UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS, LLC,
Petitioner,

v.

2BCOM, LLC,
Patent Owner.

IPR2020-00996
Patent 7,127,210 B2

Before MICHELLE N. WORMMEESTER, JOHN A. HUDALLA, and SHARON FENICK, *Administrative Patent Judges.*

FENICK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Dismissing Petitioner's Motion to Strike
Denying-in-Part and Dismissing-in-Part Patent Owner's Motion to Exclude
35 U.S.C. § 318(a)

I. INTRODUCTION

We issue this revised Final Written Decision as per our decision (Paper 64) to grant Petitioner's Request for Rehearing (Paper 59), vacate our original Final Written Decision (Paper 58), and issue a revised Final Written

Decision. This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has established by a preponderance of the evidence that claims 12–17 and 19–21 of U.S. Patent No. 7,127,210 B2 (Ex. 1001, "the '210 patent") are unpatentable.

A. Procedural Background and Summary

Unified Patents, LLC ("Petitioner") filed a Petition for *inter partes* review of claims 12–17 and 19–21 of the '210 patent. Paper 2 ("Pet."). 2BCom, LLC ("Patent Owner") filed a Preliminary Response. Paper 6. After further briefing regarding discretionary denial of institution under 35 U.S.C. § 314(a) (Papers 8, 9, 11, 14), we determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims and we instituted this proceeding on December 3, 2020, as to all challenged claims and all grounds of unpatentability. Paper 16[1] ("Dec. on Inst.").

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 24, "PO Resp."), Petitioner filed a Reply to the Patent Owner Response (Paper 32, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 35, "PO Sur-reply"). An oral hearing was held on September 9, 2021, and a transcript was entered (Paper 56, "Tr.").

Petitioner filed Declarations of Dr. Vijay Madisetti (Ex. 1003) and Dr. Sylvia Hall-Ellis (Ex. 1010) with its Petition. Petitioner filed

[1] The Decision on Institution was entered as board and parties only; after the parties agreed no redactions were necessary, a public version was entered as Paper 47.

Declarations of Gordon MacPherson (Ex. 1036), Dr. Hall-Ellis (Ex. 1037), and Angela M. Oliver (Ex. 1050) with its Reply.

With our authorization (Paper 37), Petitioner filed a Motion to Strike Portions of Patent Owner's Sur-Reply and Improper Sur-Reply Evidence (Paper 38, "Pet. Mot. Strike") and Patent Owner filed an Opposition to this Motion (Paper 41, "PO Opp. Mot. Strike"). In addition, Patent Owner filed a Motion to Exclude (Paper 43, "PO Mot. Exclude"), Petitioner filed an Opposition (Paper 48, "Pet. Opp. Mot. Exclude"), and Patent Owner filed a Reply (Paper 51, "PO Reply Mot. Exclude").

We issued a Final Written Decision (Paper 58) and Petitioner timely filed a Request for Rehearing (Paper 59, "Reh'g Req.") requesting rehearing of that original Final Written Decision.

We granted Petitioner's Request for Rehearing and vacated our original Final Written Decision, indicating that a revised Final Written Decision would be issued. Paper 64. In this revised Final Written Decision, we address all arguments and evidence set forth in the Papers to the extent necessary to resolve the dispute between the parties.

B. Related Matters

The parties identify the following five district court cases as related: *2BCom, LLC v. FCA US LLC Chrysler Corp.*, No. 2:20-cv-10023 (E.D. Mich.); *2BCom, LLC v. Kia Motors America*, No. 8:20-cv-676 (C.D. Cal.); *2BCom, LLC v. TP-Link USA Corporation d/b/a TP-Link North America Inc.*, No. 8:20-cv-708 (C.D. Cal.); *2BCom, LLC v. Bayerische Motoren Werke AG et al.*, No.2:20-cv-3537 (C.D. Cal.); and *Amazon.com, Inc. et al. v. 2BCom, LLC*, No. 8:20-cv-00822 (C.D. Cal.). Pet. 1–2; Paper 4 (Patent Owner's Mandatory Notices), 1. In addition, Patent Owner identifies *2BCom, LLC v. D-Link Systems, Inc.*, No. 8:20-cv-00686 (C.D. Cal.) as

related. Paper 4, 1. Petitioner additionally identifies *2BCom, LLC v. Walmart Inc.*, No. 8:22-cv-400 (M.D. Fla.) as related. Paper 63, 1.

C. The '210 Patent

The '210 patent describes communications among wireless communications apparatuses. Ex. 1001, code (57), 1:14–20, 2:20–24. Generally, according to the embodiments described, a wireless communication apparatus, upon establishing connection with another apparatus, automatically changes how it responds to requests from any additional apparatuses so that no additional connections are established. *Id.* at code (57), 1:14–20, 2:20–50, 9:27–38. Figure 2, reproduced below, is a functional block diagram of one wireless communication apparatus, a notebook computer. *Id.* at 3:4–6, 3:36–4:13.

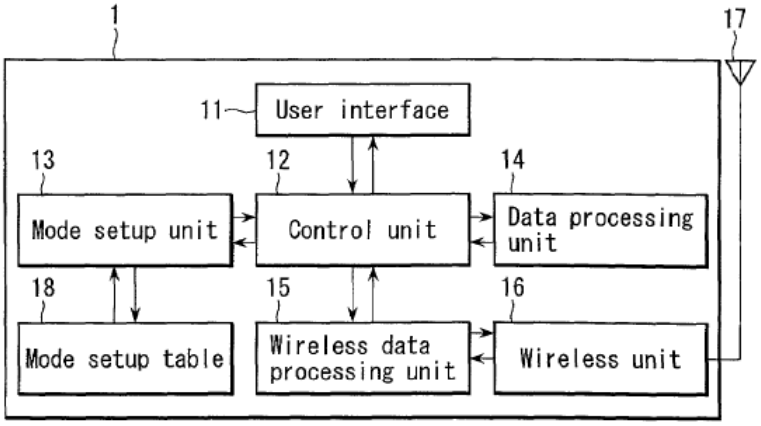

FIG. 2

Figure 2 shows notebook computer 1 that includes user interface 11 and antenna 17 that transmits and receives radio waves from and to other wireless communication apparatuses. *Id.* at 3:42–45, 3:62–4:4. Notebook computer 1 also includes mode setup unit 13 that receives control data from control unit 12. *Id.* at 3:58–61. Mode setup unit 13 shifts the notebook computer to different connection modes that control certain responses of

notebook computer 1 to communication requests from external devices. *Id.* at 3:58–61, 6:3–49.

Specifically, the connection modes affect notebook computer 1's responses to two kinds of request messages received from other wireless devices: inquiries and paging signals. *Id.* at 4:5–5:9, 4:14–41. An inquiry is a signal sent from a wireless communication apparatus ("apparatus A") to check for the presence of other wireless communication apparatuses in the area. *Id.* at 4:49–58, Figs. 4–6 (element SA1). Upon receiving an inquiry sent from an apparatus A, a second wireless communication apparatus ("apparatus B") can reply by sending inquiry response data, including its unique address, to apparatus A. *Id.* at 5:59–6:19, Figs. 4–6 (elements SB1, SB2). That unique address of apparatus B can then be used by apparatus A to connect with the apparatus B; this process involves apparatus A sending a paging signal to apparatus B. *Id.* at 5:20–29, Figs. 4–6 (element SA3). Apparatus B can then send a page response, and after authentication (if necessary) a connection is established. *Id.* at 5:30–5:66, Figs. 4–6 (elements SB4, SA4, SA5, SB5, SA6, SB6, SA7, SB7).

According to the invention, upon establishing such a connection the mode of an apparatus may be changed: "[w]hen the mode setup unit 13 receives control data representing the completion of connection with another wireless communication apparatus, the mode setup unit 13 automatically changes setups for an inquiry or paging from still another wireless communication apparatus." *Id.* at 4:5–9. Mode setup unit 13 does this by consulting mode setup table 18, which describes the mode to be selected upon connection establishment with specific addresses associated with external wireless devices. *Id.* at 4:10–19, Fig. 3. For example, mode setup table 18 may specify that, for notebook computer 1, "when connection with

a device corresponding to unique address A is established, this means that the mode changes to non-connectable mode 1. When connection with a device corresponding to unique address B is established, this means that the mode changes to a non-discoverable mode." *Id.* "The non-connectable mode and non-discoverable mode are defined by the Bluetooth standard." *Id.* at 4:20–21.

In a first non-connectable mode, the device does not respond to a page signal received from another wireless device. *Id.* at 4:31–34; 8:5–9:9. In a second non-connectable mode, the device responds to a page signal by sending a page denial. *Id.* at 4:31–34; 6:62–8:3. In non-discoverable mode, the device does not respond to an inquiry signal received from another wireless device. *Id.* at 4:26–30; 6:24–60. A device may be in both a non-connectable and a non-discoverable mode at the same time. *Id.* at 9:12–14.

D. Illustrative Claims

The Petition challenges independent claims 12, 20, and 21, and dependent claims 13–17 and 19, which depend directly or indirectly from claim 12. Claims 12 and 20 illustrate the challenged claims at issue, and are reproduced below with reference numbers and phrases added in brackets:

> 12. A communication method in a wireless communication apparatus, comprising:
>
> [12.1] setting up a first mode where the wireless communication apparatus is connectable with at least a first wireless communication device and a second wireless communication device and accepts a connection request from the first wireless communication device;
>
> [12.2] establishing a connection with the first wireless communication device;
>
> [12.3] discovering a completion of the connection with the wireless communication apparatus;

[12.4] setting up a second mode where, in a state where the connection with the first wireless communication device is established, the wireless communication apparatus is inhibited from establishing a connection with the second wireless communication device with respect to a connection request from the second wireless communication device; and

[12.5] shifting from the first mode to the second mode after the completion of the connection.

Ex. 1001, 10:53–11:6.

20. A communication apparatus comprising:

["the first 'unit configured to' limitation"] a unit configured to establish a connection with a first wireless communication apparatus in a first mode; and

["the second 'unit configured to' limitation"] a unit configured to control a connection from a second wireless communication apparatus when the connection with the first wireless communication apparatus is established, wherein the control unit sets up a second mode in which, in a state where the connection with the first wireless communication device is established, the communication apparatus is inhibited from establishing a connection with the second wireless communication apparatus with respect to a connection request from the second wireless communication device.

Ex. 1001, 12:1–13.

E. Prior Art and Instituted Grounds

We instituted *inter partes* review of claims 12–17 and 19–21 of the '210 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
12, 13, 15, 17, 20, 21	103[2]	Bluetooth Profiles[3], Nüsser[4]
12, 14, 16, 19–21	103	Bluetooth Profiles, Cooper,[5] Nüsser

F. Level of Ordinary Skill in the Art

Relying on the testimony of Dr. Madisetti, Petitioner contends that a person of ordinary skill in the art ("POSITA") "at the priority date of the '210 Patent would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a related subject, and one to two years of work experience in wireless communications." Pet. 14 (citing Ex. 1003 ¶¶ 48–52). "Less experience is necessary with additional education (e.g., a Master's degree), and likewise, less education is necessary with additional work experience (e.g., 5–6 years)." *Id.* Patent Owner does not propose a level of ordinary skill or comment on Petitioner's proposal.

We adopt Petitioner's proposed level of ordinary skill in the art, which comports with the teachings of the '210 patent and the asserted prior art.

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[2] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. The '210 patent was filed before March 16, 2013 (the effective date of the relevant amendment), so the pre-AIA version of § 103 applies.

[3] Specification of the Bluetooth System, Profiles v1.0B (Dec. 1, 1999) (Ex. 1007) ("Bluetooth Profiles").

[4] R. Nüsser and R. M. Pelz, "Bluetooth-based Wireless Connectivity in an Automotive Environment," *Vehicular Technology Conference Fall 2000. IEEE VTS Fall VTC2000. 52nd Vehicular Technology Conference*, vol. 4, pp. 1935–42 (Ex. 1006) ("Nüsser").

[5] Cooper, U.S. 2002/0123325 A1, pub. Sept. 5, 2002 (Ex. 1008) ("Cooper").

II. ANALYSIS

In the Petition, Petitioner presented arguments regarding the unpatentability of the challenged claims, including claim construction arguments (Pet. 15–31), a discussion of the propriety of the proposed combinations of the references (Pet. 38–42, 74–76) and the unpatentability of the claims in light of those proposed combinations (Pet. 43–73, 77–87). In the Decision on Institution, we determined that Petitioner had established a reasonable likelihood that it would prevail in showing the unpatentability of the challenged claims over the asserted prior art. Dec. on Inst. 9–39. This included a determination that, for purposes of institution and in accordance with the Board's precedential decision in *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential) ("*Hulu*"), Petitioner had established a reasonable likelihood that Bluetooth Profiles and Nüsser each qualify as prior art printed publications. Dec. on Inst. 19–23.

In its Response and Sur-reply, Patent Owner argues that Petitioner has not shown by a preponderance of the evidence that Nüsser is prior art to the '210 patent. PO Resp. 2–17; PO Sur-reply 1–14. In these papers, Patent Owner also argues that Petitioner has not shown by a preponderance of the evidence that Bluetooth Profiles is prior art to the '210 patent. PO Resp. 17–25; PO Sur-reply 14–20. We determine that Petitioner has shown by a preponderance of the evidence that each reference is a printed publication that is prior art to the '210 patent, and that the challenged claims are unpatentable on the instituted grounds.

A. Legal Standards

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is

unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (noting that 35 U.S.C. § 312(a)(3) requires *inter partes* review petitions to identify "with particularity … the evidence that supports the grounds for the challenge to each claim"). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burdens of proof in *inter partes* review).

The standard of proof for a final decision is whether the petitioner has met "the burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e).

In an *inter partes* review, a petitioner "may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications." 35 U.S.C. § 311(b). As discussed *supra* at note 2, we apply the pre-AIA versions of the relevant statutes.

Pre-AIA section 102(a) provides that a person is entitled to a patent unless the invention was known or used by others before the invention by the applicant for a patent. 35 U.S.C. § 102(a) (2006) (pre-AIA amendments). Pre-AIA section 102(b) provides that a person shall be entitled to a patent unless the invention was described in a printed publication more than one year prior to the date of application for patent in the United States. 35 U.S.C. § 102(b) (2006); *GoPro, Inc. v. Contour IP Holding LLC*, 908 F.3d 690, 693 (Fed. Cir. 2018); *In re Corcoran*, 640 F.2d 1331, 1333 (CCPA 1981); MPEP 2133. The "statutory bar" date, or critical date, of one year prior to the date of the United States application set forth in

pre-AIA 102(b) is not overcome or extended by a foreign priority claim. *In re Foster*, 343 F.2d 980, 986 (CCPA 1965); MPEP 2133.02 II.

35 U.S.C. § 103(a) renders a claim unpatentable 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. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). Tribunals resolve obviousness on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations.[6] *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

The determination of whether a document is a "printed publication" under 35 U.S.C. § 102 "involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public." *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). "Because there are many ways in which a reference may be disseminated to the interested public, 'public accessibility' has been called the touchstone in determining whether a reference constitutes a 'printed publication.'" *Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1355 (Fed. Cir. 2018) (quoting *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986)). A reference is

[6] The record does not include any evidence or argument regarding secondary considerations.

considered publicly accessible if it was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.'" *Id.* at 1355–56 (quoting *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981)); *see also Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018).

