

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 IPR2017-00097
Patent 8,892,465 B2

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

DeFRANCO, *Administrative Patent Judge*.

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

I. INTRODUCTION

Skky, LLC is the owner of U.S. Patent No. 8,892,465 B2 (“the ’465 patent”). Facebook, Inc. and Instagram LLC (collectively “Facebook”) filed a Petition under 35 U.S.C. § 311(a), requesting *inter partes* review of claims 1, 4–6, 8, and 9 of the ’465 patent. Paper 2 (“Pet.”). In a preliminary proceeding, we instituted *inter partes* review of all the challenged claims pursuant to 35 U.S.C. § 314(a). Paper 7 (“Inst. Dec.”).

After institution, Skky filed a Patent Owner Response (Paper 17, “PO Resp.”), and Facebook followed with a Reply (Paper 18, “Pet. Reply”). Facebook also filed a Motion to Exclude (Paper 22, “Mot.”) certain exhibits submitted by Skky, to which Skky filed an Opposition (Paper 23) and Facebook filed a Reply (Paper 25). A combined oral hearing with Cases IPR2017-00088, IPR2017-00089, and IPR2017-00092 was held on January 11, 2018, and a transcript of the hearing is in the record (Paper 26, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6, and we issue this Final Written Decision pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Facebook has shown by a preponderance of the evidence that claims 1, 4–6, 8, and 9 of the ’465 patent are unpatentable.

II. BACKGROUND

A. Related Cases

The ’465 patent is the subject of an infringement action in *Skky, LLC v. Facebook, Inc.*, No. 16-cv-00094 (D. Minn.), filed January 15, 2016. Also related to this proceeding are the following *inter partes* review (“IPR”) proceedings involving the same parties and several related patents:

Case	Related U.S. Patent
IPR2017-00088	U.S. Patent No. 9,124,718 B2
IPR2017-00089	U.S. Patent No. 9,118,693 B2

IPR2017-00092	U.S. Patent No. 9,124,717 B2
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Pet. 1–2; Paper 4, 2.

Also noteworthy is an earlier proceeding, IPR2014-01236 (“the 1236 IPR”), which involved U.S. Patent No. 7,548,875 B2, a parent of the ’717 patent, and resulted in a final written decision holding certain claims unpatentable.¹ There are also IPR proceedings pending before the Board, but with a different panel, involving other related patents on which trial was instituted:

Case	Related U.S. Patent
IPR2017-00550	U.S. Patent No. 9,037,502 B2
IPR2017-00602	U.S. Patent No. 9,219,810 B2
IPR2017-00685	U.S. Patent No. 9,203,870 B2
IPR2017-00687	U.S. Patent No. 9,215,310 B2

Finally, the following covered business method (“CBM”) proceedings involving some of these same patents, and yet another related patent, resulted in denials of review:

Case	Related U.S. Patent
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

B. The ’465 Patent

The ’465 patent discloses a system of “delivering an audio and/or visual media file,” such as a song or film, “over the air wirelessly, from one or more servers to an electronic device.” Ex. 1001, Abstract. The server is

¹ The Board’s final decision in the 1236 IPR was subsequently affirmed by the U.S. Court of Appeals for the Federal Circuit in *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014 (Fed. Cir. 2017).

“accessible by way of a specialized website for viewing, selecting, sampling and downloading selected files or portions thereof or directly accessible without going through a website.” *Id.* at 5:3–8. The electronic device is described in terms of a “cell phone or other hand held device,” which through “a communication network can access the server either directly or through the website.” *Id.* at 5:8–11. The audio and/or visual files are delivered to the cell phone in “compressed format” for “playback . . . on demand by a user.” *Id.*, Abstract. The compressed files are transmitted using orthogonal frequency division multiplexing (OFDM) modulation. *Id.* at 16:65–17:8. The cell phone may include a digital signal processor (DSP), which “executes the device firmware, provides control for all other blocks and performs . . . computational tasks,” including “reception of packed sound clips through the phone analogue or digital interface, [and] unpacking and then playing back sound clips through a built-in speaker.” *Id.* at 14:55–15:5, Fig. 3. The DSP also “demodulate[s]” sound clips to be “written into the flash memory [] of the device.” *Id.* at 18:47–53.

C. The Challenged Claims

Of the six challenged claims, two are independent—claims 1 and 9. Both claims are directed to a system for communicating digital media to a “wireless electronic device” (claim 1) or “wireless telephone” (claim 9). Claim 1 is illustrative:

1. A digital media communication system, the system comprising:
 - a server operably coupled to a database, the database including a plurality of digital media files, said server including a server digital signal processor and memory,

wherein the server digital signal processor is configured to,

- receive a non-optimized digital media file,
- optionally store the non-optimized digital media file in the database,
- optimize the non-optimized digital media file according to an optimization scheme,
- store the optimized digital media file in the database,
- receive a request for the digital media file, and
- cause a transmission of the requested optimized digital media file by synchronized orthogonal frequency-division multiplex modulation to a wireless electronic device, said device including a device digital signal processor configured to receive and process the optimized digital media file sent by synchronized orthogonal frequency-division multiplex modulation.

Ex. 1001, 33:5–24

D. The Instituted Grounds

We instituted *inter partes* review of all the challenged claims on three grounds of obviousness under 35 U.S.C. § 103(a): *first*, that claims 1 and 8 would have been obvious over the combination of Rolf,² Frantz,³ Gilbert,⁴ Frodigh,⁵ and Schmidl⁶; *second*, that claims 4–6 would have been obvious

² U.S. Patent No. 7,065,342 B1, iss. June 20, 2006 (Ex. 1003, “Rolf”).

³ Gene Frantz, *Digital Signal Processor Trends*, 20:6 IEEE MICRO: CHIPS, SYSTEMS, SOFTWARE, AND APPLICATIONS 52–59 (Nov/Dec. 2000) (Ex. 1014, “Frantz”).

⁴ U.S. Patent No. 6,560,577 B1, iss. May 6, 2003 (Ex. 1059, “Gilbert”).

⁵ U.S. Patent No. 5,726,978, iss. Mar. 10, 1998 (Ex. 1006, “Frodigh”).

