

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC. and INSTAGRAM LLC,
Petitioner,

v.

SKKY, LLC,
Patent Owner.

Case IPR2017-00088
Patent 9,124,718 B2

Before JUSTIN T. ARBES, CARL M. DeFRANCO, and
ROBERT J. WEINSCHENK, *Administrative Patent Judges*.

WEINSCHENK, *Administrative Patent Judge*.

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

I. INTRODUCTION

Facebook, Inc. and Instagram LLC (“Petitioner”) filed a Petition (Paper 8, “Pet.”) requesting an *inter partes* review of claims 1–11 of U.S. Patent No. 9,124,718 B2 (Ex. 1001, “the ’718 patent”).¹ Skky, LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”) to the Petition. On April 26, 2017, we instituted an *inter partes* review of claims 1–11 (“the challenged claims”) of the ’718 patent on the following grounds:

Claims	Statutory Basis	Applied References
1, 3, 5, 6, and 8	35 U.S.C. § 103(a) ²	Rolf, U.S. Patent No. 7,065,342 B1 (filed Nov. 22, 2000, issued June 20, 2006) (Ex. 1003, “Rolf”); Alan Gatherer et al., <i>DSP-Based Architectures for Mobile Communications: Past, Present and Future</i> , 38:1 IEEE COMMUNICATIONS MAGAZINE 84–90 (2000) (Ex. 1005, “Gatherer”); and Frodigh et al., U.S. Patent No. 5,726,978 (filed June 22, 1996, issued Mar. 10, 1998) (Ex. 1006, “Frodigh”)
2, 7, 10, and 11	35 U.S.C. § 103(a)	Rolf; Gatherer; Frodigh; and Ben Forta et al., WAP DEVELOPMENT WITH WML AND WMLSCRIPT: THE AUTHORITATIVE SOLUTION (Matt

¹ We authorized Petitioner to add a clarifying statement to the original petition (Paper 2) regarding claim 8. Paper 7, 2–4; *see* Pet. 40.

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, which was enacted on September 16, 2011, made amendments to 35 U.S.C. §§ 102, 103. AIA § 3(b), (c). Those amendments became effective on March 16, 2013. *Id.* at § 3(n). Because the challenged claims of the ’718 patent have an effective filing date before March 16, 2013, any citations herein to 35 U.S.C. §§ 102, 103 are to their pre-AIA versions.

Claims	Statutory Basis	Applied References
		Purcell et al. eds., 2000) (Ex. 1004, “Forta”)
4 and 9	35 U.S.C. § 103(a)	Rolf; Gatherer; Frodigh; and Scot Hacker, MP3: THE DEFINITIVE GUIDE (Simon Hayes et al. eds., 2000) (Ex. 1058, “Hacker”)

Paper 9 (“Dec. on Inst.”), 18.

After institution, Patent Owner filed a Response (Paper 19, “PO Resp.”) to the Petition, and Petitioner filed a Reply (Paper 20, “Pet. Reply”) to the Response. An oral hearing was held on January 11, 2018, and a transcript of the hearing is included in the record. Paper 28 (“Tr.”).

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a). For the reasons set forth below, Petitioner has shown by a preponderance of the evidence that claims 1–11 of the ’718 patent are unpatentable.

A. Related Proceedings

The parties indicate that the ’718 patent is at issue in the following district court case: *Skky, LLC v. Facebook, Inc.*, No. 0:16-cv-00094 (D. Minn.). Pet. 1; Paper 4, 2. The parties also indicate that the following petitions for *inter partes* review or covered business method review are related to this case:

Case No.	Involved U.S. Patent No.
IPR2014-01236 ³	U.S. Patent No. 7,548,875
IPR2017-00089	U.S. Patent No. 9,118,693
IPR2017-00092	U.S. Patent No. 9,124,717
IPR2017-00097	U.S. Patent No. 8,892,465

³ The U.S. Court of Appeals for the Federal Circuit affirmed the Board’s decision in IPR2014-01236, finding claims 1–3, 5, and 15–23 of U.S. Patent No. 7,548,875 B2 unpatentable. *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1016 (Fed. Cir. 2017).

IPR2017-00550	U.S. Patent No. 9,037,502
IPR2017-00602	U.S. Patent No. 9,219,810
IPR2017-00685	U.S. Patent No. 9,203,870
IPR2017-00687	U.S. Patent No. 9,215,310
CBM2016-00091	U.S. Patent No. 9,037,502
CBM2017-00002	U.S. Patent No. 9,203,870
CBM2017-00003	U.S. Patent No. 9,219,810
CBM2017-00006	U.S. Patent No. 9,215,310
CBM2017-00007	U.S. Patent No. 9,203,956

Pet. 1–2; Paper 4, 2. Petitioner filed a second petition challenging claims 1–11 of the ’718 patent in IPR2017-00689, and we denied institution of an *inter partes* review in that case. *Facebook, Inc. v. Skky, LLC*, Case IPR2017-00689, slip op. at 8 (PTAB July 26, 2017) (Paper 9).

B. *The ’718 Patent*

The ’718 patent relates to delivering an audio or audio-visual file to an electronic device. Ex. 1001, Abstract. Specifically, the ’718 patent explains that the audio or audio-visual file is delivered wirelessly from one or more servers to the electronic device. *Id.* According to the ’718 patent, the file is transmitted in a compressed format, and the electronic device is able to receive and playback the file on demand by a user. *Id.*

C. *Illustrative Claim*

Claims 1, 6, and 10 are independent. Claim 1 is reproduced below.

1. A method of wirelessly delivering compressed digital audio or audio-visual data file to a cell phone, the method comprising:

providing a compressed digital audio or audio-visual data file for access over the Internet;

receiving a request from the cell phone, said cell phone including a receiver and digital signal processor configured for receiving and processing files transmitted by orthogonal frequency-division multiplex modulation (OFDM); and

providing for the transmission of the compressed digital audio or audio-visual data file to the cell phone by orthogonal frequency-division multiplex modulation based on the received request, wherein the transmission of the compressed digital audio or audio-visual data file is by a cellular data channel.

Ex. 1001, 33:2–17.

II. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner’s declarant, Tal Lavian, Ph.D., states that a person of ordinary skill in the art would have had “at least a bachelor’s degree in computer science, computer engineering, or electrical engineering (or equivalent degree or experience) with at least four years of experience with wireless communications systems and at least two years of experience with the communication of digital media.” Ex. 1002 ¶ 15. Patent Owner does not provide its own definition of the level of ordinary skill in the art. Patent Owner also does not dispute Dr. Lavian’s definition. Based on the evidence of record, including the types of problems and solutions described in the ’718 patent and the asserted prior art, we agree with and adopt Dr. Lavian’s definition of the level of ordinary skill in the art. *Id.* ¶¶ 15–17.

B. *Claim Construction*

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016). “Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history.” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016). An applicant may provide a different definition of the term in the specification with reasonable

clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read into the claims from the specification. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

1. “processing”

Patent Owner proposes construing the term “processing” to mean “preparing a digital audio and/or visual file for storage in memory and playback.” PO Resp. 12. Further, according to Patent Owner, when “properly construed, processing does not include playing [a] file.” *Id.* at 27. Patent Owner argues that its proposed construction is supported by the specification of the ’718 patent and certain extrinsic evidence. *Id.* at 12–13 (citing Ex. 1001, 18:44–49; Ex. 2001, 16, 46, 50, 68). Petitioner contends that Patent Owner’s proposed construction improperly limits the challenged claims based on a single passage in the specification of the ’718 patent. Pet. Reply 10–12 (citing Ex. 1001, 18:43–49, 14:58–15:3).