B. Priority Date

The U.S. application that issued as the '210 patent was filed on March 14, 2002, and it claims priority to a Japanese patent application filed on September 20, 2001. Ex. 1001, codes (22), (30). Petitioner puts forth arguments and testimony relating to both dates. Pet. 3, 5–8, 24, 27; Ex. 1010 ¶¶ 24, 49–51; Ex. 1003 ¶¶ 53–55. As discussed below, Petitioner establishes that its references qualify as prior art relative to both the September 20, 2001, filing date of the Japanese application and the March 14, 2002, filing date of the U.S. application.

C. Nüsser as a Prior Art Printed Publication

1. Petitioner's Arguments

Petitioner contends that "library records show that *Nüsser* was available digitally through the Auraria Library at the University of Colorado - Denver by June 23, 2000." Pet. 6 (citing Ex. 1010 ¶¶ 45–50). In support of this contention, Petitioner relies on a declaration of Dr. Hall-Ellis, a professor in the field of library sciences. Dr. Hall-Ellis attaches to her declaration and references in that declaration an Attachment B1, which is a Machine-Readable Cataloging ("MARC") record for an alleged digital version of the proceedings of the 2000 IEEE (Institute of Electrical and Electronics Engineers) 52nd Vehicular Technology Conference. Ex. 1010 ¶¶ 45–46, Attachment B1. Dr. Hall-Ellis testifies she retrieved the Nüsser reference from this digital version of the proceedings. *Id.* Dr. Hall-Ellis

asserts that this MARC record shows that the digital version was catalogued in the library on June 23, 2000, and "[t]herefore, this volume would have been available to users in the Auraria Library" on that date. *Id.* ¶ 47. In support of this, Dr. Hall-Ellis cites field 008 of the Attachment B1 MARC record, which contains the date code for June 23, 2000. *Id.* ¶ 47, Attachment B1. Elsewhere in her declaration, Dr. Hall-Ellis explains that this field contains the date of creation of a MARC record, which "reflects the date on which, or shortly after which, a work was first acquired and cataloged by the library that created the original MARC record." *Id.* ¶ 37.

Petitioner in its Reply makes a different assertion with respect to Dr. Hall-Ellis's testimony: "Nüsser was available in digital format in the Auraria Library on *or shortly after* June 23, 2000." Pet. Reply 10–13 (emphasis added). Petitioner argues that Dr. Hall-Ellis's testimony that Nüsser was available in a digital version of proceedings in the Auraria Library on or "shortly after" June 23, 2000 is credible and consistent with an announced due date of July 10, 2000 for the submission of papers for the conference. *Id.* at 13 (citing Ex. 1010 ¶¶ 37–40, 47, 49; PO Resp. 4; Ex. 2019, 2).

Petitioner additionally argues that Nüsser was indexed by subject matter in the Auraria Library. Pet. 6 (citing Ex. 1010 ¶¶ 49–50). To show this, Dr. Hall-Ellis relies solely on a different MARC record, attached as Attachment B2 to her initial declaration. Ex. 1010 ¶¶ 48–50, Attachment B2. Dr. Hall-Ellis obtained this MARC record from a different source (the OCLC (Online Computer Library Center)) and describes it as "the MARC record for the monographic serial of the proceedings volumes for the annual Fall and Spring conferences." *Id.* ¶ 48, Attachment B2. Dr. Hall-Ellis describes serial publications as "those publications that have the same

collective title but are intended to be continued indefinitely with enumeration such as a volume or issue number." *Id.* ¶ 42. Dr. Hall-Ellis declares, based on certain fields in the Attachment B2 MARC record, that this MARC record was created on August 15, 1996, and continues to be updated, with the last update prior to her retrieval of the MARC record occurring on November 26, 2018. *Id.* ¶ 48.

With respect to questions raised by Patent Owner about Attachment B2 to Dr. Hall-Ellis's first declaration, Petitioner argues that that MARC record relates to an entire serial publication over many years, and that "when an individual issue of a serial subscription was received by a library, it would be 'verified as part of a subscription, checked in, and stamped or labeled with the institution's name and the date'" and "it is highly unusual for a library to stop collecting and shelving a serial publication prior to the end of its publication run," in which event the library would fill an end date into the MARC record. Pet. Reply 6–7 (quoting Ex. 1010 ¶¶ 42, 43; citing *id.* ¶¶ 42–44, 48–50). Petitioner argues that "given the semi-annual nature of the publication," Nüsser "would have been received and made available in the regular course of conduct" soon after it was published. *Id.* at 7–8 (citing Ex. 1010 ¶¶ 28, 48, Attachment B2 (field 310)). Petitioner asserts that "either semi-annual publication in 2000 would have pre-dated the priority date, as would the first semi-annual publication in 2001." *Id.*

In response to Patent Owner's criticism that Dr. Hall-Ellis did not confirm whether the serial publication of Attachment B2 was available in any of the 83 libraries mentioned in Attachment B2, Dr. Hall-Ellis, in a second declaration, provides a new MARC record from one of these libraries, the University of California – Berkeley, for a print version of the

relevant volume of the proceedings. *Id.* at 8 (citing Ex. 1010 ¶ 48, Attachment B2; Ex. 2024, 47:19–50:24; Ex. 1037 ¶ 22, Attachment E). As such, Petitioner contends that "the library at the University of California – Berkeley would have received a print copy of *Nüsser* in regular course." *Id.* (citing Ex. 1010 ¶¶ 42–44).

Regarding MARC records generally, Dr. Hall-Ellis testifies that a 050 field contains a Library of Congress call number, which may be used to show information regarding a subject matter classification. Ex. 1010 ¶ 32. Dr. Hall-Ellis also explains that a 082 field may be the subject matter classification consistent with the Dewey Decimal classification system. *Id.* Dr. Hall-Ellis further testifies that fields numbered "6XX" are "Subject Access Fields" and that the 650 field is the "Subject Added Entry – Topical Term" field. *Id.* ¶ 31. Dr. Hall-Ellis declares that these fields in the MARC record of Attachment B2 show that the record included subject matter classifications consistent with the Library of Congress and Dewey Decimal classification systems. *Id.* ¶ 49 & nn.13, 14, Attachment B2. Dr. Hall-Ellis testifies that the Library of Congress field indicates the classification as "Electrical engineering. Electronics. Nuclear engineering—Radio—Special applications of radio, A-Z—Mobile communication systems" and that the Dewey Decimal classification indicates a classification as "Technology – Engineering – Applied physics – Electrical, magnetic, optical, communications, computer engineering, electronics, lighting – Electronics, communications engineering – Specific communications systems – Radio and radar – Radio – Radiotelephony – Periodicals." *Id.* Additionally, Dr. Hall-Ellis describes the 650 fields as including five entries describing the subject matter of the proceedings volumes that are referenced by the Attachment B2 MARC record: "Mobile communication systems $v

Congresses," "Motor vehicles $x Electronic equipment $v Congresses," "Motor vehicles $x Electric equipment $v Congresses," "Electronics in transportation $v Congresses," and "Artificial satellites in telecommunication $v Congresses." *Id.* ¶ 49.

Dr. Hall-Ellis concludes that "[i]n view of the above, the IEEE Vehicular Technology Conference Proceedings was publicly available on June 23, 2000, and in any event, before the alleged September 20, 2001, priority date, because by that date it had been received, cataloged, and indexed in the Auraria Library at the University of Colorado – Denver and made part of the OCLC bibliographic database." *Id.* ¶ 50 (emphasis omitted).

In addition to arguments based on Dr. Hall-Ellis's declaration, Petitioner argues that "the date printed on *Nüsser* itself (September 2000) provides additional evidence of its public accessibility." Pet. 6; Pet. Reply 3–4 (citing Nüsser's cover, which includes the date range "September 20–24, 2000" in two places). Petitioner cites these indicia as well as Mr. MacPherson's declaration that these indicia relate to the date that the conference proceedings were made available. Pet. Reply 4 (citing Ex. 1036 ¶¶ 10–11).

Petitioner also cites Dr. Madisetti's declaration that "a person of ordinary skill in the art ('POSITA') in the relevant time frame would have frequently reviewed IEEE publications and attended IEEE conferences for information on relevant technologies." Pet. 6 (citing Ex. 1003 ¶ 53); Pet. Reply 4 (citing Ex. 1003 ¶ 53).

Petitioner additionally relies on the copyright registration for the proceedings, which shows a publication date of September 24, 2000. Pet. Reply 4–5 (citing Ex. 1010 ¶ 50; Attachment B8).

2. Patent Owner's Arguments

Patent Owner disputes Petitioner's contentions about Nüsser's public accessibility. PO Resp. 2–17. Patent Owner argues that Dr. Hall-Ellis did not provide credible testimony regarding Attachment B1, the MARC record for the digital version of Nüsser, which is Exhibit 1006. *Id.* at 2–7; PO Sur-reply 7–10. In particular, Patent Owner highlights certain facts that allegedly undermine Petitioner's showing regarding public accessibility of a digital version. For example, Patent Owner notes that the final papers for the conference where Nüsser was allegedly published were not due until July 10, 2000, which is after the June 23, 2000 date (cited by Dr. Hall-Ellis) by which the digital conference proceedings were allegedly cataloged and available in the Auraria Library. PO Resp. at 3–4 (citing Ex. 2019). Patent Owner also argues that the Auraria Library did not create the MARC record for the alleged digital version of the conference proceedings, which undermines Dr. Hall-Ellis's testimony that the record creation date indicates public availability. *Id.* at 4–5. Patent Owner additionally argues that the various scholarly papers that cite Nüsser all post-date the critical date. *Id.* at 6 (citing Ex. 2014).

Patent Owner additionally argues that Dr. Hall-Ellis's testimony regarding Attachment B2 is flawed, including because the Attachment B2 MARC record was created much earlier than any possible date for Nüsser and continued to be updated afterwards, and because the record has not been shown to be for a reference that includes the Nüsser reference supplied as Exhibit 1006. *Id.* at 7–9. Patent Owner also criticizes Dr. Hall-Ellis's testimony because she did not confirm when or whether Nüsser was made publicly available in any of the 83 libraries that allegedly hold the serial publication of Attachment B2. *Id.* Patent Owner additionally contends that

the subject matter classifications relied on by Petitioner would not have allowed one of ordinary skill to locate Nüsser. *Id.* at 9–13. Patent Owner also argues that the testimony regarding the digital availability of Nüsser from the Auraria Library is contradicted by certain testimony with respect to IEEE Xplore. PO Sur-reply 7–10.

Patent Owner argues that the copyright information and other indicia on the face of Nüsser do not establish the date of public accessibility. PO Resp. 15–16, 19; PO Sur-reply 1–2, 5. Patent Owner additionally argues that Mr. MacPherson's declaration does not establish that he worked for IEEE at the time of the 52nd Vehicular Technology Conference or attended that conference, and thus, the testimony should be given little weight. PO Sur-reply 2–4.[7] Patent Owner argues that Dr. Madisetti's testimony is conclusory and incorrect. *Id.* at 4–5.

With respect to the subject matter headings in the Attachment B2 MARC record, Patent Owner argues that these headings would yield "an enormous number" of search results, and "would be useless to uncovering *Nüsser* with reasonable diligence." PO Sur-reply 10–11; PO Resp. 9–13. Additionally, Patent Owner argues that the subject matter headings may not have been present in the MARC record until recently, and thus may not have been entered at the critical date. PO Resp. 13.

3. Analysis and Determination

Upon an "inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public" (*Klopfenstein*, 380 F.3d at 1350), we determine that Petitioner has shown by a preponderance of the

[7] Patent Owner makes additional arguments regarding the admissibility of Mr. MacPherson's declaration, which we address below in the discussion of Patent Owner's Motion to Exclude. *Infra* § III.B.5.

evidence that Nüsser was publicly accessible before the priority date, and, therefore qualifies as prior art under 35 U.S.C. § 102(b).

While not dispositive, Nüsser bears multiple conventional indicia of publication such as a date and indicia of publication by an established publisher (IEEE) which support a finding of public accessibility. Ex. 1006, 1 (cited at Pet. 1 and Pet. Reply 3); *id.* at 2, 15 (cited at Pet. Reply 3); *see Nobel Biocare Services AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1376 (Fed. Cir. 2018) ("[a]lthough the [reference]'s date is not dispositive of the date of public accessibility, its date is relevant evidence"); *see also VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1065 (Fed. Cir. 2020) ("When there is an established publisher there is a presumption of public accessibility as of the publication date.").

Additional evidence of the public accessibility of Nüsser confirms this. For example, the copyright registration confirms these dates. Ex. 1010, ¶ 50, Attachment B8. Mr. MacPherson testifies that Nüsser "shows the date of publication," that Nüsser was part of the proceedings of the 52nd Vehicular Technology Conference, held from September 24 to September 28, 2000, and that "[c]opies of the conference proceedings were made available no later than the last day of the conference." Ex. 1036 ¶¶ 8, 10, 11, Ex. A. The version of Nüsser Mr. MacPherson attaches to his declaration, retrieved from IEEE Explore, is identical to the version that Dr. Hall-Ellis attaches to her first declaration, which is Exhibit 1006. *Id.* at ¶¶ 8–11, Ex. A; Ex. 1010 ¶ 45; Ex. 1006; *see also Valve Corp. v. Ironburg Inventions Ltd.*, 8 F.4th 1364, 1371–72 (Fed. Cir. 2021) (discussing the Board's obligation to compare different versions of a reference in the record when determining whether the reference qualifies as prior art). Thus, as discussed in our Decision on Rehearing that is being issued

contemporaneously with this revised Final Written Decision, we agree with Petitioner that Mr. MacPherson's testimony about the availability of the proceedings is relevant to our determination regarding the evidence as a whole relating to the public accessibility of Nüsser. *See* Reh'g Req. 13–15.

Patent Owner cites a prior non-designated opinion of the Board that a similar declaration was not found to support public accessibility of an IEEE publication. PO Sur-reply 4 (citing *Smart Microwave Sensors GmbH v. Wavetronix LLC*, IPR2016-00488, Paper 57 (Final Written Decision), 27–28 (PTAB July 17, 2017)). However, that decision is not binding upon us, and we note that other panels have credited such declarations as part of their consideration of the totality of the evidence. *See, e.g.*, *Intel Corp. v. PACT XPP Schweiz AG*, IPR2020-00528, Paper 39 (Final Written Decision), 13–14, 17 (PTAB Aug. 9, 2021); *Intel Corp. v. Hera Wireless S.A.*, IPR2018-01543, Paper 36 (Final Written Decision), 14–15 (PTAB Mar. 12, 2020); *Sierra Wireless, Inc. v. Koninklijke KPN N.V.*, IPR2018-00320, Paper 42 (Final Written Decision), 14–15 (PTAB Apr. 30, 2019); *Intel Corp. v. R2 Semiconductor, Inc.*, IPR2017-00705, Paper 86 (Final Written Decision), 31 (PTAB July 31, 2018); *Activision Blizzard, Inc. v. Acceleration Bay, LLC*, IPR2015-01996, Paper 101 (Final Written Decision), 67–69 (PTAB Mar. 29, 2017).

