, 58–65, and 68–71 of the ’511 patent are unpatentable under § 103(a) over the various Goggin-based grounds discussed above in combination with Proxim.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–10, 19–22, 58–65, and 68–71 of the ’511 patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO. LTD.,
SAMSUNG ELECTRONICS AMERICA, INC., and APPLE INC.,
Petitioner,

v.

ROSETTA-WIRELESS CORPORATION,
Patent Owner.

Case IPR2016-00622[1]
Patent 7,149,511 B1

ARBES, *Administrative Patent Judge,* dissenting.

I respectfully dissent from the majority's decision. Based on the full record developed during trial, I am persuaded that Patent Owner's proposed interpretation of the claim term "downstream data" is the broadest reasonable interpretation in light of the Specification of the '511 patent and, given that interpretation, respectfully disagree with the majority's decision that Petitioner has proven unpatentability of the challenged claims by a preponderance of the evidence.

Petitioner argues that "downstream data" should be interpreted to mean "data that is transmitted over a wireless communications channel."

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[1] Case IPR2016-00616 has been consolidated with this proceeding.

Pet. Reply 3. Patent Owner proposes "data transmitted from a source server to the personal network server." PO Resp. 15. The majority interprets "downstream data" to mean "data moving from a downstream channel to the wireless intelligent personal network server."

The word "downstream" in "downstream data" should be given meaning. When considering multiple possible claim constructions, "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." *Merck & Co., Inc. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005); *see also Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) ("The Board was correct to not include in its construction . . . features . . . that are expressly recited in the claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant."); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) ("[C]laims are interpreted with an eye toward giving effect to all terms in the claim."). Claims 1 and 58 recite a "wireless intelligent personal network server" (WIPS) comprising a receiver or transceiver for "receiving downstream data transmitted over a first wireless communications channel." Thus, the claims expressly require that the data be transmitted over the channel *to* the receiver or transceiver of the WIPS, where the data is received. In my view, the majority's interpretation of "data moving from a downstream channel to the wireless intelligent personal network server" merely rephrases what is already recited in the claims, without accounting for the "downstream" nature of the data.[2] Indeed, the majority

[2] Petitioner's proposed interpretation of "data that is transmitted over a wireless communications channel" does so as well, as the claims already

acknowledges on page 19 of the decision that the "downstream channel" in its interpretation "is the 'first wireless communications channel' in the parlance of claims 1 and 58"; thus, it is unclear what further meaning (if any) comes from calling it a "downstream" channel.

In similar situations involving a claim phrase with an adjective preceding a noun, the U.S. Court of Appeals for the Federal Circuit has interpreted the phrase to ensure that the adjective has meaning, as long as such an interpretation is consistent with the specification. For example, in *Convolve, Inc. v. Compaq Comp. Corp.*, 812 F.3d 1313, 1318 (Fed. Cir. 2016), the district court rejected a broad interpretation of the term "user interface" that "fail[ed] to give meaning to the adjective 'user'" and the Federal Circuit agreed, noting that "[t]he claim term is 'user interface,' not just 'interface.' The word 'user' therefore must distinguish between different kinds of interfaces." The Federal Circuit further determined that interpreting the phrase to give meaning to the word "user" was consistent with the specification of the patent at issue, which "disclose[d] several embodiments of a 'user interface,' all of which the user interacts with directly to select an operation mode." *Id.* "Although the claims [were] not limited to these particular embodiments, the nature of these embodiments confirm[ed] that a 'user interface' must be the site at which the user actually selects an operation mode." *Id.* at 1319.

Similarly, in *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016), the Federal Circuit rejected a broad interpretation of "pressurized collection vessel" that would have rendered

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recite "downstream data transmitted over a first wireless communications channel."

"collection" meaningless, noting that "the remainder of the specification supports the court's construction" and the term should be interpreted "to give meaning to 'collection' consistent with the specification." *See also NobelBiz, Inc. v. Global Connect, L.L.C.*, No. 2016-1104, 2017 WL 3044641, at *3 (Fed. Cir. July 19, 2017) (unpublished) (concluding that "requiring that the call be extant gives meaning to the word 'outbound' in 'outbound call,'" and "the specification supports the conclusion that the system acts on an already extant call"); *TMI Prods., Inc. v. Rosen Entm't Sys., L.P.*, 610 F. App'x 968, 971–72 (Fed. Cir. 2015) (unpublished) (rejecting an interpretation of "selective access" that would "render[] the term 'selective' unnecessary"). Just as in these cases, an interpretation of "downstream data" that gives meaning to the adjective "downstream" and does not render other parts of the claim redundant should be favored, as long as that interpretation is consistent with the Specification.[3] *See* PO Resp. 20–21.