⁶ U.S. Patent No. 5,732,113, iss. Mar. 24, 1998 (Ex. 1016, “Schmidl”).

over the same combination of references as the first ground, plus Forta⁷ and Gould⁸; and *third*, that claim 9 would have been obvious over the same combination of references as the first ground, less Schmidl. Inst. Dec. 4, 21. In further support of its grounds for unpatentability, Facebook relies on the Declaration of Tal Lavian, Ph.D. (Ex. 1002).⁹

III. ANALYSIS

A. *Constitutionality of Inter Partes Review*

As an initial matter, Skky argues that we should “vacate the institution decision” because *inter partes* review “unconstitutionally remove[s] adjudication of private patent rights from Article III courts” and eviscerates its Seventh Amendment right to a jury trial. PO Resp. 1–8. The United States Supreme Court recently held otherwise in *Oil States Energy Services, LLC v. Greene’s Energy Group, LLC*, -- S. Ct. --, 2018 WL 1914662, at *12 (Apr. 24, 2018). Thus, we reject Skky’s arguments challenging the constitutionality of this proceeding.

B. *Claim Construction*

We afford claim terms in an unexpired patent their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.200(b); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the Board’s use of the broadest reasonable interpretation standard). “Under a broadest reasonable

⁷ Ben Forta et al., WAP DEVELOPMENT WITH WML AND WMLSCRIPT: THE AUTHORITATIVE SOLUTION (Matt Purcell et al. eds., 2000) (Ex. 1004, “Forta”) (citations are to original page numbers).

⁸ U.S. Patent No. 6,693,236 B1, iss. Feb. 17, 2004 (Ex. 1062, “Gould”).

⁹ Skky chose not to cross-examine Dr. Lavian, nor did it submit an expert declaration of its own in rebuttal of Dr. Lavian’s testimony.

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). Toward that end, our interpretation “‘cannot be divorced from the specification and the record evidence,’ and ‘must be consistent with the one that those skilled in the art would reach.’ A construction that is ‘unreasonably broad’ and which does not ‘reasonably reflect the plain language and disclosure’ will not pass muster.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (citations omitted), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017).

1. “*non-optimized digital media file*” and “*content-rich digital media file*”

The parties begin by asking that we construe two claim terms—“*non-optimized digital media file*” from independent claims 1 and 9, and “*content-rich digital media file*” from claim 9 alone. Pet. 4–5; PO Resp. 12–14. In the preliminary proceeding, we determined that neither of those terms required an express construction for our application of the prior art. Inst. Dec. 5. We maintain that view, with one exception.

As to the terms “optimized” and “non-optimized,” we note that the parties do not dispute that an “optimized” digital media file includes a file that has been compressed. For instance, Skky acknowledges that “optimization refers to compression.” PO Resp. 13. Indeed, dependent claim 3 of the ’465 patent recites that “the optimization scheme comprises . . . *compressing* the digital media file according to a *compression* scheme.” Ex. 1001, 33:32–34:2 (emphases added). Facebook likewise agrees that “an *optimized* digital media file is a file that has been compressed.” Pet. 5. Facebook’s expert, Dr. Lavian, adds that that “an *optimized* digital media

file is a file that has been compressed in order to reduce its size,” and “because the specification describes ‘optimization’ as compression, the negative term ‘*non-optimized digital media file*’ would be understood by a person of ordinary skill in the art as a ‘*digital media file that has not undergone compression*’.” Ex. 1002 ¶¶ 49–50; see also Pet. 5; Pet. Reply 6 n.2. Thus, apart from noting that an “optimized” file may be a compressed file, and, conversely, that a “non-optimized” file may be a non-compressed file, we need not further construe those terms in order to resolve the parties’ disputes over the asserted grounds of unpatentability in this case. See *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

2. “process”

Skky also requests that we construe a third term, “process,” as recited in independent claims 1 and 9. PO Resp. 14–16. According to Skky, the term “process” means “preparing a digital audio and/or visual file for storage in memory and playback.” *Id.* at 14. Skky contends that, when properly construed, “process” does not include “playback of the file” because “according to the specification, it occurs after the file is processed.” *Id.* at 14–15 (citing Ex. 1001, 18:44–49). Facebook does not dispute Skky’s proposed construction of the term “process.” See Pet. 4–5; Pet. Reply. 1–20.

The particular passage of the specification cited by Skky 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, 18:47–53 (emphasis added). We agree with Skky that this passage supports a construction of “process” that includes preparing, i.e., demodulating, a digital audio file for storage in memory. That passage, however, is not the only description of the processor’s function in the specification. Elsewhere the specification describes the processor as performing other functions:

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 14:60–15:5 (emphases added); *see also id.* at 14:30–32 (“a chip performing the same functions of the board may instead be embedded in the phone itself”).

That portion of the ’465 patent specification indicates that the term “process” includes other functions, such as those directed to playback of the file. Accordingly, consistent with the specification, the broadest reasonable interpretation of the term “process” includes “preparing a digital audio and/or visual file for storage in memory and playback,” as Skky argues. We note that the term “process” may include other functions. However, as discussed below, the asserted prior art teaches a wireless device with a digital signal processor that prepares a compressed digital media file for

storage in memory and playback. *See infra* Section III.B.1.g. Therefore, no further construction is necessary in order to resolve the parties' disputes regarding the asserted grounds in this case. *See Vivid Techs.*, 200 F.3d at 803.

C. Obviousness of Claims 1 and 8 Over Rolf, Frantz, Gilbert, Frodigh, and Schmidl

Facebook asserts that the combination of Rolf, Frantz, Gilbert, Frodigh, and Schmidl renders obvious claims 1 and 8 of the '465 patent. Pet. 16–44. After considering the parties' arguments and supporting evidence, we determine that Facebook has shown by a preponderance of the evidence that these claims are unpatentable as obvious over the asserted combination of references.