While Patent Owner brings up valid concerns about Dr. Hall-Ellis's testimony regarding the indexing of Nüsser, we are mindful that "indexing is not 'a necessary condition for a reference to be publicly accessible'; it is but one among many factors that may bear on public accessibility." *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012) (citing *In re Lister*, 583 F.3d 1307, 1312 (Fed. Cir. 2009)). Thus, "while often relevant to public accessibility, evidence of indexing is not an

absolute prerequisite to establishing online references . . . as printed publications within the prior art." *Id.* Dr. Madisetti provides unrebutted testimony that "IEEE is (and has been since well before September 2001) a well-known technical professional organization" and that one of ordinary skill in the relevant time frame "would have frequently reviewed IEEE publications and attended IEEE conferences for information on relevant technologies, such as Bluetooth." Ex. 1003 ¶ 53. Additionally, our reviewing court has stated that, for a reference that has been published by an established publisher, there is a presumption of public accessibility as of the publication date. *VidStream*, 981 F.3d at 1065–66. Here, we determine that this presumption applies.

In our consideration of the totality of the evidence presented, we note that we do not agree that Dr. Hall-Ellis's testimony establishes Nüsser's availability on or "shortly after" June 23, 2000. The testimony regarding the MARC records does not confirm what was included in those records at crucial times, and while it may be that MARC records are created before the publications to which they refer, we do not have adequate testimony or evidence to ascertain that Nüsser was made available in the Auraria Library at any specific date, or that that indexing of Nüsser at any specific date through the Auraria Library would have allowed persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence could locate it.

Even so, upon an "inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public" (*Klopfenstein*, 380 F.3d at 1350), and for the reasons discussed above, we determine that Petitioner has shown by a preponderance of the evidence that Nüsser is a prior art printed publication as of September 28, 2000.

D. Bluetooth Profiles as a Prior Art Printed Publication

1. Petitioner's Arguments

Petitioner asserts that "Bluetooth Profiles was available by December 1, 1999 on the Bluetooth.com website." Pet. 6. In support of this assertion, Petitioner cites the declaration of Dr. Hall-Ellis, who testifies that the document was found within the custody of the issuing organization, and submits a webpage screenshot from the Internet Archive (archive.org) from May 17, 2000 of an archived version of a bluetooth.com webpage indicating that "1999-12-06 Bluetooth Specification V 1.0 B is now published on the Bluetooth.com website."[8] Ex. 1010, 522 (Attachment C2); Pet. 6; Ex. 1010 ¶ 51. Petitioner additionally asserts that "numerous other U.S. patents filed prior to the '210 patent" and "[a]rticles, papers, and at least one textbook" published before the priority date "discussed the Bluetooth standard, referred to the December 1999 Bluetooth specification, and/or directed POSITAs to the Bluetooth website." Pet. 6–7 (citing Ex. 1003 ¶¶ 54–55; Exs. 1012, 1015–1018,[9] 1023–1028); Pet. Reply 18–21 (citing Exs. 1012, 1015–1018, 1023–1028, 2008).

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[8] Bluetooth Profiles is the second volume of a two-volume set that is the Specification of the Bluetooth System (a/k/a "Bluetooth Specification"). Ex. 1007, 1, 4 et. seq. (header); Ex. 1010 ¶ 50.

[9] We grant Patent Owner's Motion to Exclude with respect to Exhibit 1017, *see infra* Section III.B.5. We reference this exhibit in this discussion to make certain of the parties' arguments understandable, but do not use it in arriving at any legal or factual determination. Additionally, we find Exhibits 1018 and 1023–1028 to be properly relied upon by Dr. Madisetti in his expert testimony and Exhibit 1018 to be properly relied upon by Dr. Hall-Ellis in her expert testimony, and we refer to these exhibits to make the parties' arguments understandable, relying on Dr. Madisetti's and Dr. Hall-Ellis's testimony and not the documents themselves in our conclusion. *See infra* § III.B.6.

Petitioner cites the declaration testimony of Dr. Madisetti, Petitioner's declarant regarding technology and patentability, that "a POSITA in the field of wireless communications would have been aware of Bluetooth as a world-wide standard that promoted interoperability," and would have accessed the Bluetooth website to stay updated on Bluetooth developments. Pet. 7–8 (citing Ex. 1003 ¶¶ 54–56); Pet. Reply 22–23 (citing Ex. 1003 ¶¶ 54–56). Petitioner further argues that "[p]ublications from the relevant time period confirmed the prominence of Bluetooth and referred interested POSITAs to the Bluetooth website." Pet. 8 (citing Ex. 1011, 27; Ex. 1018, 346; Ex. 1003 ¶¶ 54–55).

Petitioner additionally argues that the document itself notes a date of December 1, 1999 and self-referentially that "[t]his specification can also be found on the Bluetooth web site: http://www.bluetooth.com." Pet. Reply 18 (quoting Ex. 1007, 4; citing Ex. 1007, 1, 415–420) (alteration in original). These are indicia, Petitioner argues, that should be considered as part of the totality of the evidence. *Id.* (quoting *Hulu* at 17–18).

Petitioner argues that this is confirmed by a textbook describing the accessibility of Bluetooth Profiles in December 1999, as part of the release of version 1.0b of the Bluetooth specification. *Id.* at 23 (citing Ex. 1041, 22).

2. Patent Owner's Arguments

Patent Owner argues that Dr. Hall-Ellis's testimony suggests that a MARC record for a print version of Bluetooth Profiles was not created before November 6, 2001, and that only a single library cataloged this print version. PO Resp. 18–19 (citing Ex. 1010 ¶¶ 51–52; Ex. 2024, 56:19–57:1, 62:3–19); PO Sur-reply 19–20. Patent Owner argues that the online source for Bluetooth Profiles "has a copyright date of 2002." PO Resp. 18–19.

Patent Owner asserts that Dr. Madisetti's testimony regarding the status of Bluetooth "as a world-wide standard" and that one of ordinary skill would have accessed the Bluetooth website is conclusory. *Id.* at 18–19. Similar to its arguments with respect to Nüsser, Patent Owner argues that the indicia on Bluetooth Profiles are entitled to little weight. *Id.* at 19–20.

Patent Owner argues that the Bluetooth.com website included a member login area and did not include a link to obtain the Bluetooth Profiles document. *Id.* at 20 (citing Ex. 1010, Attachment C2); PO Sur-reply 18. Patent Owner states as "fact" that "the standard was hidden behind a member's login." PO Sur-reply 18–19.

Patent Owner argues that the patent documents cited by Petitioner do not show availability of Bluetooth Profiles merely by referencing Bluetooth Profiles within their written descriptions. PO Resp. 20 (citing Exs. 1012, 1015, 1016, 1017); PO Sur-reply 15–16. Patent Owner emphasizes its assertion that "*Bluetooth Profiles* was ***not disclosed or cited*** during prosecution of any of those patents." PO Resp. 20. Patent Owner also argues that, with the exception of Exhibit 1017, these patent documents do not expressly state that Bluetooth Profiles is available from the Bluetooth website. PO Sur-reply 15. Additionally, with respect to Exhibit 1017, Patent Owner argues that this patent's filing date is after the priority date, and the provisional application did not make a disclosure regarding Bluetooth Profiles. *Id.*; PO Resp. 20 (citing Ex. 1017; Ex. 2008).

With respect to the non-patent literature, Patent Owner argues that "the evidence shows most of the articles were authored by persons likely to have pre-publication access to the Bluetooth specification" and otherwise does not show when Bluetooth Profiles was publicly available. PO Resp. 21–24 (citing Dec. on Inst.; Exs. 1018, 1023–1027). Thus, Patent Owner

concludes that "it is clear that a small group of authors with pre-publication access to the Bluetooth specification were writing about it in or around 2000." *Id.* at 24; PO Sur-reply 16. Patent Owner also asserts that the corrected version of Exhibit 1023, which indicates a date of 1998, "proves" that the author had pre-publication access. PO Sur-reply 16–17.

Additionally, with respect to Exhibit 1018, Patent Owner asserts that the use of "Bluetooth," an Ericsson trademark, and the "glowing recitation" of Ericsson's contributions to Bluetooth "suggests that the book's author collaborated with Ericsson in connection with the monograph" and "was most likely granted pre-public access to documents from the specification." PO Resp. 25; PO Sur-reply 16, 18. Patent Owner notes that Exhibit 1041, introduced by Petitioner, states that that promoter-level members of the Bluetooth SIG are granted pre-publication access to the specification. PO Sur-reply 17–18 (citing Ex. 1041, 18). Patent Owner argues that this confirms that the authors of Exhibits 1023–1028, affiliated with such companies, must have had such early access. *Id.*

3. Analysis and Determination

We determine that Petitioner has shown by a preponderance of the evidence that Bluetooth Profiles was publicly accessible as of December 1999, which is before the priority date, and, therefore qualifies as prior art under 35 U.S.C. § 102(b).

We begin with the indicia of publication on the reference itself, while still remaining aware that such dates are not dispositive, but merely relevant evidence that may support a finding of public accessibility. *See Nobel Biocare*, 903 F.3d at 1376. Bluetooth Profiles bears, on its cover, the date "December 1st 1999" and includes that date on other pages within the document; one page includes a copyright notice with a date of 1999.

Ex. 1007, 1, 4, 415–420. Patent Owner itself does not appear to contest that "*Bluetooth Profiles* is associated with a 1999 date," but only whether it was publicly available as of that date and "what that [1999] date actually is." PO Resp. 24.

Dr. Madisetti's testimony that Bluetooth technology was well-known at the relevant time, that Bluetooth had wide support in industry, and that many companies participated in the Bluetooth organization and adopted the technology is uncontroverted and supported by evidence. Ex. 1003 ¶¶ 54–55 (citing Ex. 1006, 15; Ex. 1012, 3:10–12; Ex. 1015, 8:8–18; Ex. 1016, 16:9–20; Ex. 1018, 14, 182 n.1, 343–346; Ex. 1023, 110, 111, 117; Ex. 1024, 1567 nn.1–2; Ex. 1025, 103 nn.1–2; Ex. 1026, 147–148 & n.1; Ex. 1027, 142 nn.1–2; Ex. 1028, 28, 36); Ex. 1011, 27. Dr. Hall-Ellis's testimony regarding the availability of Bluetooth Profiles by the critical date is also supported by evidence. Ex. 1010 ¶¶ 23, 51–52, 54–57 (citing Ex. 1010, Attachment C2,[10] C10; Ex. 1018).

Patent Owner argues that the evidence relied on only shows that "it is clear that a small group of authors with prepublication access to the Bluetooth specification were writing about it in or around 2000." PO Resp. 21–25. For example, Patent Owner argues that Exhibit 1026[11] was authored by an employee of a company that was a member of the Bluetooth

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[10] *See Valve Corp.*, 8 F.4th at 1374–75 (discussing judicial notice of archived webpages available through the Wayback Machine).

[11] As noted above (note 9), we consider Patent Owner's arguments that Exhibits 1018 and 1023–1028 are hearsay below and find that they were reasonably relied on by Dr. Madisetti and that Exhibit 1018 was reasonably relied on by Dr. Hall-Ellis. *See* § III.B.6. We discuss these exhibits here only with respect to our evaluation of the negative inferences drawn by Patent Owner from them regarding public availability of Bluetooth Profiles and the weight accorded to the testimony that relies on them.

consortium and that the text of Exhibit 1026 (among other cited articles) "indicates" that that employee had pre-public availability access and "nothing in [it] shows otherwise." *Id.* at 22–23 (citing Ex. 1026, 147). But Exhibit 1026 discusses Bluetooth and directs the reader to the Bluetooth specification "for further information." Ex. 1026, 147, 148 n.1. We do not agree that there is an indication in Exhibit 1026 that only pre-public availability access to Bluetooth Profiles was available.

With respect to excerpts from "Bluetooth Demystified," which describes the interoperability of different devices using Bluetooth technology (Ex. 1018, 14, 182), dates the release of the Bluetooth specification 1.0 to December 1999 (*id.* at 182 n.1), and directs readers to the Bluetooth website "to stay updated on the status of the Bluetooth specification" (*id.* at 346), Patent Owner's "suggest[ion]" that the book's author "was most likely" granted private access to the documents does not appear supported by any evidence. *See* PO Resp. 22–25. We do not detect in the documents, patents, and book selections cited, or in Bluetooth Profiles itself, any indication that the specification was restricted at any point after December of 1999. While Attachment C2 to Dr. Hall-Ellis's declaration (a May 17, 2000 Internet Archive capture of a Bluetooth.com webpage announcing the publication of Bluetooth 1.0B on the Bluetooth.com website) includes "MEMBERS LOGIN" name and password fields, there is no indication there or elsewhere in the evidence provided that a login would have been necessary to access the announced Bluetooth specification. Patent Owner's bald assertion as a "fact" that Bluetooth Profiles "was hidden behind a member's login" is also unsupported by any evidence. *See* PO Sur-reply 18–19.

Furthermore, we disagree with Patent Owner's characterization that Bluetooth Profiles was "not disclosed or cited" in certain patent documents put forth by Petitioner. PO Resp. 20–21; PO Sur-reply 15–16. Each patent in Exhibits 1012, 1015, 1016, and 1017[12] expressly references Bluetooth Profiles by name in its written description. Notwithstanding, Patent Owner asks us to draw negative inferences about the public accessibility of Bluetooth Profiles simply because Bluetooth Profiles does not appear in the "References Cited" portion of these patents. PO Resp. 20–21. Yet Patent Owner's argument places form over substance. Patent Owner cannot deny that Bluetooth Profiles is referenced in Exhibits 1012, 1015, and 1016, issued from patent applications filed before the critical date of the '210 patent, which tends to support that Bluetooth Profiles was accessible before the critical date. In addition, we decline to draw any inferences about public accessibility from the fact that Bluetooth Profiles was not formally cited during prosecution of those patents on, for example, an Information Disclosure Statement. We find that, absent any other evidence or testimony, the manner in which Bluetooth Profiles was introduced in these patent documents is not probative of public accessibility.

A preponderance of the evidence confirms the indicia on Bluetooth Profiles relating to Bluetooth Profiles' availability date and its availability to interested parties on the Bluetooth website. Dr. Madisetti's unrebutted testimony and supporting evidence supports a determination that Bluetooth was well-known, that Bluetooth had widespread support in the industry, and that many companies were involved with developing and adopting the

[12] As discussed *supra* note 9, we reference Exhibit 1017 in this discussion to make certain of the parties' arguments understandable, but do not use it in arriving at any legal or factual determination.

Bluetooth standard, and would have been aware of the Bluetooth specification documents. Ex. 1003 ¶¶ 54–55; *see M & K Holdings, Inc. v. Samsung Electronics Co., Ltd.*, 985 F.3d 1376, 1380 (describing a finding that a task force developing a standard was prominent in the relevant community).

Those interested in and ordinarily skilled in the art (including having "one to two years of work experience in wireless communications") would have been motivated to visit the Bluetooth website or otherwise obtain the Bluetooth specification, including Bluetooth Profiles, to ensure that the products they were developing would be interoperable with others using the Bluetooth Standard. Ex. 1003 ¶ 55; *see M & K Holdings, Inc.*, 985 F.3d at 1380 (describing a finding of a motivation to find a standard to ensure products and services would be consistent with that standard). A preponderance of the evidence shows that the Bluetooth website was promoted as a source for Bluetooth information including the standard before and at the time of the invention. Ex. 1003 ¶¶ 55–56; Ex. 1010 ¶¶ 23, 51–52, 54–57; Ex. 1011, 27; *see M & K Holdings, Inc.*, 985 F.3d at 1380 (describing a finding that skilled artisans would have learned of and tracked a standards website). Thus, we determine that the totality of the evidence shows that those of ordinary skill in the art would have been interested in obtaining copies of the Bluetooth Specification (including its second volume, Bluetooth Profiles, *see supra* note 8), would have looked at the Bluetooth website, and there would have found Bluetooth Profiles.