The portion of the ’718 patent cited by Patent Owner states that “[t]he sounds . . . are processed by the DSP (digital signal processor-‘demodulated’) 300 to the same digital data form initially stored on the database 212 (e.g., in MPEG audio format),” and, “[i]n this form, the sound clip data are written into the flash memory 302 of the device 204.” Ex. 1001, 18:43–49. This portion of the ’718 patent indicates that the term “processing” includes preparing a digital audio file for storage in memory. *Id.* However, as Petitioner points out, that is not the only description of processing in the ’718 patent. For example, the ’718 patent also states:

The processor 300 executes the device firmware, provides control for all other blocks and performs the computational tasks for the board 203. The tasks performed by the processor 300

include control of the board's units, monitoring of keys pressed by the user and processing of key-press events, reception of information from the computer through the computer digital interface, reception of caller ID information through the phone digital interface, reception of packed sound clips through the phone analogue or digital interface, unpacking and then playing back sound clips through a built-in speaker connected to the analogue interface of the accessory unit 204, support of a voice menu-driven user interface, and performance of other auxiliary functions.

Id. at 14:58–15:3; *see also id.* at 14:26–32 (“a chip performing the same functions of the board may instead be embedded in the phone itself”). This portion of the '718 patent indicates that the term “processing” also includes other functions, such as functions directed to playback of the file. *Id.*

For the foregoing reasons, we construe the term “processing” to include preparing a digital audio and/or visual file for storage in memory and playback. We note that the term “processing” may include other functions. However, as discussed below, the asserted prior art teaches preparing a digital audio and/or visual file for storage in memory and playback. *See infra* Section II.C.2. Therefore, we determine that further construction of the term “processing” is not necessary to resolve the parties’ disputes regarding the asserted grounds of unpatentability in this case. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

C. *Obviousness of Claims 1, 3, 5, 6, and 8 over Rolf, Gatherer, and Frodigh*

Petitioner argues that claims 1, 3, 5, 6, and 8 would have been obvious over Rolf, Gatherer, and Frodigh. Pet. 3. A claim is unpatentable as obvious under 35 U.S.C. § 103(a) 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 the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any objective indicia of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We have considered the parties’ arguments and supporting evidence, and we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 3, 5, 6, and 8 would have been obvious over Rolf, Gatherer, and Frodigh.

1. *Overview of Rolf, Gatherer, and Frodigh*

Rolf relates to “[a] mobile cellular telephone [that] is used to select a music recording from a remote source, such as [an] online music recording storage facility, and wirelessly receive the selected music recording.” Ex. 1003, Abstract. Rolf teaches that the music recording storage facility is at an address on the World Wide Web and includes a database of music recordings files that are cataloged by selectable fields. *Id.* at 5:32–39. Rolf also teaches that a user may download or stream the music recording files from the database to a wireless device, such as a cellular phone, over the Internet. *Id.* at 3:17–21, 5:30–39, 5:49–53, 6:23–30.

Gatherer relates to digital signal processors (“DSPs”). Ex. 1005, 84.⁴ Gatherer teaches that “[p]rogrammable DSPs [were] pervasive in the wireless handset market for digital cellular telephony.” *Id.* Gatherer also explains that “DSPs will continue to play a dominant, and in fact increasing, role in wireless communications devices.” *Id.*

Frodigh relates to “[a] method and system of adaptive channel allocation in a frequency division multiplexed system.” Ex. 1006, Abstract. Frodigh teaches that frequency division multiplexing (“FDM”) is a method of transmitting data that is applicable to cellular systems, and that orthogonal frequency division multiplexing (“OFDM”) “is a particular method of FDM that is particularly suited for cellular systems.” *Id.* at 1:59–63. Specifically, Frodigh explains that using OFDM in a cellular system “results in efficient use of the bandwidth available to a system” and “has the effect of reducing intersymbol interference.” *Id.* at 2:38–60.

2. *Claim 1*

Claim 1 recites “[a] method of wirelessly delivering compressed digital audio or audio-visual data file to a cell phone.” Ex. 1001, 33:2–4. Rolf teaches wirelessly delivering music recording files that are encoded by a compression algorithm to a cellular phone. Pet. 15–16; Ex. 1003, 1:25–38, 5:21–24, 5:46–53. Patent Owner does not dispute that the combination of Rolf, Gatherer, and Frodigh teaches the preamble of claim 1.

Claim 1 recites “providing a compressed digital audio or audio-visual data file for access over the Internet.” Ex. 1001, 33:5–6. Rolf teaches a

⁴ The parties cite to the original page numbers of Gatherer, rather than the page numbers Petitioner added when it filed Gatherer as Exhibit 1005 in this case. Thus, we also cite to the original page numbers of Gatherer.

remote storage facility with a database of compressed music recording files. Pet. 16–18; Ex. 1003, 5:30–39, 9:4–6. Rolf also teaches that a user can retrieve a compressed music recording file from the database to a wireless device, such as a cellular phone, over the Internet. Pet. 16–18; Ex. 1003, 3:17–21, 5:30–39, 5:49–53. Patent Owner does not dispute that the combination of Rolf, Gatherer, and Frodigh teaches the above limitation of claim 1.

Claim 1 recites “receiving a request from the cell phone, said cell phone including a receiver and digital signal processor configured for receiving and processing files transmitted by orthogonal frequency-division multiplex modulation (OFDM).” Ex. 1001, 33:7–11. Rolf teaches requesting a music recording file from a database at a remote storage facility using a cellular phone. Pet. 18–19; Ex. 1003, 1:39–41, 5:49–53, 9:10–15. Rolf also teaches that the cellular phone includes a receiver and processor configured for receiving and playing music recording files. Pet. 19–21, 23–24; Ex. 1002 ¶¶ 83, 91; Ex. 1003, 1:17–21, 1:28–35, 5:18–21, 5:46–53, 6:20–26, 7:53–55, 10:43–47, Figs. 1, 4.

Further, Gatherer teaches a cellular phone that includes a digital signal processor configured for receiving and processing files. Pet. 21, 29–32; Ex. 1002 ¶¶ 85, 101–107; Ex. 1005, 84 (“Programmable digital signal processors (DSPs) are pervasive in the wireless handset market for digital cellular telephony.”), Fig. 1 (showing that “DSP functions” include a GSM vocoder, a channel codec, interleaving/deinterleaving, ciphering/deciphering, burst formatting, a demodulator, and an equalizer). Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 24–25; Ex. 1002 ¶ 92; Ex. 1006, 1:59–2:18, 7:51–8:9. In Petitioner’s

asserted combination, Rolf's cellular phone includes Gatherer's digital signal processor to receive and process compressed music recording files (Pet. 21; Ex. 1002 ¶ 86) transmitted from a remote storage facility using Frodigh's OFDM (Pet. 25; Ex. 1002 ¶ 93).