1. Claim 1

Facebook provides a detailed explanation of how Rolf, Frantz, Gilbert, Frodigh, and Schmidl collectively teach each limitation of claim 1. Pet. 16–20, 22–28, 32–33, 35–36, 38–41. In particular, Facebook relies on Rolf for the majority of the limitations of claim 1, and relies on Frantz, Gilbert, Frodigh, and Schmidl for certain other limitations. *Id.* Facebook also explains, with supporting testimony from its expert, Dr. Lavian, why a skilled artisan would have been led to modify Rolf's system to incorporate the respective teachings of Frantz, Frodigh, Gilbert, and Schmidl to achieve the claimed invention, with a reasonable expectation of success in doing so. Pet. 20–22, 28–31, 33–35, 37–40, 42–43; Ex. 1002 ¶¶ 82–88, 99–106, 109–112, 114–116, 121–124, 127–129. We address each element of claim 1 as follows.

a. preamble

Claim 1 begins with the preamble of “[a] digital media communication system.” Rolf teaches expressly “a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant.” Ex. 1003, 1:25–38, Figs. 1, 4, 5 (depicting functional block diagram of Rolf’s system including a wireless communications device and central facility). Rolf further explains that the system’s “wireless communications device” is “[p]referably, . . . a digital, cellular communications device, and is portable and handheld.” *Id.* at 5:18–24. Rolf describes the “remote storage facility” as “having a plurality of music recordings therein.” *Id.* at 5:30–35. According to Rolf, the music recordings may be “digital music recording[s]” for playback on the wireless device. *Id.* at 17:39–40 (emphasis added). Those disclosures show that Rolf’s system is a “digital media communication system,” as required by the preamble of claim 1. Skky does not dispute that Rolf teaches the preamble of claim 1.

b. “a server operably coupled to a database, the database including a plurality of digital media files”

The first element of claim 1 is “a server operably coupled to a database” that includes “digital media files.” Facebook relies on Rolf as teaching this limitation. Pet. 17–19. Referring to the system diagram in Figure 1, Rolf explains that “the [central] facility 14 has a uniform resource locator (URL) on a global communications network (such as the world-wide web), and [wireless] device 12 accesses the facility 14 *via a server*.” Ex. 1003, 12:49–55 (emphasis added). Rolf further explains that “a server address [is] associated with the remote central facility” and that the music recording is “downloaded from a remote server.” *Id.* at 3:10–16, 17:63–65;

see also id. at 6:65–66 (“informational data may be retained at the server which is sourcing the recording”). As for the “database” element of claim 1, Rolf discloses that the central server facility is “at an address on the world wide web, and includes a data base having a plurality of music recordings therein.” *Id.* at 5:30–35, Fig. 1. The music recordings, Rolf explains, are “stored within data base memory” and are “digitally encoded.” *Id.* at 8:54–9:6, 18:49–52, Fig. 5. Given those disclosures, we find that Rolf teaches a server that is operably coupled to a database of digital media files, as required by claim 1.

Skky does not dispute that Rolf discloses a server, and instead argues that Rolf’s server is “in the communications network” and “not coupled to a database.” PO Resp. 28–30. The evidence indicates otherwise. Rolf states expressly that the “music recording [is] downloaded *from a remote server.*” Ex. 1003, 17:63–65 (emphasis added). Rolf further explains that “informational data may be retained *at the server which is sourcing the recording.*” *Id.* at 6:65–66 (emphasis added). And Dr. Lavian confirms that the server “sits within the ‘facility 14’” of Rolf’s system. Ex. 1002 ¶¶ 76–77 (referencing Figs. 1, 5). Those disclosures, along with the testimony of Dr. Lavian, persuade us that Rolf’s server is part of the central storage facility, not part of the external communications network.

c. “*said server including a server digital signal processor and memory*”

Claim 1 requires that the server have “a server digital signal processor and memory.” For those elements, Facebook relies on the combined teachings of Rolf and Frantz. Pet. 19–20. Rolf discloses that “central facility 14 has a processor” that executes “processing instructions stored in a memory for encoding music recordings stored within data base memory 52.”

Ex. 1003, 8:56–63, Fig. 5. Because Rolf does not further define its processor, Facebook turns to Frantz for teaching specifically the use of DSPs in cellular phone systems. Pet. 20. Frantz, published approximately six months before the earliest possible priority date for the '465 patent, states that “the entire digital wireless industry operates with *DSP enabled handsets and base stations*” and that “DSPs could provide intelligence for every system that transforms one kind of input to another kind of output.” Ex. 1014, 52, 59 (emphasis added). And Frantz identifies a “[c]ellular phone baseband system,” in particular, as one such system. *Id.* at 58. Those disclosures persuade us that Rolf and Frantz together teach the “server digital signal processor and memory” elements of claim 1.

As for a reason to combine Rolf and Frantz, Dr. Lavian testifies that a skilled artisan “would have immediately recognized that the server in Rolf performs processes that could have significantly benefitted from use of a DSP” and “would therefore have appreciated that including a specialized DSP in the central facility 14 of Rolf could expedite computationally-intensive encryption and compression operations, resulting in increased system performance by relieving the general purpose processor from having to perform these tasks,” while doing so at a relatively “low cost.” Ex. 1002 ¶¶ 83–86. Indeed, Frantz confirms that “[a]dvancements in digital signal processing technology are enabling its use for increasingly widespread applications.” Ex. 1014, 52. Thus, Dr. Lavian concludes that a skilled artisan “would have found the server in Rolf to be naturally combinable with the DSP disclosed in Frantz.” Ex. 1003 ¶ 88. We agree with that conclusion, as it is consistent with the teachings of Rolf and Frantz.

Frantz's disclosure, along with Dr. Lavian's credible testimony, persuades us that a skilled artisan would have recognized the benefit of utilizing DSPs in Rolf's cellular phone system due to their advantages of increased system performance at low cost, as taught by Frantz. See Ex. 1002 ¶¶ 83–86. Also, given Dr. Lavian's testimony that the incorporation of Frantz's server DSP into Rolf's system would have involved “no change in their respective functions, predictably resulting in a server that includes a server DSP,” we find that a skilled artisan would have had a reasonable expectation of success in combining Frantz with Rolf. *Id.* ¶ 82.

Skky responds that Facebook fails to show how “Rolf . . . contains a digital signal processor.” PO Resp. 29–30. Skky's argument is not persuasive for the simple reason that it fails to account for Facebook's reliance on Frantz for teaching the use of DSPs in cellular phone systems, in combination with Rolf's teaching of a processor in a cellular phone system. 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 equipping a central storage facility in a “digital, cellular communications” system with a “processor,” and Frantz teaches equipping a base station in a “[c]ellular phone” system with a “digital signal processor.” Ex. 1003, 5:18–24, 8:56–63; Ex. 1014, 52, 58–59.

Skky does not further dispute that a skilled artisan would have recognized the advantages of incorporating a DSP, as taught by Frantz, into the combination of a server, database, and processor taught by Rolf. See PO Resp. 19–20. Thus, as discussed above, the record evidence supports that Rolf and Frantz together teach “a server operably coupled to a database” of

“digital media files” that includes “a server digital signal processor and memory,” as required by claim 1, and a skilled artisan would have had a reason to combine those teachings in the manner asserted, with a reasonable expectation of success in doing so.