For these reasons, we determine that Petitioner has shown that Bluetooth Profiles was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or

art, exercising reasonable diligence, could have located it as the critical date for the '210 patent.

E. Unpatentability Arguments

1. Claim Construction

Claim 20 recites a communication apparatus comprising two units, each of which is described as "configured to" establish or control a connection. Ex. 1001, 12:1–13. Petitioner does not argue that the "unit configured to" limitations should be interpreted as a means-plus-function limitations according to 35 U.S.C. § 112 ¶ 6, but identifies function and corresponding structure in case we apply a means-plus-function interpretation. Pet. 15–31; *see* 37 C.F.R. § 42.104(b)(3). Patent Owner does not address whether means-plus-function treatment should apply to the "unit configured to" limitations of claim 20 or comment on Petitioner's proposed identification of the functions and corresponding structure.

"To determine whether § 112, para. 6 applies to a claim limitation, our precedent has long recognized the importance of the presence or absence of the word 'means.'" *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015). Our focus is on "whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *Id.* "[W]hen a claim term lacks the word 'means,' the presumption can be overcome and § 112, para. 6 will apply if . . . the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Id.* at 1349 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). "Generic terms such as 'mechanism,' 'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word 'means'

because they 'typically do not connote sufficiently definite structure' and therefore may invoke § 112, para. 6." *Id.* at 1350 (quoting *Mass. Inst. of Tech. & Elecs. for Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006)).

In our Decision on Institution, we determined preliminarily that 35 U.S.C. § 112 ¶ 6 applies to the "unit configured to" limitations in claim 20. Dec. on Inst. 9–18. Neither party has commented on this determination or provided any additional discussion of claim construction following the Decision on Institution. Upon consideration of the complete record at this concluding stage of the proceeding we maintain our determination that § 112 ¶ 6 applies to these limitations.

Specifically, the term "unit" in the "unit configured to" limitations is a nonce word that "connot[es] a generic 'black box' for performing" computer-implemented functions. *Williamson*, 792 F.3d at 1350. This is consistent with the detailed description of the '210 patent, which uses the term "unit" to describe functional blocks within a personal computer. Ex. 1001, 3:4–6, Fig. 2. Therefore, we determine that the presumption arising from the absence of the term "means" has been overcome, and we construe the two "unit configured to" limitations as means-plus-function limitations.

Next, we turn to the proper construction of the "unit configured to" limitations. The first step in construing a means-plus-function claim element is to identify the recited function in the claim limitation. *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003)). The second step is to look to the specification and identify the corresponding structure for that recited function. *Id.*

a) First "unit configured to" limitation

For the first "unit configured to" limitation of claim 20, Petitioner presents the following proposed function and structure (Pet. 20–23):

Limitation	Proposed Function	Proposed Structure
a unit configured to establish a connection with a first wireless communication apparatus in a first mode[13]	[with the communication apparatus of claim 20] in a first mode, establishing a connection with a wireless communication apparatus[14]	a processor (control unit 12) and two alternative algorithms: the algorithm corresponding to steps SB3 and SB4 in Figure 4 of the '210 patent, or the algorithm corresponding to steps SB3–SB6 in Figure 4 of the '210 patent[15]

Pet. 20–23.

(1) Function

With respect to the function, Petitioner argues that the term "in a first mode" refers to the mode of the communication apparatus being claimed (preamble of claim 20), rather than referring to a mode of the wireless communication apparatus with which a connection is being established. Pet. 20 n.7. We agree. Claim 20 later requires "a second mode in which . . . the communication apparatus is inhibited from establishing a connection with [a] second wireless communication apparatus." Ex. 1001, 12:7–12. We recognize that "[35 U.S.C. § 112, ¶ 6] does not permit limitation of a means-plus-function claim by adopting a function different from that

[13] Ex. 1001, 12:2–3.
[14] Pet. 20 & n.7 (citing Ex. 1003 ¶ 66).
[15] Pet. 20–23 (citing Ex. 1001 5:40–62, Fig. 4 (elements SB3, SB4, SB5, SB6); Ex. 1003 ¶¶ 67–71).

explicitly recited in the claim." *Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). Petitioner's proposal does not adopt a different function from that explicitly recited, but does clarify an ambiguity. We therefore determine that the recited function of the first "unit configured to" limitation is "with the communication apparatus in a first mode, establishing a connection with a first wireless communication apparatus."

(2) Structure

Petitioner argues that the function of this limitation is performed by control unit 12, which corresponds to a general purpose processor, as control unit 12 is described as "executing processing" according to data received. Pet. 16–17 (citing Ex. 1003 ¶¶ 61, 63; Ex. 1001, 3:30–41, 3:49–56, 4:35–41, 4:49–55, 5:7–29, Figs. 1–2). Petitioner argues that the corresponding structure for this limitation would be "more than simply a general purpose computer or microprocessor," but would include an algorithm for the claimed function. *Williamson v. Citrix Online, LLC*, 792 F.3d at 1352 (quoted at Pet. 16).

We agree that in this case the structure disclosed is control unit 12 and that algorithms disclosed in the specification are necessarily part of the corresponding structure. *See Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (in a computer-implemented invention, the structure must be more than simply a general purpose computer or microprocessor, but must be limited to the algorithm disclosed in the specification). Therefore, we identify control unit 12 (a processor) executing certain algorithms as the corresponding structure for the first "unit configured for" claim.

Next, we consider the particular algorithms executed by the corresponding structure. Petitioner's identified algorithms limit the claim to application to a communication apparatus that sends a page response, as opposed to the apparatus that transmitted the page. *See* Pet. 18–23. Petitioner provides two annotated versions of Figure 4, indicating the two algorithms performed by "[w]ireless communication apparatus B," the first of which is reproduced below. *Id.* at 18–19.

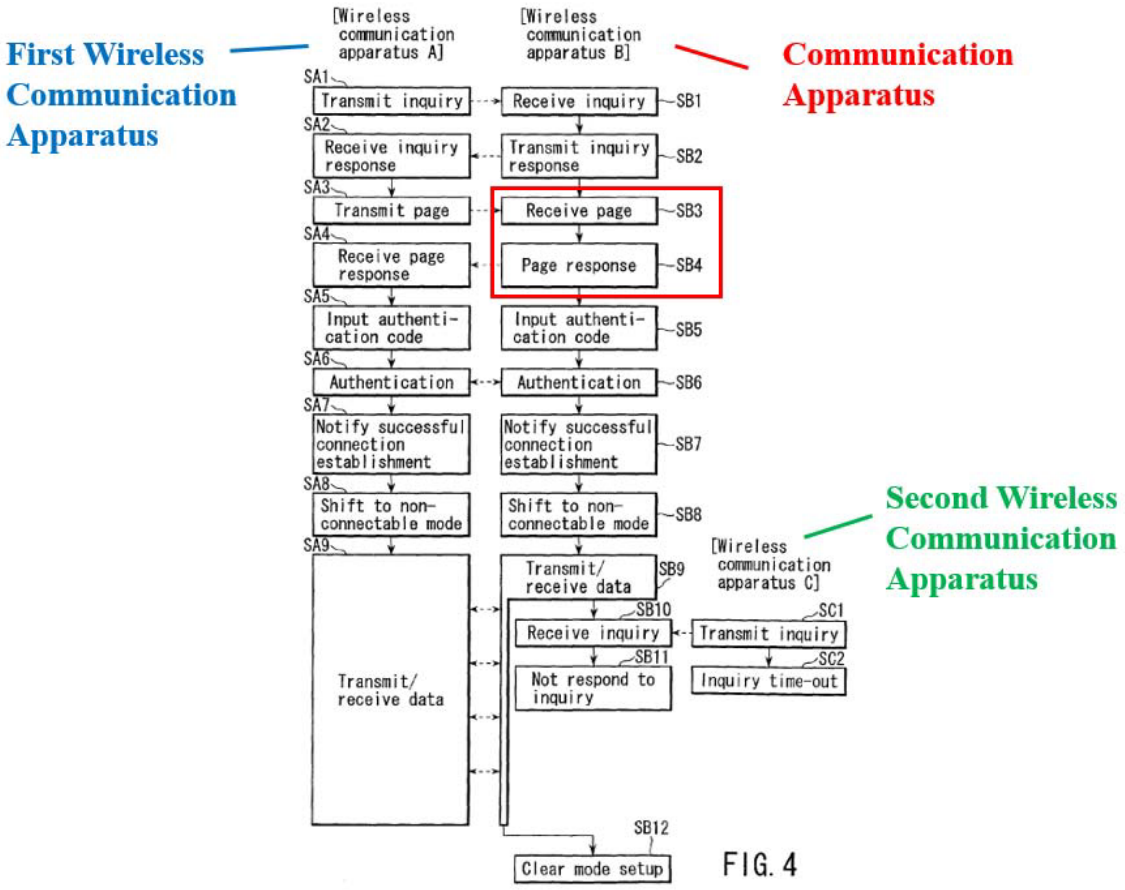

FIG. 4

Petitioner annotates this figure to show that steps SB3 and SB4 (outlined with a red box) are the steps by which wireless communication apparatus B establishes a connection with wireless communication apparatus A. Pet. 20–21 (citing, *inter alia*, Ex. 1001, 5:40–45). Petitioner provides a second figure in which steps SB5 and SB6 are also included with SB3 and

SB4 in a red box, indicating that these are described, in the alternative, as part of wireless communication apparatus B's establishing a connection with wireless communication apparatus A. *Id.* at 21–22 (citing Ex. 1001, 5:40–62).

We agree that the indicated steps disclose the apparatus B's steps in establishing a connection with the first apparatus. However, the '210 patent specifies that both apparatuses involved in newly establishing a connection may switch to a different mode when the connection is established. Ex. 1001, 7:3–14 (describing each of apparatus A and B shifting to non-discoverable mode). Therefore, we decline to adopt the requirement that the algorithm corresponding to the first unit is performed "after sending a page response" as urged by Petitioner with reference to wireless communication apparatus B in Figure 4. Pet. 20. Wireless communication apparatus A also establishes a connection (to apparatus B) and also is in a first mode (*see* step SA8 of Fig. 4, indicating a shift to a new mode).

For these reasons, we find the corresponding structure to be a processor such as control unit 12 executing the algorithms of (a) "establishing a connection after transmitting a page and receiving a page response, and equivalents thereof;" (b) "establishing a connection after receiving a page and transmitting a page response, and equivalents thereof;" (c) "establishing a connection after transmitting a page, receiving a page response, and performing optional authentication, and equivalents thereof;" or (d) "establishing a connection after receiving a page, transmitting a page response, and performing optional authentication, and equivalents thereof." Ex. 1001, 5:25–62, Fig. 4 (elements SA3, SA4, SA5, SA6, SB3, SB4, SB5, SB6); Ex. 1003 ¶¶ 67–71.

b) Second "unit configured to" limitation

For the second "unit configured to" limitation of claim 20, Petitioner presents the following proposed function and structure (Pet. 23–30):

Limitation	Proposed Function	Proposed Structure
a unit configured to control a connection from a second wireless communication apparatus when the connection with the first wireless communication apparatus is established, wherein the control unit sets up a second mode in which, in a state where the connection with the first wireless communication device is established, the communication apparatus is inhibited from establishing a connection with the second wireless communication apparatus[16]	when the connection with the first wireless communication apparatus is established, controlling a connection from a second wireless communication apparatus by inhibiting a connection between the communication apparatus and the second wireless communication apparatus[17]	a processor (control unit 12) and three alternative algorithms: the algorithm corresponding the non-discoverable mode in Figure 4; the algorithm corresponding to the page denial mode in Figure 5; or the algorithm corresponding to the page non-response mode in Figure 6.[18]

(1) Function

Petitioner's proposed function retains some words of the limitation, but reflects substantial changes from the language of the claim without explanation, including exclusion of "the control unit sets up a second mode."

[16] Ex. 1001, 12:4–13.
[17] Pet. 23 (citing Ex. 1003 ¶ 77).
[18] Pet. 23–30 (citing Ex. 1001 6:24–49, 7:5–15, 8:20–25, Fig. 4 (elements SB8, SB10, SB11), Fig. 5 (elements SB8-1, SB10-1, SB11-1), Fig. 6 (elements SB8-2, SB10-2, SB11-2); Ex. 1003 ¶¶ 74–77).

Pet. 23 (citing Ex. 1003 ¶ 73). The table below reproduces the second "unit configured to" limitation and the proposed function, with highlighting to reflect the correspondences:

Limitation	Petitioner's Proposed Function
a unit configured to control a connection from a second wireless communication apparatus when the connection with the first wireless communication apparatus is established, wherein the control unit sets up a second mode in which, in a state where the connection with the first wireless communication device is established, the communication apparatus is inhibited from establishing a connection with the second wireless communication apparatus	when the connection with the first wireless communication apparatus is established, controlling a connection from a second wireless communication apparatus by inhibiting a connection between the communication apparatus and the second wireless communication apparatus

We recognize that "the control unit" has no obvious antecedent basis, but agree with Petitioner that, in light of the Specification, this term refers to the unit of the second "unit configured to" limitation, which is "configured to control a connection." *See* Pet. 24 n.9. In light of this, and based on the plain language of the claim limitation itself, we determine that the recited function of the second "unit configured to" limitation is "controlling a connection from a second wireless communication apparatus when the connection with the first wireless communication apparatus is established, and setting up a second mode in which, in a state where the connection with the first wireless communication device is established, the communication apparatus is inhibited from establishing a connection with a second wireless communication apparatus."

(2) Structure

For the same reasons as in the first "unit configured to" limitation, we find that the structure for this limitation is control unit 12, a processor executing certain algorithms. We agree with Petitioner's identification of the algorithms performed by a processor according to the second limitation, whereby a second mode is set up to inhibit the establishment of a connection and the connection with a second communication apparatus controlled. Therefore, we find the corresponding structure to be control unit 12 of the claimed wireless communication apparatus, executing the algorithms described to set up and enter the non-discoverable mode, the page denial mode, and/or the page non-response mode, as set forth in Figures 4–6 (elements SB8, SB10, SB11, SB8-1, SB10-1, SB11-1, SB8-2, SB10-2, SB11-2) and the accompanying disclosure. Ex. 1001, 6:18–49, 7:5–27, 8:20–37, Figs. 4–6; Ex. 1003 ¶¶ 74–77.