Patent Owner argues that Rolf does not teach a cellular phone including a digital signal processor. PO Resp. 23–24 (citing Pet. 20–21; Ex. 1002 ¶ 84). Patent Owner's argument is not persuasive because it addresses Rolf individually, not the combination of Rolf, Gatherer, and Frodigh proposed by Petitioner. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.”). As discussed above, Rolf teaches a cellular phone with a processor, and Gatherer teaches more specifically a cellular phone with a processor that is a digital signal processor configured for receiving and processing files. Pet. 21, 29–32; Ex. 1002 ¶¶ 85, 101–107; Ex. 1005, 84 (“Programmable digital signal processors (DSPs) are pervasive in the wireless handset market for digital cellular telephony.”), Fig. 1 (showing that “DSP functions” include GSM vocoder, channel codec, interleaving/deinterleaving, ciphering/deciphering, burst formatting, demodulator, and equalizer).

Patent Owner argues that the combination of Rolf, Gatherer, and Frodigh also does not teach a cellular phone including a digital signal processor. PO Resp. 25–26. Specifically, Patent Owner contends that “Gatherer does not explain the relationship between a digital signal processor and the remaining parts of the cell phone, or how a digital signal processor would be integrated into the device disclosed by Rolf.” *Id.* at 25. Patent Owner's argument is not persuasive. Figure 1 of Gatherer is a

functional block diagram of a cellular phone that shows the relationship between the digital signal processor and the other components of the cellular phone, and, thus, demonstrates how the digital signal processor would have been integrated into Rolf's cellular phone.⁵ Pet. Reply 6–7; Ex. 1005, Fig. 1.

Patent Owner argues that Rolf does not disclose a receiver and digital signal processor configured for receiving and processing files. PO Resp. 27–29. In particular, Patent Owner contends that “Petitioners rely only on Rolf's ability to ‘play’ the music files it receives,” but when “properly construed, processing does not include playing the file.” *Id.* at 27. Patent Owner's argument is not persuasive. Petitioner does not rely solely on Rolf as teaching a receiver and digital signal processor configured for receiving and processing files. Petitioner relies on the combination of Rolf, Gatherer, and Frodigh as teaching this limitation. Pet. 21, 28–32. Specifically, Gatherer teaches a digital signal processor configured for receiving and processing files (Pet. 21, 29–32; Ex. 1002 ¶¶ 85, 101–107; Ex. 1005, 84, Fig. 1), and Frodigh teaches a receiver configured for receiving and processing files transmitted by OFDM (Pet. 28–29; Ex. 1002 ¶¶ 92, 98–99; Ex. 1006, 7:51–8:9, 8:33–63, Fig. 3C). Patent Owner does not dispute in the Response that Gatherer and Frodigh teach a receiver and digital signal processor configured for receiving and processing files. See PO Resp. 27–29; Tr. 37:11–16, 38:3–16.

⁵ As discussed below, a person of ordinary skill in the art would have been motivated to implement Rolf's cellular phone using Gatherer's digital signal processor. See *infra* Section II.C.7.

Further, the combination of Rolf, Gatherer, and Frodigh teaches a receiver and digital signal processor configured for receiving and processing files, even under Patent Owner's proposed construction of the term "processing." Specifically, the portion of the '718 patent cited by Patent Owner in support of its proposed construction for the term "processing" indicates that a digital signal processor prepares a digital audio file for storage in memory and playback by performing demodulation. Ex. 1001, 18:43–49 ("[t]he sounds . . . are processed by the DSP (digital signal processor-'demodulated') 300 to the same digital data form initially stored on the database 212"). In that regard, Gatherer teaches a digital signal processor that includes a demodulator. Ex. 1005, Fig. 1. Similarly, Frodigh teaches a receiver that includes a demodulator. Ex. 1006, 8:33–38. Thus, the combination of Rolf, Gatherer, and Frodigh teaches a receiver and digital signal processor configured for preparing a digital audio file transmitted by OFDM for storage in memory and playback.

Patent Owner argues that "Frodigh does not teach a system for requesting and transmitting audio or audio-visual data files." PO Resp. 29. According to Patent Owner, "[i]nstead, Frodigh teaches a method and system for allocating channels in an OFDM system to reduce the amount of interference between channels." *Id.* (citing Ex. 1006, 4:26–31, 6:30–33). Patent Owner's argument is not persuasive because it addresses Frodigh individually, not the combination of Rolf, Gatherer, and Frodigh proposed by Petitioner. *See Keller*, 642 F.2d at 426 ("[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references."). As discussed above, Rolf teaches requesting a music recording file from a database in a remote

storage facility using a cellular phone (Pet. 18–19; Ex. 1003, 1:39–41, 5:49–53, 9:10–15), and Frodigh teaches using OFDM to transmit data to and from a cellular phone (Pet. 24–25; Ex. 1006, 1:59–2:18, 7:51–8:9).

Claim 1 recites “providing for the transmission of the compressed digital audio or audio-visual data file to the cell phone by orthogonal frequency-division multiplex modulation based on the received request, wherein the transmission of the compressed digital audio or audio-visual data file is by a cellular data channel.” Ex. 1001, 33:12–17. Rolf teaches transmitting a compressed music recording file from a database to a cellular phone using a cellular data channel based on a user’s request. Pet. 32–33; Ex. 1003, 1:17–21, 1:25–28, 1:35–38, 3:17–21, 5:37–39, 5:46–53, 8:63–9:3. Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 33–34; Ex. 1006, 1:59–2:18, 7:51–8:9, 8:30–32. In Petitioner’s asserted combination, Rolf’s cellular phone receives a compressed music recording file that is transmitted using Frodigh’s OFDM. Pet. 25, 33; Ex. 1002 ¶ 93. Other than the arguments discussed previously, Patent Owner does not dispute that the combination of Rolf, Gatherer, and Frodigh teaches the above limitation of claim 1.

3. *Claim 3*

Claim 3 depends from claim 1, and recites “storing at least a portion of the compressed digital audio or audio-visual data file on the cell phone.” Ex. 1001, 33:20–22. Rolf teaches streaming a compressed music recording file through a buffer in a memory of a cellular phone. Pet. 34–36; Ex. 1003, 6:26–30, Fig. 4. Other than the arguments discussed above for claim 1, Patent Owner does not dispute that the combination of Rolf, Gatherer, and Frodigh teaches the above limitation of claim 3. PO Resp. 33.

4. *Claim 5*

Claim 5 depends from claim 1, and recites “wherein the compressed digital audio or audio-visual data file is attached to a library.” Ex. 1001, 33:26–27. Rolf teaches cataloging and storing compressed music recording files in a database at a remote storage facility. Pet. 37; Ex. 1003, 5:32–37. Because the compressed music recording files in Rolf are cataloged and stored in the database, those files are attached to the database. Pet. 37; Ex. 1002 ¶ 136. Rolf also teaches that the compressed music recording files include information pertaining to the address of the database at the remote storage facility. Pet. 37–38; Ex. 1003, 6:23–26, 10:8–11.

Patent Owner responds that Petitioner provides no support for its contention that a “library is a database or that storing a file in a database means the file is attached to the database.” PO Resp. 34. According to Patent Owner, “a file need not be attached to a database.” *Id.* Patent Owner also argues that location information “does not mean those files are ‘attached to a library.’” *Id.* Patent Owner’s argument is not persuasive. Neither party proposes an express construction of the term “attached” or the term “library.” See Pet. 4; PO Resp. 11–13, 33–34. The ’718 patent states that “[a] library or collection of uniquely edited clips may be provided to the consumer for browsing and selecting files to be stored on the electronic device.” Ex. 1001, 5:24–26. This portion of the ’718 patent indicates that a library is a collection of cataloged and stored files. *Id.* Thus, the specification of the ’718 patent supports Petitioner’s position that the phrase “attached to a library” in claim 5 includes files that are cataloged and stored in a database (as in Rolf).