[3] Petitioner argued at the hearing that the words "downstream" and "upstream" are merely "labels" used to "distinguish between different types of data in the claims" and have no meaning on their own. Tr. 7:19–20, 21:15–22:12. I disagree. The inventors plainly knew how to differentiate between components, as evidenced by the recitation in the claims of "first" and "second" wireless communications channels, "first" and "second" interfaces, "first" and "second" external display devices, "first" and "second" power contacts, and "first" and "second" power management circuits. *See, e.g.*, Ex. 1001, claims 1, 8, 10, 13, 17, 18. Rather than reciting "first" and "second" data, for example, the inventors chose to use "downstream" and "upstream" data—specific terms that are used throughout the Specification, as explained below.

Patent Owner's proposed interpretation gives meaning to "downstream" and is consistent with the Specification of the '511 patent. The essential dispute we must resolve in this proceeding pertains to the source and directional flow of the downstream data. The majority's interpretation (as well as Petitioner's proposed interpretation) allows the source to be any device, including the recited external display device—as long as the data moves through a downstream channel and is received by the WIPS, it is "downstream data." *See* Pet. Reply 5 (arguing that "'downstream data' may originate from the display device and not from a separate 'source server'"); Tr. 73:18–74:1 (Petitioner acknowledging that under its proposed interpretation, "everything the WIPS receives is downstream data . . . no matter the source"). Patent Owner's proposed interpretation, on the other hand, precludes the source from being the external display device. In other words, the majority's interpretation permits a two-node arrangement, whereas Patent Owner's proposed interpretation requires a three-node arrangement. In my view, the only reasonable reading of the claims in light of the Specification is the three-node arrangement.

The Specification repeatedly and consistently uses the word "downstream" in referring to data flowing from (1) a source to (2) the WIPS, where it can then be accessed by (3) the external display device. Patent Owner provides the following annotated version of Figure 1 of the '511 patent (PO Resp. 17) to illustrate this flow:

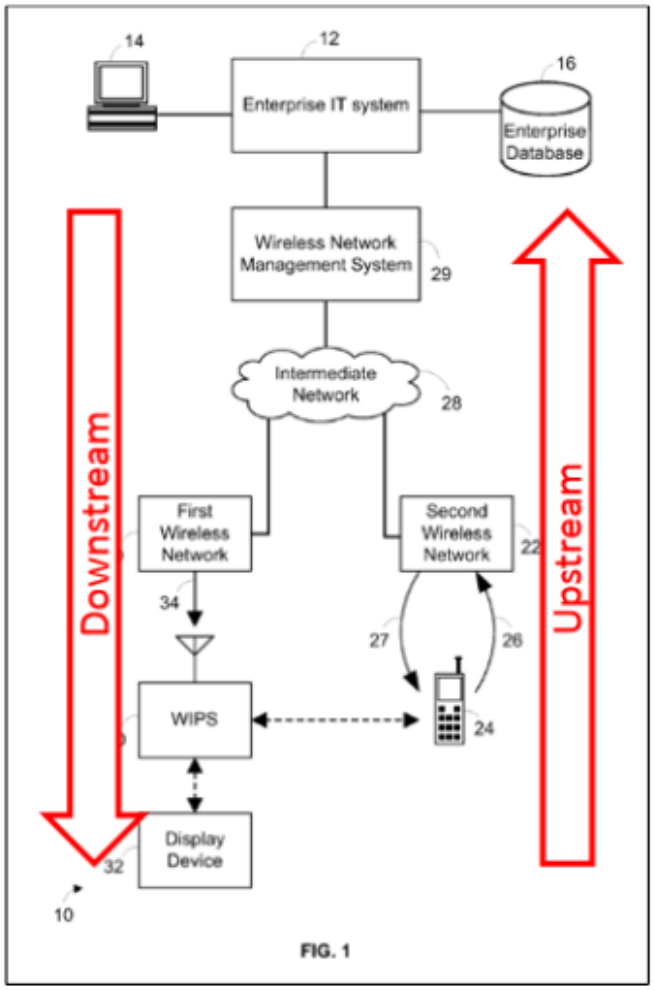

FIG. 1

As shown in the annotated figure above, "downstream" data follows a path from a source (personal computer 14 and enterprise information technology (IT) system 12 that accesses data stored in "a centralized database for the enterprise," such as enterprise database 16) through various networks and channels to WIPS 30. Ex. 1001, col. 3, l. 62–col. 4, l. 46. Specifically, "enterprise IT system 12 uses a wireless network management system 29 to communicate with wireless networks 20 and 22, via intermediate network 28." *Id.* at col. 4, ll. 34–38. "First wireless network 20 is able to transmit data, at least intermittently, over one or more downstream wireless channels to wireless receivers operating within its wireless coverage area." *Id.* at