2. Ground 1 – Obviousness over the combination of Bluetooth Profiles and Nüsser (claims 12, 13, 15, 17, 20, and 21)

Petitioner contends that claims 12, 13, 15, 17, 20, and 21 would have been obvious over a combination of Bluetooth Profiles and Nüsser. Pet. 31–73. Patent Owner does not present any arguments in its post-institution briefs regarding these contentions. *See generally* PO Resp.; PO Sur-reply.

a) Bluetooth Profiles

Bluetooth Profiles is concerned with ensuring interoperability between heterogeneous devices by providing profile specifications to which the devices must conform in communications with each other. Ex. 1007, 19, 20. "A profile defines a selection of messages and procedures (generally termed capabilities) from the Bluetooth [Special Interest Group] specifications and gives an unambiguous description of the air interface for

specified service(s) and use case(s)." *Id.* at 19 (emphasis omitted). Bluetooth Profiles describes a profile structure that shows the dependencies of each profile with any profiles in which it is "contained," as depicted in Figure 1.1, reproduced below:

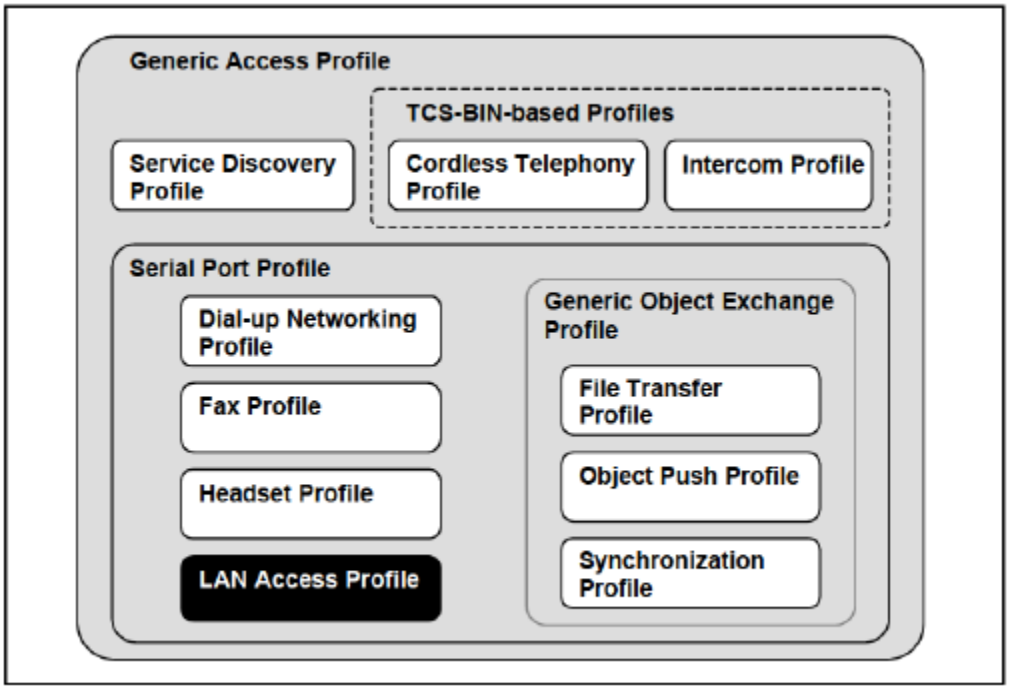

Figure 1.1: Bluetooth Profiles

Id. at 270. As shown in Figure 1.1, the LAN Access Profile is contained within the Serial Port Profile, which itself is contained within the Generic Access Profile. *Id.* The Generic Access profile defines generic procedures related to the discovery of Bluetooth devices and link management aspects of connecting Bluetooth devices. *Id.* at 13, 23. All devices that conform to other profiles must still be compliant with generic profile-compliant devices, with respect to certain universal supported generic procedures. *Id.* at 24. Generic Access Profile defines modes of operation that are not profile-specific, but rather generic. *Id.*

Bluetooth Profiles discloses an inquiry procedure, which provides the initiator of the inquiry with address and other information for devices that

are in range of the initiator and in a discoverable mode. *Id.* at 37. With respect to inquiries from other devices, Generic Access Profile describes that a Bluetooth device is either in a non-discoverable mode or in a discoverable mode, but not both. *Id.* at 29. "When a Bluetooth device is in non-discoverable mode it does not respond to inquiry." *Id.* at 29–30. When a Bluetooth device is in a discoverable mode, it enters an INQUIRY_RESPONSE state and may send a response to an inquiry unless it is unable to respond due to other activity. *Id.* at 29, 38.

Bluetooth Profiles also discloses, as part of Generic Access Profile, a link establishment process by which two devices, a paging device and a paged device, form a physical link. *Id.* at 45–48. The link establishment uses information provided during the inquiry procedure. *Id.* at 45, 47. The paging device initiates the process, and subsequently information is sent back and forth between the devices until a link is successfully set up. *Id.* at 46–47. "When both devices are satisfied, they send LMP_setup_complete." *Id.* at 48.

The LAN Access Profile defines local area network (LAN) access allowing Bluetooth-enabled devices to access the services of a LAN using PPP (point-to-point protocol). *Id.* at 265, 269, 271–72. LAN Access Profile can provide a connection between one data terminal (DT) and a LAN via a LAN Access Point (LAP). *Id.* at 272. Alternatively, multiple DTs can connect to a LAN via one LAP. *Id.* at 273. The LAN Access Profile requires both discoverability mode and connectability mode to be available for the LAP. The LAN Access Profile requires the LAP to have a parameter governing the maximum number of users, restricting the LAP to allow only that number of users to access the LAN. *Id.* at 277. "The fewer simultaneous users there are using a Bluetooth radio, the more bandwidth

will be available to each. A LAP can be restricted to a single user." *Id.* at 277 n.3.

b) Nüsser

Nüsser describes the use of Bluetooth for in-car electronic systems. Ex. 1006, 15. Nüsser proposes a central Bluetooth access point connected with a bus system included in an in-car electronics system (e.g. connecting devices such as a navigation system or car radio). *Id.* at 17. The access point (AP) provided in a central control unit (CCU) in the car sends and receives data to wireless devices via Bluetooth, and bridges communications with all devices directly connected to the bus. *Id.* This ensures interoperability of mobile and car-embedded devices, allowing the devices to share resources and use mutually-provided services. *Id.* at 17–18.

With respect to the configuration of the AP, Nüsser provides a configuration in which the AP is "set . . . in a non-discoverable mode" and does not respond to inquiries for connection requests from unknown devices. *Id.* at 18. "This relieves the CCU user (driver or front-seat passenger) from taking actions to refuse undesired connection requests." *Id.* However, certain devices may still connect: "[d]esired devices (e.g. devices of the passengers), however, are still able to connect to the AP if the Bluetooth device address of the AP is known. This address should have been stored in a previous connection to the AP." *Id.*

c) Combination of Bluetooth Profiles and Nüsser

Petitioner argues that one of ordinary skill would have been motivated to modify Bluetooth Profiles to incorporate the teachings of Nüsser relating to preventing a wireless device from connecting additional wireless devices in a Bluetooth context in order to provide details regarding how one might implement Nüsser's "non-discoverable mode." Pet. 38–40 (citing Ex. 1003

¶¶ 94–96; Ex. 1006, 15, 18). Petitioner argues that the suggestion of a non-discoverable mode in which Nüsser's AP "does not respond to inquiries" would have motivated one of ordinary skill in the art to have the AP in Bluetooth Profiles' non-discoverable or non-connectable mode. *Id.* at 40 (quoting Ex. 1006, 18; citing Ex. 1003 ¶ 97). One of ordinary skill in the art would have been motivated, according to Petitioner, by the specific reference to Bluetooth Profiles and the LAN Access profile in Nüsser. *Id.* at 39–40 (citing Ex. 1006, 18–19). Petitioner argues that the modification would have had a reasonable expectation of success because adding Bluetooth Profiles' non-discoverable or non-connectable mode would have yielded predictable results and improved the device in the same way. *Id.* at 40–42 (citing Ex. 1003 ¶¶ 98–99).

Petitioner shows that one of ordinary skill in the art would have combined Bluetooth Profiles and Nüsser to inhibit connections to a Bluetooth device after that device has established a first connection.

d) Claim 12

(1) Preamble, Limitations 12.1–12.3

Petitioner describes Bluetooth Profiles as teaching or suggesting the bulk of the recitations of claim 12. Addressing the preamble, and without arguing that the preamble is limiting, Petitioner argues that Bluetooth Profiles teaches or suggests "[a] communication method in a wireless communication apparatus" in the description of a LAN Access Point connecting wirelessly with a data terminal. Pet. 43–44 (citing Ex. 1007, 272–273; Ex. 1003 ¶ 100).

Petitioner argues that limitation 12.1, "setting up a first mode where the wireless communication apparatus is connectable with at least a first wireless communication device and a second wireless communication

device and accepts a connection request from the first wireless communication device," is taught or suggested by the Bluetooth Profiles LAN Access Point, which includes as a mandatory mode the "discoverable mode" and "connectable mode." *Id.* at 44–45 (citing Ex. 1007, 273, 276; Ex. 1003 ¶¶ 102–103). Petitioner argues that the discoverable mode would allow the LAN Access Point to be "discoverable" and thus to be in a mode where it would respond to a device that makes a general inquiry. *Id.* at 45–48 (citing Ex. 1007, 29–31, 37, 38, 41–42, 293, Fig. 6.1; Ex. 1003 ¶¶ 102–106). Petitioner argues that the connectable mode would allow the LAP to connect to a device (DT), determining if it has received a page and responding if it has. *Id.* at 45, 48–49 (citing Ex. 1007, 32, 45, 52, 53, 293; Ex. 1003 ¶¶ 107–108). Petitioner argues that this paging, sent by DT to the LAP, is part of a process of establishing a connection between two devices in Bluetooth Profiles, and that this process and can result in a connection for communication established between the LAP and DT, which teaches or suggests limitation 12.2, "establishing a connection with the first wireless communication device." *Id.* at 49–52 (citing Ex. 1007, 33–36, 45–47, 52, 54, 279, 291–292, Fig. 7.1; Ex. 1003 ¶¶ 110–115). With respect to limitation 12.3, "discovering a completion of the connection with the wireless communication apparatus," Petitioner argues that this is taught or suggested when two devices between which a link is being established each send notification to the other that link configuration has been conducted. *Id.* at 52–53 (citing Ex. 1007, 48; Ex. 1003 ¶ 116).

(2) Limitation 12.4

Limitation 12.4 of claim 12 recites "setting up a second mode where, in a state where the connection with the first wireless communication device is established, the wireless communication apparatus is inhibited from

establishing a connection with the second wireless communication device with respect to a connection request from the second wireless communication device." Ex. 1001, 10:65–11:4. Petitioner argues that this second mode is taught or suggested by the single-user mode of the LAN Access profile, in which a LAP can establish only one connection with a DT, and will "reject all attempts" by another DT to request a new connection with the LAP by sending an error code. Pet. 53–55 (citing Ex. 1007, 277–278, 288–289, 293; Ex. 1003 ¶¶ 118–120).

Petitioner additionally argues that one of ordinary skill in the art "would have been motivated to use the single-user mode of Bluetooth Profiles' LAN Access Profile for the reasons described in Nüsser—i.e., to limit interference and distraction to a driver by preventing additional mobile devices from connecting to a vehicle's infotainment system." *Id.* at 55 (citing Ex. 1006, 18, Ex. 1003 ¶ 121).

(3) Limitation 12.5

The last limitation of claim 12 recites "shifting from the first mode to the second mode after the completion of the connection." Ex. 1001, 11:5–6. Petitioner argues that in single-user mode, Bluetooth Profile's LAP would automatically shift from a first mode (discoverable and connectable) to a second (in which connection requests are rejected with an error code), and that this teaches or suggests the "shifting" of limitation 12.5. Pet. 54–57 (citing Ex. 1007, 277–288, 291–293; Ex. 1003 ¶¶ 124–125). Petitioner argues that, in light of Nüsser, a person of ordinary skill in the art would have been motivated "to set up the automobile's Bluetooth access point" in the second mode "after the driver has established a connection, in order to minimize distractions for the driver." *Id.* at 40–42 (citing Ex. 1006, 18).

(4) Conclusion

For the reasons set forth above, Petitioner persuasively shows that the combination of Bluetooth Profiles and Nüsser teaches all of the limitations of claim 12.[19] Petitioner additionally shows why a person of ordinary skill in the art would have combined Bluetooth Profiles and Nüsser with a reasonable expectation of success.

Accordingly, Petitioner has shown by a preponderance of the evidence that claim 12 is unpatentable as obvious over the combination of Bluetooth Profiles and Nüsser.

e) Claims 13, 15, and 17

Claim 13 further limits the second mode of claim 12 by requiring that the second mode include "a non-discoverable mode in which the wireless communication apparatus does not respond to an inquiry signal." Ex. 1001, 11:7–10. Claim 15 further limits the non-discoverable mode of claim 13 as "based on a Bluetooth standard." *Id.* at 11:14–16. Claim 17 further limits claim 15 by adding that the wireless communication apparatus "does not respond to an inquiry signal from another wireless communication apparatus after shifting to the second mode." *Id.* at 11:20–23.

Petitioner argues that one of ordinary skill in the art would have modified a LAP device acting according to Bluetooth Profiles' LAN Access profile, in light of Nüsser's teaching that the Nüsser AP does not respond to inquiry signals to limit Bluetooth connections. Pet. 57–58 (citing Ex. 1007, 5, 29, 276, 291, 293; Ex. 1006, 18; Ex. 1003 ¶¶ 129–130). Petitioner further argues, with respect to Claim 15, that such a change would be based on a

[19] Because we find the combination of art teaches or suggests the subject matter of the preamble, we do not address whether the preamble is limiting.

Bluetooth standard, because the Bluetooth standard teaches a non-discoverable mode for a LAP in which the LAP does not respond to inquiry. *Id.* at 59 (citing Ex. 1007, 29, 291, 293; Ex. 1003 ¶ 133). Petitioner's arguments with respect to claim 17 are based on its arguments for limitation 12.5 of claim 12 and for claim 13. *Id.* at 60–62 (citing Ex. 1003 ¶¶ 136, 138).

Based on the arguments and evidence in the record, Petitioner persuasively shows that the combination of Bluetooth Profiles and Nüsser renders claims 13, 15, and 17 obvious. Accordingly, Petitioner has shown by a preponderance of the evidence that claims 13, 15, and 17 are unpatentable as obvious over the combination of Bluetooth Profiles and Nüsser.

f) Claims 20 and 21

As discussed *supra* in Section II.E.1, we determine that the two "unit configured to" limitations in claim 20 are means-plus-function limitations. Petitioner's arguments largely track those made with respect to claim 12. Petitioner additionally presents arguments related to the algorithms that it identifies for the first and second "unit configured to" limitations. Pet. 62–72.

Petitioner discusses how the LAP described in Bluetooth Profiles performs the functions we have identified for the first "unit configured to" limitations. *Id.* at 63–67. The LAP's processor teaches or suggests the processor, such as control unit 12, that we have identified as the structure for this limitation, when executing certain identified algorithms. Petitioner shows that the LAP, operating in a first mode, establishes a connection with a first wireless communications apparatus. *Id.* at 63–64 (citing Ex. 1007, 31, 37, 41–42, 45, 52, 53, 291; Ex. 1003 ¶¶ 145–149).

Petitioner further identifies how a Bluetooth device, such as the LAP, performs the algorithms it discusses in its proposed constructions of the "unit configured to" limitations. *Id.* at 67–69. The algorithm proposed by Petitioner for the first "unit configured to" limitation, requiring "sending a page response" is a subset of the algorithm that we have determined corresponds to the first "unit configured to" limitation of claim 20, and therefore Petitioner's reasoning with respect to the first "unit configured to" limitation persuasively shows how Bluetooth Profiles teaches or suggests a wireless communications apparatus (the LAP) executing one of the identified algorithms. *See id.* (citing Ex. 1007, 33–36, 46, 47, 292, Ex. 1003 ¶ 155).