5. *Claim 6*

Claim 6 recites limitations similar to those discussed above for claim 1. Ex. 1001, 33:28–42. Claim 6 further recites receiving a request from the cell phone “for the digital audio or audio-visual data file,” and providing for the “streaming” transmission of the compressed digital audio or audio-visual file to the cell phone by OFDM. *Id.* Rolf teaches requesting a compressed music recording file from a database at a remote storage facility using a cellular phone (Pet. 16–19, 38–39; Ex. 1003, 1:39–41, 5:30–53, 9:4–15), and streaming the requested music recording file to the cellular phone (Pet. 39–40; Ex. 1003, 6:20–30).

Patent Owner responds that Petitioner does not address the limitation of claim 6 that recites receiving a request from the cell phone “for the digital audio or audio-visual data file.” PO Resp. 35. Patent Owner’s argument is not persuasive. For certain limitations of claim 6, Petitioner refers back to its analysis of claim 1. Pet. 39 (“the preamble and limitations [a]–[b] of claims 1 and 6 are not materially different for purposes of Ground 1”); *see CRFD Research, Inc. v. Matal*, 876 F.3d 1330, 1345–46 (Fed. Cir. 2017) (agreeing with the petitioner that it “incorporated [an] argument into other grounds of unpatentability . . . by direct citation to [the] argument in the petition”). In particular, for claim 1, Petitioner argues that “Rolf discloses providing access to a plurality of compressed *digital audio or audio-visual data files*.” *Id.* at 18–19 (emphasis added). Further, as discussed above, Rolf teaches requesting a compressed music recording file (i.e., a digital audio file) from a database at a remote storage facility using a cellular phone. Pet. 16–19, 38–39; Ex. 1003, 1:39–41, 5:30–53, 9:4–15.

6. *Claim 8*

Claim 8 depends from claim 6, and recites “storing at least a portion of the compressed digital audio or audio-visual data file on the cell phone.” Ex. 1001, 34:1–3. In other words, claim 8 recites the same limitation as claim 3. *Id.* at 33:20–22. As discussed above, Rolf teaches streaming a compressed music recording file through a buffer in a memory of a cellular phone. Pet. 34–36, 40; Ex. 1003, 6:26–30, Fig. 4.

Patent Owner responds that Petitioner “presents no argument regarding claim 8.” PO Resp. 35. Patent Owner’s argument is not persuasive. As discussed above, Petitioner explains specifically how Rolf teaches the limitation of claim 3. Pet. 34–36 (citing Ex. 1003, 6:26–30, Fig. 4). Petitioner argues that claims 3 and 8 would have been obvious based on the same ground of unpatentability. Pet. 15 (“Claims 1, 3, 5, 6, 8 Are Obvious Over Rolf in View of Gatherer, and Frodigh”) (emphasis omitted); *see also* Ex. 1002 ¶¶ 143, 144 (stating that Dr. Lavian’s analysis for claim 3 applies to claim 8). Further, the Petition states that Petitioner’s analysis for claim 3 applies to claim 8. Pet. 40.

7. *Reasons for Combining Rolf, Gatherer, and Frodigh*

Petitioner argues that a person of ordinary skill in the art would have had reason to combine the cited teachings of Rolf, Gatherer, and Frodigh. Pet. 21–23, 25–27 (citing Ex. 1002 ¶¶ 85–90, 93–95). We agree with and adopt Petitioner’s reasoning. Specifically, Rolf, Gatherer, and Frodigh relate to the same field of endeavor as the ’718 patent, that is, wireless communication. Pet. 21–23, 25–27; Ex. 1001, 1:19–21; Ex. 1002 ¶¶ 86, 93; Ex. 1003, 1:17–21; Ex. 1005, 89 (“Audio and visual entertainment could be delivered wirelessly to mobile subscribers.”); Ex. 1006, 1:61–63, 7:58–59.

It would have been obvious to implement Rolf's cellular phone using Gatherer's digital signal processor because of the advantages offered by Gatherer's digital signal processor, such as increased flexibility and processing power. Pet. 21–23; Ex. 1002 ¶¶ 87–90; Ex. 1005, 84 (“flexibility is becoming more of an issue, and therefore the programmability offered by DSPs is even more desirable”), 85 (“this has led to an increase in the fraction of the DSP MIPS used by something other than physical layer 1”). It would have been obvious to transmit compressed music recording files to Rolf's cellular phone using Frodigh's OFDM because of the advantages offered by Frodigh's OFDM, such as increased efficiency and reduced interference. Pet. 25–27; Ex. 1002 ¶¶ 94–95; Ex. 1006, 2:38–60. Further, a person of ordinary skill in the art reasonably would have expected the asserted combination of Rolf, Gatherer, and Frodigh to work. Pet. 21–23, 25–27; Ex. 1002 ¶¶ 90, 95.

Patent Owner responds that a person of ordinary skill in the art would not have had reason to combine Rolf and Gatherer or a reasonable expectation that the combination would work. PO Resp. 26–27. Specifically, Patent Owner argues that Rolf relates to a third generation (“3G”) network, whereas Gatherer relates to a Global System for Mobile Communications (“GSM”), or second generation (“2G”), network. *Id.* at 26 (citing Ex. 1003, 3:25; Ex. 1005, 4). According to Patent Owner, Gatherer indicates “that the application of GSM principles to 3G technology [was] ‘debatable’ and [was] based on the assumption that 3G products will evolve similarly to GSM products.” PO Resp. 26 (citing Ex. 1005, 4). Thus, Patent Owner concludes that “a person of ordinary skill, armed with the knowledge of Gatherer, would not be motivated to apply GSM or 2G principles to 3G

knowing that the technologies could evolve in very different ways.” PO Resp. 26.

Patent Owner’s argument is not persuasive. First, although Rolf states that encoded music data is “preferably” transmitted by a 3G network, Rolf is not limited to a 3G network. Ex. 1003, 3:21–25 (“the encoded music and/or informational data is *preferably* transmitted via a packet switch network, . . . *such as* by a next- or third-generation wireless communications network” (emphases added)). Rolf “must be considered for everything that it teaches, not simply the . . . preferred embodiment” that operates in a 3G network. *See In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012). Second, Petitioner does not propose applying GSM or 2G principles to a 3G network. *See* Pet. 21–23. Rather, Petitioner proposes implementing Rolf’s cellular phone using a digital signal processor. *Id.*; Ex. 1002 ¶ 86. Third, as Petitioner points out, Gatherer indicates that a digital signal processor would have worked in a 3G network. Pet. Reply 4–5; Ex. 1005, 87 (“In this section we discuss how coprocessors can complement the function of programmable DSPs in the implementation of a flexible 3G platform.”), 89 (“We estimate that to support 240 3G voice channels . . . would require a 45K gate coprocessor and only 6 MHz of DSP processing on a C6x.”).