- d. “wherein the server digital signal processor is configured to, receive a non-optimized digital media file, . . . optimize the non-optimized digital media file according to an optimization scheme, [and] store the optimized digital media file in the database”

Claim 1 recites that the server DSP is configured to “receive a non-optimized digital media file,” then “optimize [it] according to an optimization scheme,” and “store the optimized digital media file in the database.”¹⁰ As discussed above, both Facebook and Skky agree (and the ’465 patent specification confirms) that optimization of a digital media file includes “compression” of the file. *See supra* Section III.B.1. And, as also discussed above, it follows, then, that a non-optimized digital media file encompasses, at least, a file that has *not* been compressed. *Id.*

We have already found that Rolf and Frantz together teach a “server digital signal processor.” *See supra* Section III.C.1.c. As for receiving a non-optimized digital media file, Facebook points to Rolf’s disclosure that the server includes an “encoder” that “can receive digital audio files for

¹⁰ Claim 1 also recites that, prior to optimizing the file, the server DSP may “optionally store” the non-optimized file in the database. An optional element is not mandatory to the claim and “can always be omitted.” *In re Johnston*, 435 F.3d 1381, 1384 (Fed. Cir. 2006). Thus, we do not include it in our analysis. In any event, Facebook shows that this limitation is taught by the asserted combination of Rolf and Gilbert. Pet. 24, 28–31. Skky does not dispute Facebook’s showing on this point, arguing only that Rolf and Gilbert cannot be combined with respect to optimizing the files. PO Resp. 30–31.

processing.” Pet. 23. More specifically, Rolf explains that the encoder “is a set of processing instructions stored in a memory for encoding music recordings stored within data base memory.” Ex. 1003, 8:61–9:3. That Rolf’s digital media files have not yet been encoded when received by the server indicates they are non-optimized, especially given Rolf’s express disclosure that “the music recordings are encoded and transmitted in packets, and may particularly be *encoded by a compression algorithm*.” *Id.* at 1:35–38 (emphasis added).

Nonetheless, acknowledging that Rolf may not disclose expressly that the digital audio files received for encoding are “non-optimized,” Facebook turns to Gilbert for teaching the optimization scheme of claim 1. Pet. 23–28. Initially, Gilbert notes a known “compression technique that compresses digital audio files by as much as 12:1, with little perceptible loss in quality.” Ex. 1059, 1:45–56. Gilbert’s system improves on known compression techniques by taking a “digital audio file,” which has not been optimized, and “operat[ing] on the digital audio file, . . . to correct any defects, separate the digital audio file into discrete track-oriented files or tracks, *and compress the discrete tracks*.” *Id.* at 3:62– 4:10 (emphasis added). In that regard, Gilbert explains that its system “further includes a compression application [], which compresses each of the discrete digital audio tracks into smaller-sized files. [The] [c]ompression application [] may comprise an MP3 encoder application, to ensure the fidelity of the discrete digital files.” *Id.* at 5:38–48. As for storing the files, Gilbert explains that “the compressed discrete tracks are stored in the memory” of the computer system. *Id.* Thus, in Facebook’s asserted combination, Rolf’s server incorporates Frantz’s digital signal processor to process digital media files utilizing an

optimization, i.e., compression, application taught by Gilbert. See Ex. 1002 ¶¶ 90–96.

Facebook also proffers evidence, including the testimony of Dr. Lavian, that a skilled artisan would have had a reason to combine the teachings of Rolf and Gilbert. Pet. 28–31 (citing Ex. 1002 ¶¶ 99–100, 102–107). As Dr. Lavian testifies, Gilbert’s teaching of using compression, i.e., optimization, to remedy “equipment obsolescence or media degradation” in the playback of music recordings would have motivated a skilled artisan to apply that same technique to Rolf’s digital audio system to avoid “the problems of degradation and shortage of playback devices” with its music recordings, “while making a growing number of musical works (e.g., older classics) available to users for download.” Ex. 1002 ¶ 100 (citing Ex. 1059, 1:17–45). Furthermore, according to Dr. Lavian, a skilled artisan would have understood that storing non-optimized and optimized copies of the same musical recording, as taught by Gilbert, “provides flexibility and performance because the optimized copy in storage can be more instantly delivered to users upon request, while the non-optimized copy enables ‘on demand’ optimization using parameters that can be varied depending on the circumstances of a particular request.” *Id.* ¶ 102. Dr. Lavian’s testimony is consistent with Rolf, which recognizes both optimization scenarios, namely, that the music recordings “may be stored in an *encoded/compressed* manner,” or alternatively, stored in an uncompressed manner and encoded later when requested by user. Ex. 1003, 8:63–9:6. That a skilled artisan would have combined Rolf and Gilbert is further bolstered by the fact that both references teach the use of an MP3 encoder for compression. Compare Ex. 1003, 1:36–38, 8:66–9:3 with Ex. 1059, 1:46–56, 5:41–46. Also, we

find that a skilled artisan would have reasonably expected that the incorporation of Gilbert's optimization technique with Rolf's server, which includes Frantz's server DSP, to be successful because it would involve "no change in their respective functions." Ex. 1002 ¶ 99.

Skky argues that a skilled artisan "would not look to the optimization scheme of Gilbert" because it is "directed to analog files." PO Resp. 30. That argument is not persuasive for the simple reason that, although Gilbert discusses optimization of analog files, it additionally contemplates the optimization, i.e., compression, of digital files. For instance, Gilbert teaches the ability "to convert a digital recording from *one digital format to another* to facilitate storage or transmission of the recorded information." Ex. 1059, 1:46–48 (emphasis added). That Gilbert may also disclose an optional step of converting analog files to digital files as part of an optimization application does not detract from its teaching as a whole of optimizing *digital* audio files. See *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1166 (Fed. Cir. 2006) (explaining that in an obviousness analysis, "the prior art must be considered *as a whole* for what it teaches").

Thus, the record evidence supports that Rolf's and Gilbert's mutual understanding of the advantages and benefits of optimizing, i.e., compressing, digital audio recordings provides sufficient reason that a skilled artisan would have been led to modify Rolf's system, which includes a processor (as modified by Frantz's DSP) and MP3 encoder, with the MP3 compression application taught by Gilbert, with a reasonable expectation of success of achieving the optimization scheme recited by claim 1.