Petitioner additionally shows that the same processor within the LAP performs the functions that we have identified for the second "unit configured to" limitations, with the second mode corresponding to a single-user mode. *Id.* at 69–71 (citing Ex. 1007, 277, 278, 288–289, 291–293; Ex. 1003 ¶¶ 157–160). While our identification of the function corresponding to the second "unit configured to" limitation of claim 20 differs from Petitioner's proposal, our construction adopts the algorithms proposed by Petitioner for the second "unit configured to" limitation, and we find persuasive Petitioner's arguments with respect to the algorithms for the second "unit configured to" limitation, and that the LAP in Bluetooth Profiles teaches or suggests the wireless communication apparatus when executing these algorithms. *See id.* at 71–72 (citing Ex. 1007, 277, 288–89, 291–93, Ex. 1003 ¶ 162).

For these reasons, based on the arguments and evidence in the record, Petitioner persuasively shows that the combination of Bluetooth Profiles and Nüsser renders claims 20 and 21 obvious. Accordingly, Petitioner has

shown by a preponderance of the evidence that claims 20 and 21 are unpatentable as obvious over the combination of Bluetooth Profiles and Nüsser.

3. Ground 2 – Obviousness over the combination of Bluetooth Profiles, Cooper, and Nüsser (claims 12, 14, 16, and 19–21)

Petitioner contends that claims 12, 14, 16, and 19–21 would have been obvious over a combination of Bluetooth Profiles, Cooper, and Nüsser. Pet. 73–87. Patent Owner does not present any arguments in its post-institution briefs regarding these contentions. *See generally* PO Resp.; PO Sur-reply.

a) Cooper

Cooper describes securing wireless communications between devices. Ex. 1008, code (57), ¶ 9. Cooper describes devices communicating according to the Bluetooth protocol. *Id.* ¶ 9. Cooper also describes non-discoverable mode for a device, in which the device ignores inquiries and does not transmit its device address. *Id.* ¶ 10. Cooper further describes non-connectable mode for a device, in which the device ignores a page request. *Id.* ¶ 11. Cooper discloses that a device "may enter non-connectable mode after having already established one or more connections." *Id.*

b) Combination of Bluetooth Profiles, Cooper, and Nüsser

Petitioner argues that "[t]he Bluetooth techniques *Cooper* discusses are precisely the same techniques disclosed in Bluetooth Profiles and Nüsser." Pet. 75 (citing Ex. 1003 ¶ 188). Thus, Petitioner argues, one of ordinary skill in the art would have combined Cooper's discussion of a device entering a non-connectable mode as yielding predictable results, to improve the Nüsser technique of limiting Bluetooth connections. *Id.* at 75–76. Petitioner further argues that one of ordinary skill in the art would have

had a reasonable expectation of success in doing so because Cooper's teachings are an application of the Bluetooth standard. *Id.* at 76.

Petitioner persuasively shows that one of ordinary skill in the art would have combined Bluetooth Profiles, Cooper, and Nüsser for the inhibition of connections to a Bluetooth device after that device has established a first connection.

c) Claim 12

Petitioner's arguments concerning the unpatentability of claim 12 in this ground largely echo its arguments with respect to the unpatentability of claim 12 over Bluetooth Profiles and Nüsser, with the exceptions of limitations 12.4 and 12.5. Pet. 77–80.

For limitation 12.4, Petitioner argues that Cooper teaches this limitation in its disclosure of a Bluetooth device changing to a non-connectable mode (the claimed "second mode") after it has established prior connections ("in a state where the connection with the first wireless communication device is established"). *Id.* at 78–79 (citing Ex. 1008 ¶¶ 10–11; Ex. 1003 ¶¶ 207–209). For limitation 12.5, Petitioner argues that a shift from a connectable mode to the non-connectable (second mode) after completion of the connection is taught by Cooper's statement that "[a] Bluetooth device may enter non-connectable mode after having already established one or more connections." *Id.* at 79–80 (quoting Ex. 1008 ¶ 11; citing Ex. 1003 ¶¶ 211–212) (alteration in original).

For the reasons set forth above, Petitioner persuasively shows that the combination of Bluetooth Profiles, Cooper, and Nüsser teaches all of the limitations of claim 12. Petitioner additionally shows why a person of ordinary skill in the art would have combined Bluetooth Profiles, Cooper, and Nüsser.

Accordingly, Petitioner has shown by a preponderance of the evidence that claim 12 is unpatentable as obvious over the combination of Bluetooth Profiles, Cooper, and Nüsser.

d) Claims 14, 16, and 19

Claim 14 further limits the second mode of claim 12 by requiring that the second mode include "a non-connectable mode in which no connection is performed for paging." Ex. 1001, 11:11–13. Claim 16 further limits the non-connectable mode of claim 14 as "based on a Bluetooth standard." *Id.* at 11:17–19. Claim 19 further limits claim 16 by adding that the wireless communication apparatus "does not respond to a paging signal after shifting to the second mode." *Id.* at 11:27–29.

Petitioner argues that one of ordinary skill in the art would have modified a device acting according to Bluetooth protocols to use Cooper's non-connectable mode in which the device will ignore a page request, thus providing a non-connectable mode in which no connection is performed for paging. *Id.* at 80–81 (citing Ex. 1008 ¶ 11; Ex. 1003 ¶ 215). Petitioner further argues, with respect to Claim 16, that such a change would be based on a Bluetooth standard, because Cooper is based on the Bluetooth standard and Cooper's description of the non-connectable mode is consistent with the Bluetooth Profiles description. *Id.* at 81 (citing Ex. 1007, 31–32; Ex. 1008 ¶¶ 9–11; Ex. 1003 ¶ 218). Petitioner's arguments with respect to claim 19 are similar to those presented for claim 14. *Id.* at 82 (citing Ex. 1003 ¶ 221).

For the reasons set forth above, Petitioner persuasively shows that the combination of Bluetooth Profiles, Cooper, and Nüsser teaches all of the limitations of claims 14, 16, and 19. Petitioner additionally shows why a person of ordinary skill in the art would have combined Bluetooth Profiles, Cooper, and Nüsser.

Accordingly, Petitioner has shown by a preponderance of the evidence that claims 14, 16, and 19 are unpatentable as obvious over the combination of Bluetooth Profiles, Cooper, and Nüsser.

e) Claims 20 and 21

Petitioner's arguments for claims 20 and 21 largely refer back to or mirror its arguments with respect to the unpatentability of claims 20 and 21 over Bluetooth Profiles and Nüsser, with the exception of using Cooper's teachings regarding a device changing to a non-connectable mode with respect to paging signals after one or more connections have been established, as discussed above. *Id.* at 82–86 (citing Ex. 1007, 31–32; Ex. 1008 ¶¶ 10–11; Ex. 1003 ¶¶ 223, 225–236, 239–242).

For the reasons set forth above, Petitioner persuasively shows that the combination of Bluetooth Profiles, Cooper, and Nüsser teaches all of the limitations of claims 20 and 21. Petitioner additionally shows why a person of ordinary skill in the art would have combined Bluetooth Profiles, Cooper, and Nüsser.

Accordingly, Petitioner has shown by a preponderance of the evidence that claims 20 and 21 are unpatentable as obvious over the combination of Bluetooth Profiles, Cooper, and Nüsser.

III. PENDING MOTIONS

A. Petitioner's Motion to Strike

With our authorization (Paper 37), Petitioner filed a Motion to Strike Portions of Patent Owner's Sur-Reply and Improper Sur-Reply Evidence (Paper 38, "Pet. Mot. Strike") and Patent Owner filed an Opposition to this Motion (Paper 41, "PO Opp. Mot. Strike"). In our vacated Final Written Decision, we noted that we had not relied on these exhibits or the related portions of Patent Owner's Sur-reply in reaching our decision, and therefore

we dismissed as moot the Motion to Strike. Paper 58, 25–26. We revisit the Motion to Strike in light of this revised Final Written Decision.

Petitioner moves to strike Patent Owner's Sur-reply Exhibits 2034–2037 and portions of the Sur-reply that discuss those exhibits based on our Consolidated Trial Practice Guide[20] ("CTPG"). Pet. Mot. Strike 1. Petitioner argues that the CTPG prohibits new evidence with a sur-reply. *Id.*

Exhibit 2034 relates to an argument made by Patent Owner to counter Petitioner's arguments regarding whether the indexing of the IEEE Proceedings in the Auraria library would have been sufficient to show public accessibility. PO Sur-reply 10–13. Exhibit 2035 relates to Mr. MacPherson's tenure at IEEE and to whether he was employed there at the time of the 52nd Vehicular Technology Conference. *Id.* at 2–3. Exhibits 2036 and 2037 purportedly relate to the date provided in MARC records and are used to challenge the testimony provided with respect to the date of availability of a digital version of Nüsser in the Auraria library or a print version of Nüsser in two other libraries. *Id.* at 12–14.

Even considering the information in these Exhibits and the portions of the Sur-reply in which they are argued, we find Nüsser to have been publicly accessible as of the priority date of the '210 patent. Thus, we dismiss as moot Petitioner's Motion to Strike.

B. Patent Owner's Motion to Exclude

In addition, Patent Owner filed a Motion to Exclude (Paper 43, "PO Mot. Exclude"), Petitioner filed an Opposition (Paper 48, "Pet. Opp. Mot. Exclude"), and Patent Owner filed a Reply (Paper 51, "PO Reply Mot. Exclude"). In our vacated Final Written Decision, we noted that we had not

[20] Available at www.uspto.gov/TrialPracticeGuideConsolidated.

relied on these exhibits or the related portions of Patent Owner's Sur-reply in reaching our decision, and therefore we dismissed as moot the Motion to Strike. Paper 58, 26. We revisit the Motion to Strike in light of this revised Final Written Decision.

In the Motion to Exclude, Patent Owner moves to exclude all or part of Exhibits 1006, 1007, 1010, 1012, 1015–1018, 1023–1028, 1036–1040, 1045, and 1046. PO Mot. Exclude 1.

Patent Owner timely filed objections pursuant to 37 C.F.R. § 42.64(b) with respect to Exhibits 1006, 1007, 1010, 1012, 1015–1018, 1023–1028 on December 18, 2020 as Paper 18. Patent Owner argues that it additionally filed objections with respect to Exhibits 1006 and 1007 in its Patent Owner Response; this contention is addressed below. PO Reply Mot. Exclude 3 (citing PO Resp. 15, 19). Patent Owner timely filed objections pursuant to 37 C.F.R. § 42.64(b) with respect to Exhibits 1036–1040, 1045, and 1046 on June 1, 2021 as Paper 33.

1. Exhibit 1006

Patent Owner argues that the date printed on Exhibit 1006 (Nüsser) is inadmissible hearsay under FRE 801 and 802 because it is relied on to show the truth of the matter asserted. PO Mot. Exclude 3–4, PO Reply Mot. Exclude 2–3. Patent Owner refers to Petitioner's use of "the date printed on *Nüsser* itself" in the Petition. PO Mot. Exclude 3 (citing Pet.[21] 6).

[21] In Patent Owner's Motion to Exclude and Reply to Petitioner's Opposition to the Motion to Exclude, Patent Owner refers to "Paper 1." *See, e.g.*, PO Mot. Exclude 3; PO Reply Mot. Exclude 4. While Paper 1 is not the Petition, we understand Patent Owner to be referring to the Petition (Paper 2).

Patent Owner did not raise hearsay objections within ten business days of institution of the trial. *See* 37 C.F.R. § 42.64(b)(1) ("Any objection to evidence submitted during a preliminary proceeding must be filed within ten business days of the institution of the trial."). Although Patent Owner timely filed other objections to Exhibit 1006, these objections were based on another rule of evidence. *See* Paper 18, 2 (identifying only "Authentication (FRE 901)" as an objection to Exhibit 1006). Patent Owner argues that it raised its hearsay objections within its Patent Owner Response, but that brief was filed well after the time for objections had passed. *See* PO Mot. Exclude 1 (citing PO Resp. 15); PO Reply Mot. Exclude 3 (same). Thus, Patent Owner waived any hearsay objection to Exhibit 1006, and we deny Patent Owner's motion with respect to Exhibit 1006 at least for that reason.

Alternatively, we accept Petitioner's position that the dates on the face of Exhibit 1006 fall into the exception for records of a regularly conducted activity. Pet. Opp. Mot. Exclude 4–5.

Petitioner argues that the declaration of Mr. MacPherson satisfies the requirements of the exception for records of a regularly conducted activity, FRE 803(6). *Id.* at 4. With respect to the exception for records of a regularly conducted activity, Patent Owner contends that Mr. MacPherson "lacks personal knowledge." PO Reply Mot. Exclude 2. Patent Owner has put forth no countervailing evidence, such as cross-examination testimony, to undermine Petitioner's contention that Mr. MacPherson is a custodian of records who is knowledgeable about IEEE's record-keeping practices. *See, e.g.*, Ex. 1036 ¶¶ 1, 4–7. Moreover, to the extent Patent Owner argues that Mr. MacPherson is not qualified to be "the custodian or another qualified witness" referred to in FRE 803(6)(D), personal knowledge is not required, nor is the custodian required to have been employed by the business when

the record was created. *See Conoco Inc. v. Dept. of Energy*, 99 F.3d 387, 391 (Fed. Cir. 1996) ("[T]he 'custodian or other qualified witness' who must authenticate business records need not be the person who prepared or maintained the records, or even an employee of the record-keeping entity, as long as the witness understands the system used to prepare the records.").

Additionally, we note that "[b]ecause of the general trustworthiness of regularly kept records and the need for such evidence in many cases, the business records exception [to the hearsay rule] has been construed generously in favor of admissibility." *Conoco*, 99 F.3d at 391. For these reasons, we find that Exhibit 1006 qualifies as a business record of IEEE, so we find that the business record exception to hearsay applies to the dates printed on Exhibit 1006. FRE 803(6).

For these reasons, we deny Patent Owner's Motion to Exclude with respect to Exhibit 1006.

2. Exhibit 1007

Patent Owner argues that the dates printed on and within Exhibit 1007 (Bluetooth Profiles) are inadmissible hearsay under FRE 801 and 802 because they are relied on to show the truth of the matter asserted. PO Mot. Exclude 3–4, PO Reply Mot. Exclude 2–3. Patent Owner acknowledges that the Decision on Institution uses the printed dates of Exhibit 1007 in the preliminary determination that it was publicly available. PO Mot. Exclude 3 (citing Dec. on Inst. 21[22]). Yet Patent Owner did not raise hearsay objections within ten business days of institution of the trial in accordance with 37 C.F.R. § 42.64(b)(1). Thus, as with Exhibit 1006, Patent Owner's

[22] Patent Owner mistakenly cites to page 6 of the Decision on Institution, but our discussion about the date printed on the face of Bluetooth Profiles actually appears on page 21 of the Decision on Institution.

argument that it filed objections via its Patent Owner Response is again not availing as that document was filed after the expiration of time for filing such objections. *See* 37 C.F.R. § 42.64(b)(1); PO Mot. Exclude 1 (citing PO Resp. 15); PO Reply Mot. Exclude 3 (same). Patent Owner waived any hearsay objection to Exhibit 1007, and we deny Patent Owner's motion with respect to Exhibit 1007 at least for that reason.