Patent Owner further argues that “Gatherer does not explain the relationship between a digital signal processor and the remaining parts of the cell phone, or how a digital signal processor would be integrated into the device disclosed by Rolf.” PO Resp. 25. Patent Owner’s argument is not persuasive. As discussed above, Figure 1 of Gatherer is a functional block diagram of a cellular phone that shows the relationship between the digital signal processor and the other components of the cellular phone, and, thus,

demonstrates how a digital signal processor would have been integrated into Rolf's cellular phone. Ex. 1005, Fig. 1. In addition, Dr. Lavian explains that digital signal processors were widely available as off-the-shelf components with functionality known to a person of ordinary skill in the art. Ex. 1002 ¶ 90. We credit Dr. Lavian's testimony, which is consistent with the teachings of Gatherer. We also note that "[i]t is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements. . . . Rather, the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art." *In re Mouttet*, 686 F.3d 1322, 1332–33 (Fed. Cir. 2012).

Patent Owner also responds that a person of ordinary skill in the art would not have had reason to combine Rolf and Frodigh. PO Resp. 30–32. Specifically, Patent Owner argues that Rolf relates to a 3G network that uses Code Division Multiple Access ("CDMA"), not OFDM. *Id.* at 30. Patent Owner points out that the Special Mobile Group ("SMG") of the European Telecommunications Standards Institute ("ETSI") chose CDMA over OFDM for use in the 3G standard. *Id.* 30–31 (citing Ex. 2003, 7, 23–25; Ex. 2004, 2, 4). According to Patent Owner, "[t]he group concluded that OFDM's drawbacks kept it from final consideration," and "OFDM did not receive a single vote to form the basis for 3G." PO Resp. 30–31 (citing Ex. 2003, 7; Ex. 2004, 2, 4). Patent Owner concludes that a person of ordinary skill in the art would have been aware of the SMG's findings and would have been "discouraged from applying OFDM to cellular systems." PO Resp. 32.

Patent Owner's argument is not persuasive. As discussed above, although Rolf states that encoded music data is "preferably" transmitted by a 3G network, Rolf is not limited to a 3G network. Ex. 1003, 3:21–25. Further, the evidence cited by Patent Owner regarding the SMG's decision to use CDMA in the 3G standard indicates that there were advantages and drawbacks to both OFDM and CDMA. Ex. 2004, 1–4. For example, the SMG explained that OFDM had the advantages of "high flexibility in radio resource management," "robustness of OFDM modulation in all environments," and "maximal benefit from frequency hopping," but had the drawbacks of "high constraints on power amplifier linearity," "potential decrease of performance due to synchronisation impairments," and "adjacent channel interference." *Id.* at 1–2 (emphases omitted). Similarly, the SMG identified several advantages and drawbacks for CDMA. *Id.* at 3–4.

Although "a given course of action often has simultaneous advantages and disadvantages," that "does not necessarily obviate motivation to combine." *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006). Here, Frodigh teaches that OFDM is particularly suited for cellular systems, such as the one in Rolf, and identifies specific advantages of using OFDM, such as increased efficiency and reduced interference. Ex. 1006, 1:59–63, 2:38–60. Further, Dr. Lavian explains that it was well-known to use OFDM in a cellular system at the time of the '718 patent. Ex. 1002 ¶ 95. Dr. Lavian also explains that it was well-known to use a digital signal processor in a cellular system to process files transmitted by OFDM. *Id.* ¶¶ 102–103. We credit Dr. Lavian's testimony, which is consistent with the teachings of Frodigh.

We note that in IPR2014-01236, which involved a patent related to the '718 patent, the Board determined that the petitioner in that case had shown sufficiently that it would have been obvious to use OFDM with Rolf's cellular system. *MindGeek, s.a.r.l. v. Skky, Inc.*, Case IPR2014-01236, slip op. at 18–22 (PTAB Jan. 29, 2016) (Paper 45). The U.S. Court of Appeals for the Federal Circuit held that substantial evidence supported the Board's determination. *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1022 (Fed. Cir. 2017). Although the petitioner in IPR2014-01236 relied on a different reference to teach OFDM, that reference, like Frodigh, expressly indicated the desirability and advantages of OFDM. *Id.* (quoting the applied reference's statement that OFDM "is particularly attractive because it can be implemented simply and inexpensively by retrofitting existing [frequency modulation] communication systems"); Ex. 1006, 1:59–63, 2:38–60.

8. *Summary*

For the reasons discussed above, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 3, 5, 6, and 8 would have been obvious over Rolf, Gatherer, and Frodigh.

D. *Obviousness of Claims 2, 7, 10, and 11 over Rolf, Gatherer, Frodigh, and Forta*

Petitioner argues that claims 2, 7, 10, and 11 would have been obvious over Rolf, Gatherer, Frodigh, and Forta. Pet. 3. We have considered the parties' arguments and supporting evidence, and we determine that Petitioner has shown by a preponderance of the evidence that claims 2, 7, 10, and 11 would have been obvious over Rolf, Gatherer, Frodigh, and Forta.

1. *Overview of Forta*

Forta relates to a Wireless Application Protocol (“WAP”). Ex. 1004, 1.⁶ Forta explains that WAP is a communications protocol based on Hypertext Transfer Protocol (“HTTP”) that is designed specifically for wireless communication between devices, such as phones, and servers. *Id.* Forta teaches that “WAP does for wireless devices what HTTP does for Web browsers—it allows them to become clients in an Internet-based client/server world.” *Id.* at 10. Forta also provides a number of examples of WAP being used to provide data to a cellular phone, such as an Amazon.com website with a menu of “Books,” “Music,” and “DVD & Video.” *Id.* at 315–317, Fig. 13.3.

2. *Claims 2 and 7*

Claim 2 depends from claim 1, and recites “wherein the compressed digital audio or audio-visual data file is provided by a website.” Ex. 1001, 33:18–19. Claim 7 depends from claim 6, and recites the same limitation as claim 2. *Id.* at 33:43–44. Rolf teaches a remote storage facility with a database of compressed music recording files that is at an address on the World Wide Web. Pet. 41; Ex. 1003, 5:32–35, 12:51–55. Forta teaches WAP, which allows a cellular phone to access information provided by a website. Pet. 41–43; Ex. 1004, 10 (“WAP does for wireless devices what HTTP does for Web browsers—it allows them to become clients in an Internet-based client/server world.”), 316 (“This is the Amazon.com site that is written explicitly for phones with a WAP browser in them.”) (emphasis

⁶ The parties cite to the original page numbers of Forta, rather than the page numbers Petitioner added when it filed Forta as Exhibit 1004 in this case. Thus, we also cite to the original page numbers of Forta.

omitted), Fig. 13.3 (“Music”). In Petitioner’s asserted combination, Rolf’s cellular phone uses Forta’s WAP to access a compressed music recording file provided by a website. Pet. 43; Ex. 1002 ¶ 117.

Patent Owner responds that Forta teaches “simplified, menu based representations of a website viewable on cellular phones,” which “are not the same as a website viewed on a conventional computer.” PO Resp. 36–37 (citing Ex. 1004, 99–100). Further, according to Patent Owner, Forta’s WAP limits the amount of information that can be delivered to, and displayed on, the cellular phone at one time. PO Resp. 37 (citing Ex. 1004, 107–108). Patent Owner’s argument is not persuasive. Claims 2 and 7 only recite that the compressed digital audio or audio-visual data file is provided by a website. Ex. 1001, 33:18–19, 33:43–44. Similarly, the specification of the ’718 patent explains that “a website suitable for viewing and selecting . . . sound and/or image clips or entire files may be used.” *Id.* at 3:36–41. Thus, neither the claim language nor the specification requires that the recited website be displayed in the same manner as a website on a conventional computer, or that recited website provide a certain amount of information.