- e. *“receive a request for the digital media file” and “cause a transmission of the requested optimized digital media file . . . to a wireless electronic device”*

Claim 1 further recites that the server is configured to “receive a request” for the digital media file, and, in turn, “cause a transmission” of the requested file “to a wireless electronic device.” For this limitation, Facebook again relies on Rolf alone. Pet. 26–28; Ex. 1002 ¶¶ 97–98.

Specifically, Rolf teaches a “keypad and input on [a] wireless communications device” by which “one or more selected music recordings may be retrieved from the storage facility [] for transmission, via wireless communications link, to the device.” Ex. 1003, 5:49–53; *see also id.* at 9:12–15 (“wireless communications device [] can be utilized to select [a] recording via a menu or listing of recordings.”). According to Rolf, the wireless device is “a cellular telephone or personal digital assistant.” *Id.* at 1:27–28. Rolf further teaches that the central facility is equipped with a “transceiver . . . for transmitting and receiving communications signals” to and from the wireless device. *Id.* at 8:54–59; *see also id.* at Figs. 4, 5 (depicting a wireless communications device and a central facility). Those disclosures persuade us that Rolf teaches a server that receives a request for a digital media file from a wireless device, and, in turn, the server sends the file to the wireless device, as required by claim 1. Skky does not dispute that Rolf teaches these elements of claim 1.

- f. *“cause a transmission of the requested optimized digital media file by synchronized orthogonal frequency-division multiplex modulation to a wireless electronic device”*

Claim 1 requires that transmission of the requested file be done “by synchronized orthogonal frequency-division multiplex [OFDM] modulation.” Facebook relies on Rolf, as modified by Frodigh and Schmidl,

to teach this limitation, with supporting testimony from Dr. Lavian as to why a skilled artisan would have been motivated to combine their teachings. Pet. 32–38; Ex. 1002 ¶¶ 109–115.

As discussed above, Rolf’s central server facility transmits a music recording file from the facility’s database in response to a request from a wireless cellular device. *See, e.g.*, Ex. 1003, 1:17–21, 1:39–41, 5:46–59. Although the Rolf’s system, modified to incorporate Frantz’s DSP and Gilbert’s optimization scheme, has the ability to transmit optimized digital music files, Facebook acknowledges that the modified system may not include the ability to transmit the files *by synchronized OFDM*, as required by claim 1. Pet. 32. For that teaching, Facebook relies, first, on Frodigh to demonstrate that using OFDM modulation in cellular systems was well-known, and, second, on Schmidl to demonstrate that it was also well-known to synchronize OFDM signals. *Id.* at 32–33, 36. We begin with the OFDM limitation and then address the “synchronized” aspect of the OFDM modulation.

As background, Dr. Lavian testifies that “OFDM dates back as far as 1966,” and, by 2001, “was well-known [to] those skilled in the art.” Ex. 1002 ¶ 35. Not only was it well-known, according to Dr. Lavian, OFDM was the standard modulation technique for “Wi-Fi” and other wireless applications, and its use in commercial cellular systems “was already underway.” *Id.* ¶¶ 37–40. We find Dr. Lavian’s testimony credible, as it is supported by numerous citations to contemporaneous documents. *See id.*

While Rolf may not describe the particular modulation technique underlying the transmission of a music recording file to the wireless device, Frodigh recognizes that OFDM modulation “is particularly suited for

cellular systems.” Ex. 1006, 1:59–2:18. Frodigh goes on to describe an OFDM cellular system that transmits voice and data between a “base station” and a “mobile station,” both “downlink [] and uplink.” *Id.* at 7:51–63, Fig. 2; *see also id.* at 3:2–7 (“In these OFDM cellular systems a set of subcarrier frequencies is assigned to each communications link created for transmission from a base station to a mobile station (downlink) and from a mobile station to a base station (uplink) operating within a cell.”). Those disclosures in Frodigh, as well as the testimony of Dr. Lavian, persuade us that the use of OFDM modulation in the transmission of digital information to wireless devices was well-known at the relevant time. *See* Ex. 1002 ¶¶ 35–40, 108. Thus, in Facebook’s asserted combination, Rolf’s central server facility incorporates the well-known modulation technique of OFDM taught by Frodigh for the purpose of transmitting digital music recording files to the wireless device.

Facebook also proffers evidence that a skilled artisan would have had reason to combine Frodigh’s teaching of an OFDM cellular system with Rolf’s teachings, such that Rolf’s central server facility would transmit music recording files via OFDM and Rolf’s wireless device (using a digital signal processor, as explained below) would receive and process the files transmitted in that manner. Pet. 33–36. Facebook’s evidence is persuasive. In particular, Facebook points to Dr. Lavian’s observation that Rolf and Frodigh both relate to “the same field of cellular communication.” *Id.* at 33 (citing Ex. 1002 ¶ 109). Facebook also relies on Dr. Lavian’s testimony that the multiple advantages of OFDM, such as increasing efficiency of bandwidth and reducing interference from propagation effects, would have led a skilled artisan “to use the OFDM modulation technique to transmit data

files such as compressed music to cellular phones.” *Id.* at 33–34 (citing Ex. 1002 ¶ 110). That testimony is supported by specific statements in Frodigh itself. See Ex. 1006, 1:59–63 (stating that OFDM “is particularly suited for cellular systems”), 2:38–60 (disclosing that “OFDM offers several advantages that are desirable in a cellular system,” such as “efficient use of the bandwidth available to a system,” “interference caused by multipath propagation effects is reduced,” and “reducing intersymbol interference”). Dr. Lavian further explains that there would have been an expectation of success in combining Rolf and Frodigh because “OFDM was one of a finite number of known techniques” for cellular systems, and the communications industry “had actively developed cellular systems employing OFDM for over a decade.” Ex. 1002 ¶ 111. That testimony is consistent with Frodigh and other contemporaneous documents cited by Dr. Lavian. See *id.* ¶¶ 35–40.

Skky faults Facebook’s asserted combination because “Frodigh does not teach a system for requesting and transmitting audio or audio-visual data files.” PO Resp. 31. According to Skky, “[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). Skky’s argument, however, focuses on Frodigh alone, not Rolf and Frodigh collectively. See *Keller*, 642 F.2d at 426. As discussed above, Rolf teaches a wireless device that requests a music recording file from a central server facility having a transceiver (Ex. 1003, 1:17–21, 1:39–41, 5:46–59, 8:54–59), and Frodigh teaches transmitting data to a wireless device using OFDM modulation (Ex. 1006, 1:59–2:18, 7:51–8:63). Thus, Skky’s argument focusing on Frodigh alone is unavailing. Rather, the

record evidence shows that the asserted combination of Rolf and Frodigh teaches a central server facility capable of “receiv[ing] a request” for a digital audio file from a wireless device and “caus[ing] transmission” of the requested digital audio file, as required by claim 1.