col. 4, ll. 10–13. WIPS 30 in turn "receives [the] transmission, over wireless channel 34, containing downstream data," "stores it in its memory," and "is able to transfer the data stored in its memory to and from different types of display devices 32, on at least an intermittent basis, as indicated by the dotted line in FIG. 1." *Id.* at Abstract, col. 4, ll. 44–51, col. 5, ll. 35–36, col. 6, ll. 60–62, col. 7, ll. 11–13, col. 9, ll. 3–6, 26–53. In that way, data is transmitted from the source such that the WIPS "receives data transmitted over a wireless communications channel and automatically processes it so as to maintain a copy of at least one electronic file stored in a *source computer*." *Id.* at col. 1, ll. 8–12 (emphasis added), col. 12, l. 60–col. 13, l. 2.

"Upstream" data flows in the opposite direction. When WIPS 30 successfully receives a data transmission and wants to "acknowledge receipt of the downstream data," it "uses wireless telephone 24 to send [an] acknowledgement signal to second wireless network 22 over an upstream channel 26." *Id.* at Abstract, col. 5, ll. 49–53, col. 6, ll. 64–67. "Second wireless network 22, in turn, transmits the acknowledgement to wireless network management system 29, via intermediate network 28." *Id.* at col. 6, l. 67–col. 7, l. 3. Further, when a change is made to an electronic file stored on WIPS 30, WIPS 30 can

> generate a stream of *upstream data* in order to have the change reflected in the corresponding electronic file in enterprise IT system 12. WIPS 30 causes wireless telephone 24 to transmit the *upstream data* over upstream channel 26 to second wireless network 22, which then passes the *upstream data* to wireless network management system 29, via intermediate network 28. Management system 29 recognizes that a change is being requested, and, if the requested change is validated, management system 29 passes the *upstream data* to enterprise IT network

> 12.[4] Enterprise IT network 12, in turn, uses the *upstream data* to change its copy of the electronic file.

Id. at col. 7, ll. 14–34 (emphasis added). Claims depending from claims 1 and 58 also reflect the "downstream" and "upstream" paths shown in the annotated figure above. *See, e.g., id.*, claims 2 ("said downstream data reflects changes made to at least one source electronic file"), 11 ("said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data"), 12 ("said RF transmitter transmits upstream data over said second wireless communications channel . . . reflecting changes to said at least one electronic file made by said external display device"), 14, 15, 66, 67.

Importantly, there is no embodiment in the Specification of the '511 patent describing a two-node arrangement of the WIPS and external display device, where the external display device is both the source of "downstream data" provided to the WIPS over a wireless communications channel and also the mechanism by which the user accesses the data. The Specification only describes the three-node arrangement explained above.[5]

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[4] If "upstream data" is what flows upstream *to* enterprise IT system 12, it is logical that "downstream data" would flow downstream *from* enterprise IT system 12.

[5] Petitioner argued at the hearing that certain portions of the Specification describe a two-node arrangement. Tr. 17:4–18:4, 31:2–32:1, 68:23–70:21. I disagree. The cited portions of the Specification merely disclose that display device 32 may be a variety of different types of devices and that display device 32 may be used to "access" and "modify" electronic files stored in WIPS 30 by sending "a stream of digital data that embodies some or all of the requested changes" to WIPS 30. *See* Ex. 1001, col. 4, l. 55–col. 5, l. 7, col. 8, ll. 39–41, col. 10, ll. 9–23. The cited portions never state that display device 32 may be the source of "downstream data" provided to WIPS 30. To the contrary, display device 32 is described as a different

Although the claims are not limited to the precise wireless communication system 10 shown in Figure 1, "downstream data" should be read to give meaning to the word "downstream" consistent with the entirety of the Specification. Patent Owner's proposed interpretation, which requires the source of the "downstream data" to be something other than the recited external display device (i.e., a "source server"), is consistent with the disclosure of the '511 patent. I agree with Patent Owner and its declarant, William H. Mangione-Smith, Ph.D., that the inclusion of "downstream" in the claim phrase "receiving downstream data" signifies "the source of the data and the direction in which it is flowing, namely, that the data received by the personal network server is data traveling *from* the source server *to* the WIPS (where it is then made available to the end user via the display device)." PO Resp. 21; *see* Ex. 2022 ¶¶ 31–55.