3. *Claim 10*

Claim 10 recites “[a] method of wirelessly delivering compressed digital audio or audio-visual data files to a cell phone.” Ex. 1001, 34:7–9. Rolf teaches wirelessly delivering music recording files that are encoded by a compression algorithm to a cellular phone. Pet. 15–16, 46; Ex. 1003, 1:25–38, 5:21–24, 5:46–53.

Claim 10 recites “providing a representation of a library of compressed digital audio or audio-visual data files accessible via a website

or a cell phone.” Ex. 1001, 34:10–12. Rolf teaches a remote storage facility with a personal storage unit that serves as a directory or index of the compressed music recording files that a user has purchased. Pet. 46–49; Ex. 1003, 2:52–67, 13:5–13. Rolf also teaches providing a menu or listing of the compressed music recording files in the user’s personal storage unit to a wireless device, such as a cellular phone. Pet. 46–49; Ex. 1003, 1:64–67, 3:17–21, 5:30–39, 5:49–53, 9:10–15, 12:51–55, 13:5–13. Forta teaches that a cellular phone may access information via a website using WAP. Pet. 41–43, 48–49; Ex. 1004, 10 (“WAP does for wireless devices what HTTP does for Web browsers—it allows them to become clients in an Internet-based client/server world.”), 316 (“This is the Amazon.com site that is written explicitly for phones with a WAP browser in them.”) (emphasis omitted), Fig. 13.3 (“Music”). In Petitioner’s asserted combination, Rolf’s cellular phone uses Forta’s WAP to access a menu or listing of the compressed music recording files in a user’s personal storage unit that is provided by a website. Pet. 43, 49; Ex. 1002 ¶ 117.

Claim 10 recites “receiving a first request from a cell phone associated with a user for the representation of a library, said cell phone including a receiver and digital signal processor configured for receiving and processing digital audio or audio-visual data files transmitted by orthogonal frequency-division multiplex modulation (OFDM).” Ex. 1001, 34:13–18. Rolf teaches requesting a menu or listing of the compressed music recording files in a user’s personal storage unit using a cellular phone. Pet. 50–51; Ex. 1003, 1:64–67, 9:10–15, 13:5–13. Rolf teaches that a user enters a password to access the personal storage unit from the cellular phone, and, thus, indicates that the cellular phone is associated with the user. Pet. 50–51; Ex.

1003, 2:62–67. Rolf also teaches that the cellular phone includes a receiver and processor configured for receiving and playing music recording files. Pet. 19–21, 23–24, 51; Ex. 1002 ¶¶ 83, 91; Ex. 1003, 1:17–21, 1:28–35, 5:18–21, 5:46–53, 6:20–26, 7:53–55, Figs. 1, 4.

Further, Gatherer teaches a cellular phone that includes a digital signal processor configured for receiving and processing files. Pet. 21, 29–32, 51; Ex. 1002 ¶¶ 85, 101–107; Ex. 1005, 84 (“Programmable digital signal processors (DSPs) are pervasive in the wireless handset market for digital cellular telephony.”), Fig. 1 (showing that “DSP functions” include a GSM vocoder, a channel codec, interleaving/deinterleaving, ciphering/deciphering, burst formatting, a demodulator, and an equalizer). Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 24–25, 51; Ex. 1002 ¶ 92; Ex. 1006, 1:59–2:18, 7:51–8:9. In Petitioner’s asserted combination, Rolf’s cellular phone includes Gatherer’s digital signal processor to receive and process compressed music recording files (Pet. 21, 51; Ex. 1002 ¶ 86) transmitted from a remote storage facility using Frodigh’s OFDM (Pet. 25, 51; Ex. 1002 ¶ 93).

Claim 10 recites “associating the user of the cell phone with the representation of the library of compressed digital audio or audio-visual data files.” Ex. 1001, 34:19–21. Rolf teaches that a personal storage unit serves as a directory or index of the compressed music recording files that a user has purchased. Pet. 46–49, 51; Ex. 1003, 2:52–67, 13:5–13. Rolf also teaches that the user enters a password to access a menu or listing of the compressed music recording files in the personal storage unit using a cellular phone. Pet. 50–51; Ex. 1003, 2:62–67.

Claim 10 recites “providing for the transmission of the representation of the library of the compressed digital audio or audio-visual data files to the cell phone by orthogonal frequency-division multiplex modulation based on the received first request.” Ex. 1001, 34:22–26. Rolf teaches providing a menu or listing of the compressed music recording files in a user’s personal storage unit to a cellular phone based on a request from the user. Pet. 51–53; Ex. 1003, 8:56–59, 9:10–15, 12:49–51, 13:5–13. Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 24–25, 52–53; Ex. 1002 ¶ 92; Ex. 1006, 1:59–2:18, 7:51–8:9. In Petitioner’s asserted combination, Rolf’s cellular phone receives a menu or listing of the compressed music recording files in a user’s personal storage unit that is transmitted using Frodigh’s OFDM. Pet. 25, 52–53; Ex. 1002 ¶ 93.

Claim 10 recites “receiving a second request from the cell phone selecting at least one compressed digital audio or audio-visual data file associated with the library.” Ex. 1001, 34:27–29. Rolf teaches requesting a compressed music recording file from a personal storage unit using a cellular phone. Pet. 53–54; Ex. 1003, 1:64–67, 2:62–67, 9:10–15, 13:5–13.

Claim 10 recites “providing for the transmission of the selected at least one compressed digital audio or audio-visual data file to the cell phone by orthogonal frequency-division multiplex modulation based on the received second request.” Ex. 1001, 34:30–33. Rolf teaches transmitting a compressed music recording file from a personal storage unit at a remote storage facility to a cellular phone based on a user’s request. Pet. 32–33, 54–55; Ex. 1003, 1:17–21, 1:25–28, 1:35–38, 2:62–67, 3:17–21, 5:37–39, 5:46–53, 8:63–9:3, 9:10–15, 13:5–13. Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 33–34, 54; Ex. 1006, 1:59–

2:18, 7:51–8:9, 8:30–32. In Petitioner’s asserted combination, Rolf’s cellular phone receives a compressed music recording file from a user’s personal storage unit that is transmitted using Frodigh’s OFDM. Pet. 25, 54; Ex. 1002 ¶ 93.

Claim 10 recites “receiving a request via a website to modify a portion of the representation associated with the user of the cell phone.” Ex. 1001, 34:34–36. Rolf teaches that a user of a cellular phone may request to purchase a music recording file and then add it to a menu or listing of the compressed music recording files in the user’s personal storage unit (i.e., modifying the menu or listing of files). Pet. 55–57; Ex. 1003, 11:48–65, 12:7–12, 13:5–13. Forta teaches that a cellular phone may transmit information via a website using WAP. Pet. 41–43, 57; Ex. 1004, 10 (“WAP does for wireless devices what HTTP does for Web browsers—it allows them to become clients in an Internet-based client/server world.”), 316 (“This is the Amazon.com site that is written explicitly for phones with a WAP browser in them.”) (emphasis omitted), Fig. 13.3 (“Music”). In Petitioner’s asserted combination, Rolf’s cellular phone uses Forta’s WAP to add a music recording file to a menu or listing of the music recording files in a user’s personal storage unit. Pet. 43, 57; Ex. 1002 ¶ 117.