Skky further responds that a skilled artisan would not have had a reason to combine Rolf and Frodigh because they “are premised on two entirely different systems of network communication.” PO Resp. 32. According to Skky, Rolf relates to a 3G network that uses Code Division Multiple Access (“CDMA”), not OFDM. *Id.* Skky points out that an industry standards group known as the “SMG”¹¹ chose CDMA over OFDM as the 3G system standard. *Id.* at 32–33 (citing Ex. 2003, 7, 23–25; Ex. 2004, 2, 4). Skky explains that “[t]he group concluded that OFDM’s drawbacks kept it from final consideration,” and, as a result, “OFDM did not receive a single vote to form the basis for 3G.” *Id.* at 33. From those statements, Skky surmises that a skilled artisan would have been “aware of the SMG[] group’s findings” and “discouraged from applying OFDM to cellular systems,” such as the one in Rolf. *Id.* at 34.

We disagree. 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 Skky regarding the SMG’s decision to use CDMA as the 3G standard indicates that there were advantages and drawbacks to both OFDM and CDMA. See Ex. 2004, 1–4. For instance, the SMG explained that OFDM had the advantages of “high flexibility in radio resource management,” “robustness

¹¹ “SMG” stands for the Special Mobile Group of the European Telecommunications Standards Institute.

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 synchronization impairments,” and “adjacent channel interference.” *Id.* at 1–2. Similarly, the SMG identified several advantages and drawbacks for CDMA as well. *Id.* at 3–4.

That there may have been disadvantages with OFDM at the time does not necessarily nullify its use with Rolf’s cellular system. “[A] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Medichem*, 437 F.3d at 1165. Instead, the advantages, “both lost and gained, should be weighed against one another.” *Id.* (citation omitted). Here, Frodigh teaches that OFDM is “particularly suited for cellular systems” and identifies multiple advantages of using OFDM in a cellular system, such as increased efficiency and reduced interference. Ex. 1006, 1:59–63, 2:38–3:2. Further, Dr. Lavian explains that the use of OFDM in cellular systems was well-known at the time. Ex. 1002 ¶¶ 35–40, 108. Weighing the evidence, we are persuaded that a skilled artisan reading the SMG documents would not have been discouraged from using OFDM with a cellular system, but instead would have seen the benefits of combining Frodigh’s teaching of using OFDM in cellular systems with the transmission of the digital music recording files of Rolf’s cellular system in order to improve efficiency and reduce interference of the transmission.¹²

¹² We note that in the related 1236 IPR (*see supra* Section II.A), the Board determined that it would have been obvious to use OFDM with Rolf’s cellular system. *MindGeek, s.a.r.l. v. Skky, Inc.*, IPR2014-01236, slip op. at

With respect to the OFDM modulation being “synchronized,” as also required by claim 1, Facebook turns to the teachings of Frodigh and Schmidl, in combination with Rolf’s modified system. Pet. 35–38; Ex. 1002 ¶¶ 112–113. First, Facebook relies on Dr. Lavian’s testimony that Frodigh *alone* teaches synchronized OFDM. Pet. 35. In particular, Dr. Lavian testifies that, although “[t]he OFDM modulation in Frodigh is not expressly disclosed as being ‘synchronized,’ . . . [i]t was well-known to persons of ordinary skill in the art that the timing and frequency of OFDM symbols need to be synchronized between the transmitter and the receiver in order for the transmitted data to be accurately recovered at the receiver.” Ex. 1002 ¶ 112. In support, Dr. Lavian cites a specific passage from Frodigh—“signals 352 [are] received on the *M subcarrier frequencies currently assigned to the link* on which receiver 330 is receiving”—which, in his opinion, “makes clear that the OFDM modulation in Frodigh uses frequency synchronization.” *Id.* (quoting Ex. 1006, 8:59–63). We find that testimony persuasive, as it is consistent with the cited passage of Frodigh. Skky never contests Facebook’s argument that Frodigh alone teaches synchronized OFDM; instead, Skky focuses its arguments on Schmidl. See PO Resp. 34.

In any event, Schmidl discloses transmission by synchronized OFDM modulation. For instance, Schmidl describes “timing and frequency synchronization of an OFDM receiver to an OFDM signal to enable the OFDM receiver to accurately demodulate, decode, and recover data

18–22 (PTAB Jan. 29, 2016) (Paper 45). The U.S. Court of Appeals for the Federal Circuit upheld that determination. *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1022 (Fed. Cir. 2017). Although that case involved a different reference to teach OFDM, that reference, like Frodigh, taught expressly the desirability and advantages of OFDM. *Id.*

transmitted across an OFDM channel of the OFDM subcarrier of the OFDM signal.” Ex. 1016, 1:7–12. Schmidl further explains that the OFDM receiver includes a “DSP” that performs a variety of operations, such as “synchronizing [the] receiver [] to the timing of the symbols and data frames within the received OFDM signal.” *Id.* at 4:26–44.

Relying on those teachings, Dr. Lavian testifies that a skilled artisan would have combined Schmidl’s teaching of synchronized OFDM with Rolf and Frodigh because, first, all three references relate to “the same field of wireless communication,” second, “Frodigh and Schmidl describe OFDM techniques that can be used for wireless communication,” and, third, both Frodigh and Schmidl teach that the advantage of OFDM is reduction of “inter-symbol interference.” Ex. 1002 ¶¶ 114–115 (citing Ex. 1016, 1:31–38, 11:36–40). That a skilled artisan would have had a reasonable expectation of success in undertaking the asserted combination is evidenced by Dr. Lavian’s testimony that “Schmidl is particularly well-suited” for the system disclosed in Rolf and Frodigh because Schmidl teaches expressly a synchronization technique that is “robust and computationally simple,” “does not require the use of additional hardware,” and is of “low complexity.” *Id.* ¶ 116 (quoting Ex. 1016, 7:26–50). Based on that evidence, we find that a skilled artisan would have been led to incorporate the well-known method of synchronized OFDM modulation taught by Frodigh and Schmidl into Rolf’s central server facility already modified to incorporate Frantz’s DSP and Gilbert’s optimization scheme.