To be sure, as the majority points out and as shown in the annotated figure above, the last connection in the path that "downstream data" takes before reaching WIPS 30 is wireless channel 34. But that does not mean that the word "downstream" implicates only that last step. The entire purpose of the "downstream data" is for centrally-stored data in a "source computer" (e.g., the enterprise IT system in Figure 1) to be provided to the WIPS so that the WIPS maintains a copy of the most current information, which the user can then access via the external display device. *See, e.g.*, Ex. 1001, col. 1, ll. 8–12, col. 2, l. 52–col. 3, l. 42, col. 5, ll. 35–48, col. 6, ll. 31–64, col. 9, ll. 1–53, col. 12, l. 60–col. 13, l. 7. It is not surprising that,

component from personal computer 14, enterprise IT system 12, and enterprise database 16, where the electronic files originate. *See, e.g., id.* at col. 3, l. 62–col. 5, l. 44, col. 6, l. 24–col. 7, l. 34, Fig. 1.

in order to do so, the data must travel through various intermediaries (wireless network management system 29, intermediate network 28, first wireless network 20, and wireless channel 34) to get from the source to the WIPS. Further, the "downstream data" does not originate at wireless channel 34. It originates at the source that initiates the data transmission to the WIPS; wireless channel 34 is merely a conduit through which it is provided. *See id.* at col. 9, ll. 26–53 ("downstream data" may include, for example, a "processing code to instruct WIPS 30 on how to process the downstream data" or an "update script directing" WIPS 30 on how to update a target electronic file).

Reading the Specification as a whole, I am persuaded that the "downstream" nature of the data comes not from what particular channel it travels on to reach the WIPS in the last step, but rather the relationship between the source of the data, the WIPS, and the external display device. The majority's interpretation, which focuses on the channel and WIPS only, is unreasonably broad in my view based on what is described in the Specification. *See Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016) ("While the broadest reasonable interpretation standard is broad, it does not give the Board an unfettered license to interpret the words in a claim without regard for the full claim language and the written description."); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) ("Even under the broadest reasonable interpretation, the Board's construction 'cannot be divorced from the specification and the record evidence,' and 'must be consistent with the one that those skilled in the art would reach.' A construction that is 'unreasonably broad' and which

does not 'reasonably reflect the plain language and disclosure' will not pass muster." (citations omitted)).

The majority also states that it is not inclined to read a "source server" into the claims, which do not expressly recite such a component. Patent Owner's proposed interpretation does not improperly read in a limitation from the Specification in my view. "Source server" is a broad term, but serves an important function in the overall interpretation by virtue of the fact that it is *not* the external display device. Thus, including it dictates that the source of the data be something *other than* the external display device, which is entirely consistent with the three-node arrangement described in the Specification. In other words, data flows "downstream" from its source to the WIPS, where it can be accessed via the external display device. Including in the claim interpretation the concept that the source of the data must be something other than the external display device is necessary to give meaning to the word "downstream" and is confirmed by the fact that the Specification only describes a three-node arrangement with data flowing in the direction described above. As Patent Owner points out, it also is consistent with the ordinary understanding of the word "downstream." *See* PO Resp. 23; Ex. 2007, 3 (defining "downstream" as "[i]n communications, the direction of transmission flow from the *source* toward the sink (*destination*/user)" (emphasis added)); *see also* Ex. 2024, 5 (defining "upstream" as "[i]n the direction opposite to data flow or toward the *source* of transmission" (emphasis added)).

Finally, with respect to the prosecution history of the '511 patent, I agree with the majority's determination that, although the cited statement uses "i.e.," the inventors did not expressly define "downstream data" during

prosecution as "data that is transmitted over a wireless communications channel" because that language simply mirrors what is already in the claims. *See* Ex. 1001, claims 1, 58 (reciting "downstream data transmitted over a first wireless communications channel"); Ex. 1002, 356–357.

Accordingly, I conclude that the broadest reasonable interpretation of "downstream data" in light of the Specification of the '511 patent is "data transmitted from a source server to the personal network server." Applying its contrary interpretation, the majority finds that Goggin and Kimura teach a receiver (claim 1) and transceiver (claim 58) for "receiving downstream data transmitted over a first wireless communications channel." I disagree with that conclusion and, therefore, respectfully dissent from the majority's determination that challenged claims 1–10, 19–22, 58–65, and 68–71 are unpatentable.

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