Claim 10 recites “providing for the transmission of the modified portion of the representation of the library by orthogonal frequency-division multiplex modulation to the cell phone.” Ex. 1001, 34:37–39. Rolf teaches providing a modified menu or listing that includes a newly purchased music recording file to a cellular phone. Pet. 57–58; Ex. 1003, 9:10–15, 12:7–12, 13:5–13. Frodigh teaches using OFDM to transmit data to and from a cellular phone. Pet. 24–25, 57–58; Ex. 1002 ¶ 92; Ex. 1006, 1:59–2:18,

7:51–8:9. In Petitioner’s asserted combination, Rolf’s cellular phone receives a modified menu or listing of the compressed music recording files in a user’s personal storage unit that is transmitted using Frodigh’s OFDM. Pet. 25, 57–58; Ex. 1002 ¶ 93.

Other than the arguments discussed above for claims 1 and 2, Patent Owner does not dispute that the combination of Rolf, Gatherer, Frodigh, and Forta teaches the limitations of claim 10. PO Resp. 38.

4. *Claim 11*

Claim 11 depends from claim 10, and recites “storing at least a portion of the compressed digital audio or audio-visual data file on the cell phone.” Ex. 1001, 34:40–42. In other words, claim 11 recites the same limitation as claim 3. *Id.* at 33:20–22. As discussed above, Rolf teaches streaming a compressed music recording file through a buffer in a memory of a cellular phone. Pet. 34–36, 58; Ex. 1003, 6:26–30, Fig. 4. Other than the arguments discussed above for claims 1, 2, and 3, Patent Owner does not dispute that the combination of Rolf, Gatherer, Frodigh, and Forta teaches the above limitation of claim 11. PO Resp. 39.

5. *Reasons for Combining Rolf, Gatherer, Frodigh, and Forta*

As discussed above, a person of ordinary skill in the art would have had reason to combine the cited teachings of Rolf, Gatherer, and Frodigh. *See supra* Section II.C.7. Petitioner argues that a person of ordinary skill in the art also would have had reason to combine the cited teachings of Rolf, Gatherer, and Frodigh with the cited teachings of Forta. Pet. 43–45 (citing Ex. 1002 ¶¶ 117–120). We agree with and adopt Petitioner’s reasoning. Specifically, Rolf and Forta relate to the same field of endeavor as the ’718 patent, that is, wireless communication. Pet. 45; Ex. 1001, 1:19–21; Ex.

1002 ¶ 120; Ex. 1004, 1 (“WAP is the transport used to communicate between devices (phones initially, but other devices eventually) and servers.”). It would have been obvious to use Forta’s WAP to provide access to Rolf’s remote storage facility through a website because of the advantages of WAP, such as its interoperability with different vendors and its suitability for mobile devices. Pet. 44–45; Ex. 1002 ¶¶ 118–119; Ex. 1004, 1 (“WAP will succeed because it is being supported by almost every major hardware, software, device, data carrier, and telecom vendor.”), 20 (Wireless Markup Language (“WML”), which implements WAP, “was created to address the display, bandwidth, and memory limitations of mobile and wireless devices, such as cellular phones”). Further, a person of ordinary skill in the art reasonably would have expected the asserted combination of Rolf, Gatherer, Frodigh, and Forta to work. Pet. 43–44; Ex. 1002 ¶¶ 117–118.

Patent Owner responds that Petitioner does not explain sufficiently why a person of ordinary skill in the art would have combined the cited teachings of Rolf and Forta. PO Resp. 37–38. Specifically, Patent Owner argues that Forta teaches “a simplified representation of a website for viewing by way of WAP” and “is devoid of any audio or audio-visual data.” *Id.* at 37. Patent Owner further argues that Forta’s display is limited “to lists from a database.” *Id.* According to Patent Owner, “[n]either Forta nor Rolf explains how to overcome these limitations and modify the simplified representation to function with the device disclosed in Rolf.” *Id.*

Patent Owner’s argument is not persuasive. The challenged claims recite a website for providing audio or audio-visual data files, but do not specify any requirement as to the complexity of the website. *See, e.g.*, Ex.

1001, 33:18–19, 33:43–44, 34:10–12. Similarly, the specification of the ’718 patent describes “a website suitable for viewing and selecting . . . sound and/or image clips or entire files,” but does not specify any requirement as to the complexity of the website. *Id.* at 3:36–41. As discussed above, Rolf teaches requesting a compressed music recording file from a menu or listing of files, and Forta teaches providing a website with a menu or listing of options to a cellular phone using WAP. Ex. 1003, 9:10–15 (“the wireless communications device 12 can be utilized to select [a] recording via a menu or listing of recordings”); Ex. 1004, 316 (“This is the Amazon.com site that is written explicitly for phones with a WAP browser in them.”) (emphasis omitted), Fig. 13.3 (“Music”). Thus, combining the cited teachings of Rolf and Forta so that Rolf’s cellular phone uses Forta’s WAP to access a website with a menu or listing of compressed music recording files satisfies the “website” limitation recited in the challenged claims. Ex. 1002 ¶ 117.

Further, as discussed above, Dr. Lavian explains that it would have been obvious to use Forta’s WAP to provide access to Rolf’s remote storage facility through a website because of the advantages of WAP, such as its interoperability with different vendors and its suitability for mobile devices. Ex. 1002 ¶¶ 118–119; Ex. 1004, 1 (“WAP will succeed because it is being supported by almost every major hardware, software, device, data carrier, and telecom vendor.”), 20 (Wireless Markup Language (“WML”), which implements WAP, “was created to address the display, bandwidth, and memory limitations of mobile and wireless devices, such as cellular phones”). Patent Owner does not respond specifically to the identified advantages of the proposed combination. *See* PO Resp. 37–38. We credit Dr. Lavian’s testimony, which is consistent with the teachings of Forta.

6. *Summary*

For the reasons discussed above, we determine that Petitioner has shown by a preponderance of the evidence that claims 2, 7, 10, and 11 would have been obvious over Rolf, Gatherer, Frodigh, and Forta.

E. *Obviousness of Claims 4 and 9 over Rolf, Gatherer, Frodigh, and Hacker*

Petitioner argues that claims 4 and 9 would have been obvious over Rolf, Gatherer, Frodigh, and Hacker. Pet. 3. We have considered the parties' arguments and supporting evidence, and we determine that Petitioner has shown by a preponderance of the evidence that claims 4 and 9 would have been obvious over Rolf, Gatherer, Frodigh, and Hacker.

1. *Claims 4 and 9*

Claim 4 depends from claim 1, and recites “optimizing the digital audio or audio-visual data file according to an optimization scheme.” Ex. 1001, 33:23–25. Claim 9 depends from claim 6, and recites the same limitation as claim 4. *Id.* at 34:4–6. Hacker teaches optimizing a digital audio data file according to an MP3 optimization scheme. Pet. 58–62; Ex. 1058, 2 (“The amount of data preserved is configurable by the person doing the compressing, so an optimal balance between file size and quality can be achieved.”), 26, 161, 163.⁷ Other than the arguments discussed above for claims 1 and 6, Patent Owner does not dispute that the combination of Rolf, Gatherer, Frodigh, and Hacker teaches the above limitation of claims 4 and 9. PO Resp. 39–41.