Furthermore, regardless of whether the dates in Exhibit 1007 are inadmissible hearsay, we agree with Petitioner that the date indicia on Exhibit 1007 are the type of evidence that an expert such as Dr. Hall-Ellis would reasonably rely on. Pet. Opp. Mot. Exclude 5 (citing Ex. 1010 ¶¶ 45–57); Ex. 1010 ¶ 51 (citing the date on Ex. 1007). Patent Owner argues that Dr. Hall-Ellis is not credible and has never worked with the organization responsible for Exhibit 1007. PO Reply Mot. Exclude 3. We have identified issues with respect to Dr. Hall-Ellis's testimony with respect to Exhibit 1006, *supra* at Section II.C.3, but do not find that any determination regarding her credibility relates to the question of whether the indicia are the type of evidence that Dr. Hall-Ellis would rely on. Additionally, we disagree that the question of whether she is or was employed by any organization is relevant to her reliance as an expert on the date indicia on this standards document. Thus, we find that it was reasonable for Dr. Hall-Ellis to rely on the date indicia in Exhibit 1007 regardless of whether Exhibit 1007 is admissible. FRE 703.

For these reasons, we deny Patent Owner's Motion to Exclude with respect to Exhibit 1007.

3. Attachments B1 and B2 to Exhibit 1010 and Attachments D and E to Exhibit 1037

Patent Owner argues that Attachment B1 to Exhibit 1010 and Attachments D and E to Exhibit 1037 should be excluded. PO Mot. Exclude 4–5. Patent Owner argues that each is a MARC record including a 008 field, and that the date in these fields is offered for the truth of the matter asserted, and as such each is inadmissible hearsay and not subject to a business records exception to the hearsay rule. *Id.* Additionally, Patent Owner argues that Attachment B2 to Exhibit 1010 should be excluded as two entries in a field of that MARC record are also offered for the truth of the matter asserted. *Id.* at 5.

Yet library catalogs such as MARC are generally relied upon by the public and by librarians, and the compilers of such catalogs are motivated to foster reliance on the catalogs by being accurate. FRE 803(17); *see also id.*, Advisory Committee's Notes to FRE 803; Ex. 1010 ¶¶ 25–27. Thus, to the extent Patent Owner contends that Attachment B1 to Exhibit 1010 and Attachments D and E to Exhibit 1037 contain inadmissible hearsay, we find that they are directories admissible under Rule 803(17) of the Federal Rules of Evidence.

Furthermore, regardless of whether Attachment B1 to Exhibit 1010 and Attachments D and E to Exhibit 1037 are admissible, we again agree with Petitioner that the MARC records in these attachments are the type of evidence that an expert such as Dr. Hall-Ellis would reasonably rely on. In particular, the interpretation of the MARC fields was testified to by Dr. Hall-Ellis, Patent Owner has argued that this interpretation is inconsistent or otherwise flawed, and each party addressed questions about Dr. Hall-Ellis's testimony at the oral hearing. PO Resp. 2–5; PO Sur-reply 12–14; Tr.

12:10–14:2, 15:7–20:9, 23:12–24:20, 25:10–26:2, 34:16–35:15, 36:20–41:19, 43:17–44:10, 44:25–45:23; Ex. 1010, 25–44, 46–50; Ex. 1037, 13–18, 21–22. Dr. Hall-Ellis uses the MARC fields to draw conclusions and discloses the objected-to attachments as the evidence underlying her opinion, and thus the use of these attachments is consistent with Rule 703 of the Federal Rules of Evidence. Patent Owner has had ample opportunity to present argument and evidence regarding conclusions to be drawn from the fields in the MARC records, had the opportunity to depose Dr. Hall-Ellis regarding these records, and did so. Ex. 2024, 10:11–23, 18:6–20:17, 21:16–63:10.

For these reasons, we deny Patent Owner's motion with respect to the objected-to attachments to Exhibits 1010 and 1037.

4. Exhibits 1012, 1015, and 1016

Patent Owner argues that Exhibits 1012, 1015, and 1016, each a United States patent, should be excluded as offered to establish the public accessibility of Bluetooth Profiles as of the date on each respective exhibit. PO Mot. Exclude 6. Petitioner argues that Patent Owner does not identify what portion of the exhibits it believes to be hearsay, or how those portions constitute hearsay, and thus the Motion to Exclude should be denied with respect to these Exhibits. Pet. Opp. Mot. Exclude 9. Patent Owner argues "these exhibits do not purport to state that *Bluetooth Profiles* was available at Bluetooth.com, or anywhere else." PO Mot. Exclude 6. We agree that this statement is not contained in any of Exhibits 1012, 1015, and 1016. Thus, its argument that Petitioner relies on such statements in the exhibits is moot. *See id.*

To the extent that the hearsay objection relates to mentions of Bluetooth Profiles in the specifications of these patents, we disagree that

these are hearsay. FRE 801(c)(2). Dr. Madisetti noted that "patents referred to the Bluetooth standard and its specification documents," citing Exhibit 1012 (3:10–12), Exhibit 1015, (8:8–18), and Exhibit 1016 (16:9–20). Ex. 1003 ¶ 55. Dr. Madisetti's testimony regarding these patents does not relate to the truth of any statement contained within the documents themselves but rather to a description of their content. *See* Pet. Opp. Mot. Exclude 7. As such, Exhibits 1012, 1015, and 1016 are used merely to establish that Bluetooth Profiles is referenced in patent documents that predate the critical date of the '210 patent.

To the extent that the hearsay objection relates to the dates of filing or publication of the specifications of the patents, these dates are public records that set out the U.S. Patent and Trademark Office's activities in accepting patent applications, granting patents, and publishing certain related documents, and thus are not excluded by the rule against hearsay. FRE 803(8)(A)(i); *see Valve Corp.*, 8 F.4th at 1370 n.6.

For these reasons, we deny Patent Owner's motion with respect to Exhibits 1012, 1015, and 1016.

5. Exhibit 1017

Patent Owner argues that Exhibit 1017, a United States patent, should be excluded as hearsay as it is offered for the truth of the statement that Bluetooth Profiles was "available at www.bluetooth.com" as of the date of the patent. PO Mot. Exclude 5–6; PO Reply Mot. Exclude 3–4.

Petitioner argues that Exhibit 1017 "shows awareness" of the Bluetooth website and is not cited for the truth of the matter asserted. Pet. Opp. Mot. Exclude 7. We disagree. The objected-to statement was quoted in the Petition and appeared to be offered for the truth of the statement, to confirm "[t]he availability of *Bluetooth Profiles*" and that readers were

"directed . . . to the Bluetooth Website." Pet. 6–7 (quoting Ex. 1017 (18:51–55) in its citation of the exhibit); Ex. 1003 ¶ 55.

Petitioner argues that the statement shows a "then-existing state of mind" that Bluetooth Profiles was available via the given website. Pet. Opp. Mot. Exclude 7–8 (citing FRE 803(3)). However, such statements specifically do not include "a statement of . . . belief to prove the fact . . . believed unless it relates to the validity or terms of the declarant's will." FRE 803(3). Therefore, this exception does not apply.

Petitioner also argues that, as a patent, Exhibit 1017 falls within the public record exception to hearsay. Pet. Opp. Mot. Exclude 8 (citing *Valve Corp.* 8 F.4th at 1370 n.6). However, *Valve* cites FRE 803(8) and does not stand for the proposition that any statement found anywhere within a patent history or a patent specification is considered an exception to the hearsay rule, but rather that a record or statement of a public office that sets out that office's activities is an exception to the rule. *Valve Corp.* 8 F.4th at 1370 n.6 (citing FRE 803(8)).

Petitioner argues that this statement qualifies for the residual exception, because applicants have a duty to make accurate representations during patent prosecution and the evidence is more probative than other evidence because "patents uniquely reflect developing technology and reliance on that technology." Pet. Opp. Mot. Exclude 8–9. But Petitioner makes no showing about potential efforts—reasonable or otherwise—to obtain *other* evidence regarding awareness of Bluetooth Profiles at the time of the '210 patent. *See* FRE 807(a)(2). Although Petitioner is correct that patents reflect developing technology, this does not mean that patents are the only potential evidence regarding Bluetooth Profiles. Indeed, Petitioner does not address other efforts it might have taken to obtain admissible

evidence that could be at least as probative as Exhibit 1017, such as by testimony from individuals knowledgeable about the development of Bluetooth standards, and why such evidence would not have been more probative on the point for which it is offered or could not have been obtained through reasonable efforts. Therefore, Petitioner fails to meet part (a)(2) of Rule 807, so we decline to apply the residual exception.

Petitioner additionally argues that because Dr. Madisetti relied on this statement, it must be permissible evidence under FRE 703. *Id.* at 9. However, this reasoning is circular, and we do not agree that it shows that the statement is reasonably relied on by Dr. Madisetti.

For these reasons, we grant Patent Owner's motion with respect to Exhibit 1017.

6. Exhibits 1018 and 1023–1028

Patent Owner argues that Exhibits 1018 and 1023–1028 are relied on by Petitioner for the truth of the matter asserted by the dates listed on them – that the exhibits were published or made publicly accessible on those dates. PO Mot. Exclude 6–7 (citing Pet. 1; Pet. Reply 5–6). In addition to the dates, without specifying what statements are objected to, Patent Owner argues that "to the extent" that the exhibits "can be construed to say that" Bluetooth [P]rofiles was available from the Bluetooth website and was published in December of 1999," the statements are offered for the truth of the matter they assert. *Id.* at 7 (citing Dec. on Inst. 21; Pet. 7). Patent Owner argues that "[n]either Exhibit 1024 nor 1026 actually says that, but the Institution [D]ecision interpreted them to say that." *Id.*

a) The Dates on Exhibits 1018 and 1023–1028

Petitioner argues that Dr. Madisetti relied on Exhibits 1018 and 1023–1028 to support his opinion that one of ordinary skill would have been aware

of Bluetooth standards documents, including Bluetooth Profiles, as of the priority date. Pet. Opp. Mot. Exclude 10–11 (citing Ex. 1003 ¶¶ 53–55). We agree with Petitioner that experts in the field would reasonably rely on such evidence (the dates on technical documents and in textbooks relating to the subject at hand) and that the probative evidence substantially outweighs any prejudice. *See Wi-Lan Inc. v. Sharp Elecs. Corp.*, 992 F.3d 1366, 1374–76 (Fed. Cir. 2021) (discussing admissibility of expert testimony based on inadmissible evidence).

Thus, regardless of whether Exhibits 1018 and 1023–1028 are admissible, we find that it was reasonable for Dr. Madisetti to rely on dates pertaining to Bluetooth standards in Exhibits 1018 and 1023–1028. FRE 703. Dr. Madisetti's testimony itself is not objected to on this basis (or any other) and we consider it in our evaluation of the record. *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1373 (Fed. Cir. 2013) ("Data relied on by the expert 'need not be admissible for the opinion to be admitted' if experts in the field would reasonably rely on such data" (quoting FRE 703)). Additionally, while not argued by Petitioner, Dr. Hall-Ellis's testimony regarding Bluetooth Profiles also relies on Exhibit 1018, and we determine that this reliance is reasonable for one in Dr. Hall-Ellis's field. Ex. 1010 ¶¶ 21, 54–57.

b) Other Challenged Parts of the Exhibits

Patent Owner's additional challenge is directed "to the extent" that the exhibits "can be construed to say that" Bluetooth [P]rofiles was available from the Bluetooth website and was published in December of 1999." PO Mot. Exclude 7 (citing Dec. on Inst. 21; Pet. 7).

The cited portion of the Institution Decision states that "several of the articles *appear to support* Petitioner's contention that [Bluetooth Profiles]

was available from the Bluetooth website and was published in December of 1999." Dec. on Inst. 21 (emphasis added). The Petition argued that these exhibits, among others, were published before the priority date and "discussed the Bluetooth standard, referred to the December 1999 Bluetooth specification, and/or directed [persons of ordinary skill in the art] to the Bluetooth website." Pet. 7 (citing Ex. 1018, 182[23] n.1, 346; Ex. 1023, 110, 117; Ex. 1024, 1567 nn.1–2; Ex. 1025, 103 nn.1–2; Ex. 1026, 147–48 & n.1; Ex. 1027, 142 nn.1–2; Ex. 1028, 28, 36).

While we are sympathetic to Petitioner's assertion that Patent Owner did not identify the statements that were objected to, Petitioner understood Patent Owner's stance that the hearsay objection involved "the mere date of publication of each article and, in some cases, *the basic fact that the Bluetooth specification could be found at the Bluetooth website*." Pet. Opp. Mot. Exclude 10–11 (emphasis added). We understand Patent Owner to be objecting to the use of any statement cited in the portion of the Petition discussed that relates to the Bluetooth website. The cited portions of Exhibit 1023 and Exhibit 1028 and the first citation in Exhibit 1018 do not appear to relate to the Bluetooth website. The text of the remaining citations is given in the following chart (where a footnote is referenced, the footnoted matter in the main body is provided for context):

Location	Text
Ex. 1018, 346	To stay updated on the status of the Bluetooth specification, including vendor product announcements, check the following Web page: www.bluetooth.com
Exhibit 1024, 1563	Bluetooth is a universal short range wireless communication system operating in the 2.45

[23] The Petition cites page 82, but we understand this to be a typo for page 182. Pet. 7; *see* Ex. 1018, 182 n.1.

Location	Text
	GHz ISM band [1, 2, 3].
Exhibit 1024, 1567 n.1	*Specification of the Bluetooth System. Core, Version 1.0 B,* December 1999
Exhibit 1024, 1567 n.2	*http://www.bluetooth.com*
Exhibit 1025, 96	The Bluetooth specifications[1,2] currently in version 1.1 define a radio frequency (RF) communication interface and the associated set of communication protocols and usage profiles
Exhibit 1025, 103 n.1	*Specification of the Bluetooth System – Core*; available online at http://www.bluetooth.com/ developer/specification/ Bluetooth_11_Specifications_Book.pdf
Exhibit 1025, 103 n.2	*Specification of the Bluetooth System – Profiles*; available online at http://www.bluetooth.com/ developer/specification/ Bluetooth_11_Profiles_Book.pdf
Exhibit 1026, 147	Bluetooth is a short range radio technology operating in the unlicensed ISM (Industrial-Scientific-Medical) band. Bluetooth (BT) units are arranged in *piconets*. There is one Bluetooth device in each piconet that acts as the master, which can have any number of slaves out of which up to seven can be active simultaneously. Being a master or a slave is only a logical state: any Bluetooth unit can be a master or a slave. For further information the reader is referred to [1], [2].
Exhibit 1026, 148 n.1	Bluetooth SIG, 'Bluetooth Baseband Specification Version 1.0 B,' http://www.bluetooth.com/.
Exhibit 1027, 141	The Bluetooth Baseband Specification [1] defines the Bluetooth point to point connection establishment as a two step procedure.
Exhibit 1027, 142	This is an encouraging result since the uniform distribution is easily implemented in hardware and is already supported through the **Periodic_Inquiry_Mode** command [2].
Exhibit 1027, 142 n.1	J. Haartsen, "Bluetooth Baseband Specification,

Location	Text
	version 1.0", www.Bluetooth.com
Exhibit 1027, 142 n.2	K. Fleming, "Bluetooth Host Controller Interface Functional Specification, version 1.0", www.Bluetooth.com

Again, regardless of whether Exhibits 1018 and 1023–1028 are admissible, we find that it was reasonable for Dr. Madisetti to rely on these statements pertaining to Bluetooth standards and the Bluetooth website in his opinion, and that each is permissible evidence to support an expert's testimony under FRE 703. Pet. Opp. Mot. Exclude 10–11. As Petitioner argues (with respect to the residual exception), authors of technical publications provide reference citations to supply readers with sources to confirm information or to seek additional resources relating to the text of the publication. Ex. 1010 ¶ 21 ("A citation of a document is evidence that the document was publicly available and in use by researchers no later than the publication date of the citing document."). Thus, we again find reasonable Dr. Madisetti's reliance on these resources to confirm the dates on which interested parties of ordinary skill in the art would have been aware of the Bluetooth standard and how to access it. *See* Ex. 1003 ¶¶ 54–56. Similarly, we find the reliance of Dr. Hall-Ellis in her testimony regarding Bluetooth Profiles on Exhibit 1018 to have been reasonable. *See* Ex. 1010 ¶¶ 54–57.

c) Conclusion – Exhibits 1018 and 1023–1028

As discussed above, we find that Dr. Hall-Ellis's reliance on Exhibit 1018 and Dr. Madisetti's reliance on Exhibits 1018 and 1023–1028 were reasonable. We do not rely directly upon the objected-to portions of these exhibits or consider them, other than in evaluating the opinions presented by Dr. Hall-Ellis and Dr. Madisetti.