Skky responds that “Schmidl does not relate to cellular transmission . . . [n]or does the Petition explain how one of ordinary skill would modify the disclosure of Schmidl to work in a cellular environment.” PO Resp. 34.

Skky's argument focusing on Schmidl alone is not persuasive for two reasons. First, it lacks evidentiary support, and second, it fails to address Facebook's specific arguments and Dr. Lavian's testimony regarding the asserted combination of Rolf, Frodigh, and Schmidl. And, though Schmidl may not mention "cellular" expressly, neither does claim 1, instead being directed to "wireless" transmissions. Schmidl, like claim 1, describes OFDM synchronization of "wireless" transmissions, and, similarly, Frodigh teaches OFDM modulation for "wireless" transmissions and Rolf teaches a transceiver and processor for "wireless" transmissions. Thus, we do not find persuasive Skky's argument attacking Schmidl alone.

In sum, we find that Rolf, Frodigh, and Schmidl together teach synchronized OFDM modulation and that a skilled artisan would have been led to incorporate Frodigh's and Schmidl's teaching of synchronized OFDM into Rolf's system, with a reasonable expectation of doing so, given the notoriety of OFDM for wireless communication systems and its actual application thereto, as explained above.

g. "said [wireless] device including a device digital signal processor configured to receive and process the optimized digital media file sent by synchronized orthogonal frequency-division multiplex modulation"

Claim 1 requires that the wireless electronic device be equipped with a "digital signal processor" to "receive and process" the digital media file sent by synchronized OFDM modulation. Facebook relies on Rolf, as modified by Frantz, to teach this limitation and explains, with supporting testimony from Dr. Lavian, why a skilled artisan would have incorporated Frantz's DSP into Rolf's wireless device, with a reasonable expectation of success in doing so. Pet. 38–43; Ex. 1002 ¶¶ 121–129.

As discussed above, Rolf discloses a wireless device for requesting and receiving an optimized, i.e., compressed, digital music recording file from the central server facility. Ex. 1003, 1:27–28, 5:46–59, 9:12–15. Rolf further teaches that the wireless device includes a “transceiver” and “processor” to receive and process the compressed, digital files for storage in the device’s memory. *Id.* at 7:49–55, Fig. 4. Facebook acknowledges, however, that Rolf does not disclose expressly the type of “processor” for the cell phone. Pet. 39. As such, Facebook relies on Frantz for teaching the use of digital signal processors in wireless devices for processing received data. *Id.* (citing Ex. 1014, 52, 58, Fig. 5).

Notably, Frantz discloses a “[c]ellular phone baseband system” featuring a “100- to 200-MHz DSP.” Ex. 1014, 58, Fig. 5. Frantz further teaches that DSPs are “designed for number crunching” and “high-volume applications,” while also being “easy to use” by “[p]rogrammers who have little familiarity with DSPs . . . and [their] underlying mechanics.” *Id.* at 52–54. Based on those teachings, Dr. Lavian confirms that a skilled artisan would have understood that, “when included in a wireless device that receives files transmitted by OFDM modulation, the digital signal processor [DSP] could process the OFDM signals.” Ex. 1002 ¶¶ 126, 128. We credit Dr. Lavian’s testimony in that regard, as it is consistent with Frantz’s disclosure. Thus, in Facebook’s asserted combination, Rolf’s cell phone incorporates Frantz’s digital signal processor to receive and process digital music files transmitted by the well-known method of synchronized OFDM modulation taught by Frodigh and Schmidl.

Facebook also proffers evidence that a skilled artisan would have been led to use Frantz’s digital signal processor as the processor in Rolf’s wireless

phone. Pet. 39–43. Specifically, Dr. Lavian notes Frantz’s disclosure that “the entire digital wireless industry operates with DSP-enabled handsets” and observes that Rolf and Frantz are “readily combinable” because both relate to wireless phone systems. Ex. 1002 ¶¶ 119–120, 122 (emphasis omitted). Dr. Lavian further explains that “the advantages offered by DSPs in terms of performance, cost, and programm[a]bility . . . are particularly applicable to [] wireless devices.” *Id.* ¶ 123 (citing Ex. 1014, 59). We find that testimony persuasive.

Skky responds that the cell phone in Rolf does not include a digital signal processor. PO Resp. 35 (citing Pet. 39; Ex. 1002 ¶ 119). Skky’s argument is not persuasive because it focuses on Rolf individually, rather than the collective teachings of Rolf, Frantz, Frodigh, and Schmidl asserted by Facebook. *See In re Keller*, 642 F.2d at 426. As discussed above, Facebook proffers Rolf for teaching a wireless device equipped with a processor (Pet. 38), and Frantz for teaching that a wireless device’s processor can be a digital signal processor (*id.* at 39, 41).

Skky further contends that Frantz is directed to a “wired” system and “does not disclose the use of DSPs in wireless cellular systems.” PO Resp. 36. The evidence indicates otherwise. Frantz expressly states that “the entire digital *wireless* industry operates with DSP-enabled handsets” and identifies a “[c]ellular phone baseband system” as an example. Ex. 1014, 52, 58 (emphases added). Thus, we are not persuaded by Skky’s contention that Frantz is limited only to wired transmissions.

Accordingly, we find that Rolf, Frantz, Frodigh, and Schmidl together teach a wireless electronic device equipped with a DSP configured to receive and process digital media files sent by synchronized OFDM

modulation, as called for by claim 1, and that a skilled artisan would have recognized the benefit of using the DSP taught by Frantz as the specific type of processor in Rolf's wireless device as modified by Frodigh and Schmidl, with a reasonable expectation of success in doing so, given that the digital wireless industry was moving toward DSP-enabled handsets so as to improve performance, cost, and programmability.

2. *Claim 8*

Claim 8 depends from claim 1, and recites that “*the request for the digital media file is received from the wireless electronic device.*” Facebook asserts that Rolf teaches this limitation in the asserted combination of Rolf, Frantz, Gilbert, Frodigh, and Schmidl. Pet. 43–44. We agree. As discussed above with respect to the limitation that the server “receive a request for the digital media file,” we noted that Rolf's wireless device includes a “keypad and input” by which “one or more selected music recordings may be retrieved from the storage facility [] for transmission, via wireless communications link, to the device.” Ex. 1003, 5:49–53; *see also id.* at 9:12–15 (“wireless communications device 12 can be utilized to select [a] recording via a menu or listing of recordings.”). Skky does not dispute that Rolf teaches the limitation of claim 8. PO Resp. 36. Nor does Skky argue claim 8 separately, except to rely on its prior arguments with respect to base claim 1. *Id.* After reviewing Facebook's arguments and supporting evidence, we are persuaded that Facebook has proven, by a preponderance of the evidence, that dependent claim 8 would have been obvious over Rolf, Frantz, Gilbert, Frodigh, and Schmidl. *See* Pet. 43–44.