⁷ The parties cite to the original page numbers of Hacker, rather than the page numbers Petitioner added when it filed Hacker as Exhibit 1058 in this case. Thus, we also cite to the original page numbers of Hacker.

2. *Reasons for Combining Rolf, Gatherer, Frodigh, and Hacker*

As discussed above, a person of ordinary skill in the art would have had reason to combine the cited teachings of Rolf, Gatherer, and Frodigh. *See supra* Section II.C.7. Petitioner argues that a person of ordinary skill in the art also would have had reason to combine the cited teachings of Rolf, Gatherer, and Frodigh with the cited teachings of Hacker. Pet. 61–63 (citing Ex. 1002 ¶¶ 132–134). We agree with and adopt Petitioner’s reasoning. Specifically, it would have been obvious to use Hacker’s MP3 optimization scheme for Rolf’s music recording files because Rolf specifically mentions using the MP3 format. Pet. 62; Ex. 1002 ¶ 133; Ex. 1003, 5:35–39. It also would have been obvious to use Hacker’s MP3 optimization scheme for Rolf’s music recording files because the MP3 format achieves an optimal balance between storage efficiency and audio quality. Pet. 63; Ex. 1002 ¶ 134; Ex. 1058, 26 (“it can be determined which frequencies need to be rendered accurately, since they’ll be perceptible to humans, and which ones can be dropped or allocated fewer bits, since we wouldn’t be able to hear them anyway”), 163. Further, a person of ordinary skill in the art reasonably would have expected the asserted combination of Rolf, Gatherer, Frodigh, and Hacker to work. Pet. 63–63; Ex. 1002 ¶ 133.

Patent Owner responds that Petitioner does not explain sufficiently why a person of ordinary skill in the art would have combined the cited teachings of Rolf, Gatherer, Frodigh, and Hacker. PO Resp. 39–40. Patent Owner does not address specifically Petitioner’s articulated reasons for combining the cited teachings of Rolf and Hacker. *See id.* Instead, Patent Owner again disputes the reason for combining the cited teachings of Rolf, Gatherer, and Frodigh. *Id.* Specifically, Patent Owner argues that “[t]he art

provides no indication how a person of ordinary skill could modify the system in Frodigh to apply to a system as disclosed by Rolf.” *Id.* at 40. Patent Owner’s argument is not persuasive. As discussed above, Rolf teaches a cellular system (Ex. 1003, 1:25–28, 3:17–21), and Frodigh teaches that OFDM “is particularly suited for cellular systems” (Ex. 1006, 1:59–63). Patent Owner also argues that Petitioner does not explain sufficiently “how a person of ordinary skill could adopt the components of a 2G system to 3G.” PO Resp. 40. We disagree. As discussed above, Rolf is not limited to a 3G network. Ex. 1003, 3:21–25. Further, as also discussed above, Petitioner does not propose applying 2G principles to a 3G network, but, rather, Petitioner proposes implementing Rolf’s cellular phone using a digital signal processor. Pet. 21–23; Ex. 1002 ¶ 86.

3. *Summary*

For the reasons discussed above, we determine that Petitioner has shown by a preponderance of the evidence that claims 4 and 9 would have been obvious over Rolf, Gatherer, Frodigh, and Hacker.

F. *Petitioner’s Motion to Exclude*

Petitioner filed a Motion to Exclude (Paper 24, “Pet. Mot. Excl.”), to which Patent Owner filed an Opposition (Paper 25, “PO Opp. Excl.”), and Petitioner filed a Reply (Paper 27, “Pet. Reply Excl.”). We have considered the parties’ arguments, and, for the reasons discussed below, Petitioner’s Motion to Exclude is *dismissed* as moot.

1. *Exhibits 2003 and 2004*

Exhibit 2003 appears to be the minutes from a meeting of the Special Mobile Group (“SMG”) of the European Telecommunications Standards Institute (“ETSI”) dated January 28–29, 1998. Exhibit 2004 appears to be a

memorandum from the SMG of ETSI, entitled “Technical analysis and comparison of UTRA concepts” and dated December 15–19, 1997. Petitioner argues that Exhibits 2003 and 2004 should be excluded under Fed. R. Evid. 901, as lacking authentication. Pet. Mot. Excl. 1. Specifically, Petitioner argues that “no attempt has been made to provide any foundation for the exhibits themselves, and Patent Owner provides no expert or percipient witness testimony to explain or vouch for any aspect of their authenticity.” *Id.* at 2. Petitioner also points out that Exhibits 2003 and 2004 “lack cover pages, copyright or publication notices, library cataloging information, or any other indicia of provenance that might suggest authenticity.” *Id.*

Patent Owner responds that the “contents and other distinctive characteristics” of Exhibits 2003 and 2004 are sufficient to demonstrate authenticity. PO Opp. Excl. 1 (citing Fed. R. Evid. 901(b)(4)). In particular, Patent Owner points out that Exhibit 2003 “includes the particular meeting number (Meeting n°24bis), the location of the meeting (Paris), and the date of the meeting (January 28–29, 1998)” and indicates “that the meeting agenda was ‘approved.’” PO Opp. Excl. 1–2 (citing Ex. 2003, 1–2). Patent Owner also points out that Exhibit 2004 includes “the meeting number (ETSI SMG#24), the location of the meeting (Madrid, Spain) and the date of the meeting (December 15–19, 1997),” as well as “a specific identifying document number (Tdoc 1019/97).” PO Opp. Excl. 2–3 (citing Ex. 2004, 1).

The proponent of an item of evidence must produce evidence sufficient to support a finding that the item is what the proponent claims it is. Fed. R. Evid. 901(a). This requirement may be satisfied by the appearance, contents, substance, internal patterns, or other distinctive characteristics of

the item, taken together with all the circumstances. Fed. R. Evid. 901(b)(4). In this case, we need not decide whether Patent Owner satisfies the requirement of Fed. R. Evid. 901 with respect to Exhibits 2003 and 2004. As discussed above, we consider Exhibits 2003 and 2004 in connection with Patent Owner's argument that it would not have been obvious to combine the cited teachings of Rolf, Gatherer, Frodigh, Forta, and Hacker, but we do not find Patent Owner's arguments that rely on Exhibits 2003 and 2004 to be persuasive. *See supra* Sections II.C.7, II.D.5, II.E.2. As a result, Petitioner does not suffer any prejudice if we do not exclude Exhibits 2003 and 2004. Therefore, Petitioner's Motion to Exclude is *dismissed* as moot with respect to Exhibits 2003 and 2004.

G. *Constitutionality of Inter Partes Review*

Patent Owner argues that we should "vacate the institution decision" because this *inter partes* review proceeding is unconstitutional. PO Resp. 2–8. The Supreme Court of the United States held in *Oil States Energy Services, LLC v. Greene's Energy Group, LLC*, No. 16-712, 2018 WL 1914662, at *12 (Apr. 24, 2018), that "inter partes review does not violate Article III or the Seventh Amendment" of the Constitution.

III. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 1–11 of the '718 patent are unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–11 of the '718 patent are shown unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed*; 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.

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