For the reasons discussed above, we deny Patent Owner's motion to exclude with respect to Exhibits 1018 and 1023–1028.

7. Exhibit 1036

Patent Owner argues that paragraphs 10 and 11 of Exhibit 1036, the declaration of Gordon MacPherson, should be excluded. PO Mot. Exclude 7–9. Patent Owner timely filed an objection to these paragraphs, citing "Foundation (FRE 601)" and "Lack of underlying facts (37 C.F.R. §42.65(a))." Paper 33. Section 42.65 of 37 C.F.R. relates to testimony by an expert and is inapposite. Petitioner argues that Patent Owner's objection does not relate to FRE 601. Pet. Opp. Mot. Exclude 12. It appears from the description "Foundation," that Patent Owner intended to object under FRE 602, which deals with foundation for testimony. FRE 602; *see id.* Advisory Committee's Notes (describing the rule as setting forth "foundation requirements.").

Patent Owner argues that Mr. MacPherson does not identify whether the information in these paragraphs is based upon personal information or on a review of business records of IEEE. PO Mot. Exclude 7–8. If based on business records, Patent Owner argues that "Mr. MacPherson does not identify or attach the purported business records reviewed," and thus testimony based on those records is inadmissible hearsay. *Id.* at 8–9. However, we agree with Petitioner that in these paragraphs, "MacPherson is testifying, consistent with his custodian role at IEEE, about IEEE's 'ordinary course of business' in 'publish[ing] and mak[ing] available technical articles and standards.'" Pet. Opp. Mot. Exclude 12–13 (quoting Ex. 1036 ¶ 6) (alterations in original).

Additionally, with respect to paragraph 11 of Exhibit 1036, the records on which Mr. MacPherson relied were attached in Exhibit A, in the

form of the abstract from Xplore and the Nüsser article. Ex. 1036 ¶¶ 6, 7, 9, 10. Mr. MacPherson's foundation to testify from his personal knowledge about the regular practices of IEEE and the import of IEEE business records is established in his position as Director of the Board Governance & IP Operations of IEEE. *Id.* ¶¶ 1, 4, 6, 7; FRE 602 ("Evidence to prove personal knowledge may consist of the witness's own testimony.").

Patent Owner additionally cites *City National Bank v. OPGI Management GP Inc./Gestion OPGI Inc.*, 2013 WL 3168094 at *4–6 (TTAB Apr. 26, 2013). PO Mot. Exclude 8–9. Yet this case, in addition to being non-binding, appears to be substantially distinguishable in that the deponent in that case testified about information ("the content and appearance of respondent's intranet site") that was not related to the deponent's position (in-house counsel to respondent). *City Nat'l*, 2013 WL 3168094 at *4–6. In contrast, Mr. MacPherson testifies that he "act[s] as a custodian of certain records for IEEE." Ex. 1036 ¶ 4. Moreover, the TTAB acknowledged in *City National* that, "[i]n certain cases, testimony by a person that his job responsibilities require him to be familiar with the activities of the company that occurred prior to his employment may be sufficient to lay a foundation for his subsequent testimony." *City Nat'l*, 2013 WL 3168094 at *5. We consider this to be one such case. To the extent that Patent Owner wished to dispute that Mr. MacPherson had adequate personal knowledge about the proceedings from a "conference [that] took place 20 years ago" (PO Mot. Exclude 9), Patent Owner had the opportunity to depose Mr. MacPherson, but chose not to. CTPG 73–74.

For these reasons, we deny Patent Owner's motion with respect to Exhibit 1036.

8. Exhibits 1038–1040, 1045, 1046

Patent Owner moves to exclude these documents as inadmissible hearsay and, in the case of Exhibit 1045, for lack of authentication. PO Mot. Exclude 6–7, 10. We do not rely on these exhibits in reaching our decision in this revised Final Written Decision, so we dismiss this portion of Patent Owner's motion to exclude as moot.

IV. CONCLUSION

After considering all the evidence and arguments in the complete record, we conclude that Petitioner demonstrates, by a preponderance of the evidence, that claims 12–17 and 19–21 of Patent 7,127,210 B2 are unpatentable. We dismiss as moot Petitioner's Motion to Strike, we grant Patent Owner's Motion to Exclude with respect to the objections to Exhibit 1017, deny Patent Owner's Motion to Exclude with respect to the objections to Exhibits 1006, 1007, 1010, 1012, 1015, 1016, 1018, and 1023–1028, and dismiss as moot Patent Owner's Motion to Exclude with respect to the objections to Exhibits 1038–1040, 1045, and 1046.

In summary:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
12, 13, 15, 17, 20, 21	103	Bluetooth Profiles, Nüsser	12, 13, 15, 17, 20, 21	
12, 14, 16, 19–21	103	Bluetooth Profiles, Cooper, Nüsser	12, 14, 16, 19–21	
Overall Outcome			12–17, 19–21	

Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance

of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that claims 12–17 and 19–21 of Patent 7,127,210 B2 are unpatentable based on the instituted grounds of unpatentability;

FURTHER ORDERED that that Petitioner's Motion to Strike is dismissed as moot;

FURTHER ORDERED that that Patent Owner's Motion to Exclude is granted as to Exhibit 1017, denied as to Exhibits 1006, 1007, 1010, 1012, 1015, 1016, 1018, 1023–1028, 1036, and 1037, and dismissed as moot as to Exhibits 1038–1040, 1045, and 1046; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the 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

UNIFIED PATENTS, LLC,
Petitioner,

v.

2BCOM, LLC,
Patent Owner.

IPR2020-00996
Patent 7,127,210 B2

HUDALLA, *Administrative Patent Judge*, concurring.

I concur with the majority's decision determining that claims 12–17 and 19–21 of the '210 patent are unpatentable. I write separately because I reach a determination about the public accessibility and prior art status of Bluetooth Profiles in a slightly different fashion.

Like the majority, I start with an examination of Bluetooth Profiles itself. Bluetooth Profiles bears, on its cover, a date of "December 1st 1999." Ex. 1007, 1. Another page includes a copyright notice with a date of 1999. *Id.* at 4. Still other pages include a Revision History listing various changes made on "Dec 1st 1999" for revision 1.0B, which is the asserted version of Bluetooth Profiles. *Id.* at 415–20. Patent Owner contends the dates on Bluetooth Profiles constitute inadmissible hearsay, or at least that they are

entitled to no more weight than hearsay. PO Resp. 19–20; PO Sur-reply 14–15. Although they are not dispositive of the date of public accessibility, the dates on the reference itself are relevant to assessing whether Bluetooth Profiles was publicly accessible. *See Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1376 (Fed. Cir. 2018), as amended (Sept. 20, 2018). Furthermore, Patent Owner did not timely move to exclude as hearsay the indicators of publication appearing on and within the Bluetooth Profiles document itself. As such, I consider the dates in conjunction with other record evidence. I note that the dates in Bluetooth Profiles are consistent with a recent textbook in the record that summarizes the history of the Bluetooth standards and indicates that Bluetooth Profiles had a release date of "Dec 1999." Ex. 1041, 22. Indeed, Patent Owner acknowledges that "Bluetooth Profiles is associated with a 1999 date," and only disputes whether it was publicly available as of that date. PO Resp. 24.

Importantly, Petitioner also puts forth a number of patent documents from before the time of the '210 patent to establish the availability of Bluetooth Profiles. Pet. 6–7 (citing, *inter alia*, Ex. 1012, 3:10–12; Ex. 1015, 8:8–18; Ex. 1016, 16:9–20; Ex. 1017, 18:45–57). Each of these patents references Bluetooth Profiles and associates it with a December 1999 date. *See, e.g.*, Ex. 1012, 3:10–12; Ex. 1015, 8:8–18; Ex. 1016, 16:9–20. Patent Owner contends that references within the patents to December 1999 constitute inadmissible hearsay to the extent Petitioner alleges that this is a date of publication. PO Mot. Exclude 5–6. Yet even if this were true, certain of these patents still evidence awareness of Bluetooth Profiles in the art prior to the critical date. In particular, the applications that led to three of these patents were filed prior to the critical date of the '210 patent, which is

September 20, 2001.[1] *See* Ex. 1012, code (22) (August 29, 2000, filing date); Ex. 1015, code (22) (September 8, 2000, filing date); Ex. 1016, code (22) (November 25, 2000, filing date). Although Patent Owner contends that mere references to Bluetooth Profiles in the patent documents do not confirm public accessibility (PO Resp. 20; PO Sur-reply 15–16), they do support Petitioner's showing by establishing how artisans in the field were aware of and innovated based on the standard. I also ascribe no significance to Patent Owner's arguments about how Bluetooth Profiles was not formally cited in Information Disclosure Statements in these patent applications (PO Resp. 20; PO Sur-reply 15), which places form over substance. The fact that other patentees referenced Bluetooth Profiles patent applications that predate the '210 patent supports that Bluetooth Profiles was available to the relevant public by the critical date.

Moreover, Dr. Madisetti testifies that a person of ordinary skill in the art in September 2001 "would have been aware of the Bluetooth standard and its corresponding specification documents, which included *Bluetooth Profiles*." Ex. 1003 ¶ 55. He also testifies that "textbooks and articles at the time referred to the standard and/or directed readers to the Bluetooth website for information regarding the standard." *Id.* (citing, *inter alia*, Ex. 1018, 82 n.1, 346). He further testifies that "[a]nyone could access the Bluetooth specification documents, as they were freely available on the Bluetooth

[1] Petitioner also cites a fourth patent at Exhibit 1017 that has a filing date after the priority date of the '210 patent. *See* Ex. 1017, code (22). Although the fourth patent claims priority to a provisional application that predates the critical date, Patent Owner notes that the provisional application did not reference Bluetooth Profiles in the same manner. PO Resp. 21 (citing Ex. 2008). I do not consider the fourth patent in my analysis.

website," and that he himself "would regularly visit the Bluetooth website for the latest developments as to the standard." *Id.* ¶¶ 55–56.

I credit Dr. Madisetti's testimony on this point because it is supported by, at least, a contemporaneous textbook titled *Bluetooth Demystified*. *See* Ex. 1018; *see also* Ex. 1003 ¶¶ 54–55, Attachment C10 (Dr. Hall-Ellis's testimony and supporting evidence showing publication of the textbook in 2000). *Bluetooth Demystified* states the following: "To stay updated on the status of the Bluetooth specification, inducing vendor product announcements, check the following Web page: www.bluetooth.com." Ex. 1018, 346. This testimony and evidence supports the notion that a person of ordinary skill in the art at the time of the '210 patent would have known that Bluetooth specifications, including Bluetooth Profiles, were publicly accessible at the Bluetooth website. Patent Owner's arguments against *Bluetooth Demystified* regarding its author (PO Resp. 25) do not detract from the evidence showing that the book was published prior to the critical date of the '210 patent and that the book indicates the availability of Bluetooth standards information at the Bluetooth website.

The public accessibility of Bluetooth Profile also is supported by Dr. Hall-Ellis's testimony that "the Bluetooth Profiles document was publicly accessible digitally on the Bluetooth.com website . . . at least by May 17, 2000." Ex. 1010 ¶ 51. Dr. Hall-Ellis bases her testimony on an Internet Archive printout of a notice from the Bluetooth website that states, "New revision of the Bluetooth 1.0 Specification released, 1999-12-06 Bluetooth Specification V 1.0 B is now published on the Bluetooth.com website." *Id.* at Attachment C2. She also includes testimony on how to interpret an Internet Archive printout, which supports that the printout was available on the Internet as of May 17, 2000. *Id.* ¶ 23; *see also id.* at

Attachment C2 (showing a banner dated May 17, 2000, and a URL including "20000517192715," indicating capture on May 17, 2000 at 7:27:15 p.m.). She additionally testifies that the fact that the website was captured by the Internet Archive indicates that the printout was publicly available. *Id.* ¶ 23. Accordingly, the publicly available notice in this printout, which predates the '210 patent, further supports that Bluetooth Profiles was publicly accessible at that time.

Against this showing, Patent Owner argues that Bluetooth standards were restricted based on the presence of a member login section on a Bluetooth website printout. *See* PO Resp. 20 (citing Ex. 1010, Attachment A2); PO Sur-reply 18. Nevertheless, the record includes no concrete evidence of such restriction, and I decline to speculate about the same based simply on a member login section appearing on one website printout. Furthermore, I find the evidence discussed above persuasive as to the prevalence and accessibility of Bluetooth Profiles to the relevant public even if the Bluetooth website had certain restricted areas.

Patent Owner also disputes certain of Dr. Hall-Ellis's testimony regarding MARC records and how they support the public accessibility of Bluetooth Profiles. PO Resp. 18–19; PO Sur-reply 19–20. I need not reach this evidence in order to determine that a preponderance of the evidence supports public accessibility. Patent Owner also argues that the authors of several exhibits (Exs. 1018, 1023–28) were Bluetooth contributors who had pre-publication access to standards, thus calling into question whether Bluetooth Profiles was published by December 1999. PO Resp. 21–25; PO Sur-reply 18–19. I have already discussed Exhibit 1018, (*Bluetooth Demystified*) above. As to the other exhibits, I do not reach this evidence, as I find that the evidence already discussed meets the preponderance standard.

For these reasons, I determine that Petitioner has established by a preponderance of the evidence that Bluetooth Profiles qualifies as a prior art printed publication under at least 35 U.S.C. § 102(a) based on publication before the critical date of the '210 patent, which is September 20, 2001.

Regarding Patent Owner's motion to exclude Exhibits 1017, 1018, and 1023–1028, I would reach slightly different conclusions than the majority. I do not rely on Exhibit 1017, so I would dismiss the motion to exclude Exhibit 1017 as moot.

I agree with the majority's determination that, regardless of whether certain aspects of Exhibit 1018 (*Bluetooth Demystified*) would constitute inadmissible hearsay, it was reasonable for Dr. Madisetti to support his testimony with references to the book. FRE 703. Petitioner's evidence regarding the publication of *Bluetooth Demystified* prior to the critical date of the '210 patent establishes that its contents are probative of the availability of Bluetooth standards at that time. *See* Ex. 1003 ¶¶ 54–55, Attachment C10. In my view, the probative nature of this evidence as support for Dr. Madisetti's testimony outweighs any potential prejudice arising from hearsay. Because it is not necessary to determine whether Exhibit 1018 is admissible evidence, I would dismiss Patent Owner's motion to exclude Exhibit 1018 as moot.

Regarding Exhibits 1023–1028, I would dismiss Patent Owner's motion to exclude as moot because I have not relied on these exhibits.

I join in the majority's opinion in all other respects.

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