3. Conclusion of Obviousness Over the Asserted Combination

For the reasons explained above, we find that Rolf, Frantz, Gilbert, Frodigh, and Schmidl collectively teach all the limitations of claims 1 and 8. Pet. 16–44. We further find that Facebook’s reasons for combining the teachings of Rolf, Frantz, Gilbert Frodigh, and Schmidl are supported by the references themselves and the testimony of Dr. Lavian. *Id.* And, we also agree with Dr. Lavian that a skilled artisan would have had a reasonable expectation of success in modifying Rolf to incorporate the teachings of Frantz, Gilbert Frodigh, and Schmidl, given the disclosures of the references and the level of ordinary skill in the art.¹³ See Ex. 1002 ¶¶ 82, 99, 111, 116. Thus, Facebook has proven, by a preponderance of the evidence, that claims 1 and 8 would have been obvious over the combination of Rolf, Frantz, Gilbert, Frodigh, and Schmidl.

D. Obviousness of Claims 4–6 Over Rolf, Frantz, Gilbert, Frodigh, Schmidl, Forta, and Gould

Claims 4–6 depend from claim 1, and require, collectively, that the wireless electronic device utilize a “graphical user interface,” or “identifying icon,” for accessing and selecting the digital media file. For these claims, Facebook adds the teachings of Forta and Gould to the ground on which it challenges parent claim 1. Pet. 44–51.

¹³ Skky neither provides its own definition of the level of ordinary skill in the art nor disputes Dr. Lavian’s definition. Based on our review of the ’465 patent and the types of problems and solutions addressed in the ’465 patent and the asserted prior art, we agree with Dr. Lavian’s assessment of the level of ordinary skill in the art and apply it for purposes of this Decision. See Ex. 1002 ¶¶ 15–16.

Facebook starts with Rolf's teaching of a "menu driven" system for the wireless device that utilizes a "menu or listing of recordings" on the device's display for selecting and retrieving a music recording from the central server facility. *Id.* at 44 (citing Ex. 1003, 8:64–9:15). In particular, Rolf explains that "data indicative of that recording may be displayed on the display, and, additionally, a selected key on the wireless communications device may be pressed . . . to purchase the music recording." Ex. 1003, 3:64–4:3. As for the menu displayed on the wireless device, Roth explains that "the music recordings are categorized by a plurality of *selectable fields*, such as 'title,' 'artist,' 'album or CD type,' 'recording label,' etc." *Id.* at 5:35–53 (emphasis added). Indeed, those disclosures are similar to the '465 patent's disclosure of "allowing a user to select files" from "a screen display for providing a text listing of the names of songs or categories, according to hierarchical submenus." Ex. 1001, 10:62–11:13.

Facebook states that Rolf "does not provide particulars" about the menu or listing of recordings on the display. Pet. 44. As such, Facebook turns to Forta (Ex. 1004) and Gould (Ex. 1062) for teaching that a skilled artisan would have adapted Rolf's menu display to include a graphical user interface, including icons. Pet. 45–46 (citing Ex. 1004, *passim*; Ex. 1002 ¶¶ 134–136). For instance, Forta teaches a cell phone that includes a user interface, or display, for selecting options, including "Music," from a website such as "Amazon.com." Ex. 1004, 316, Fig. 13.3. Forta further teaches associating a visual "image," or "icon" with each selectable option, which serves as a "selection mechanism" for conveying data from the website to the phone. *Id.* at 53, 128, 135–136, 316, Figs. 6.5, 13.3. Albeit somewhat redundant of Forta, Gould also teaches a user interface that

includes a menu of icons, such as title, artist, album cover, and lyrics, for selecting and downloading a music recording. Ex. 1062, 5:4–60, Fig. 4.

Facebook also proffers evidence that a skilled artisan would have known to enhance Rolf’s “menu or listing of recordings” with icons, as taught by Forta and Gould. Pet. 46–51 (citing Ex. 1002 ¶¶ 137–143). We agree. Forta itself provides expressly a reason to associate interactive icons with music recording files on a server such as Rolf’s by teaching that visual images not only “make a site more interesting,” but they “convey messages and information much more efficiently than is possible with pure text.” Ex. 1004, 128; Ex. 1002 ¶¶ 137–140.

As a reason to combine Rolf and Gould, Dr. Lavian testifies that a skilled artisan would have viewed Gould as a “natural combination” for Rolf because both are concerned with using MP3 technology to download music files from the Internet and using a “menu or listing-based interface” to initiate the download. Ex. 1002 ¶ 143 (citing Ex. 1003, 3:17–21, 3:64–4:6, 6:53–59, 9:10–15; Ex. 1062, 3:23–30, 5:57–60, 6:1–3, Fig. 4). As such, Dr. Lavian concludes that a skilled artisan “would have been motivated to improve the interface of Rolf by incorporating the display of visual images (including the album cover graphics taught in Gould) in order to provide a richer, more informative visual experience.” *Id.* We find that testimony persuasive, as it is consistent with the teachings of Gould, not to mention Forta.

Skky does not dispute that Facebook’s asserted combination teaches the limitations of claims 4–6, but instead faults Facebook for failing to provide a reason to combine their respective teachings. PO Resp. 36–41. In particular, Skky argues that Forta teaches a “simplified, menu based

representation of a website viewable on cellular phones,” which “are not the same as a website viewed on a conventional computer.” *Id.* at 39. Further, according to Skky, Forta’s disclosure of “WAP” (Wireless Application Protocol) limits the amount of information that can be delivered to, and displayed on, the cell phone “at one time.” *Id.* (quoting Ex. 1004, 107–108). Skky’s argument is not persuasive because claim 1, from which claims 4–6 depend, recites only that the digital media files are provided by “a server” and received by “a wireless electronic device.” Claims 4–6 further recite only a “graphical user interface” that provides “graphical access” to a digital media file, and selection via an “identifying icon.” The claims neither require that the wireless device display the digital media files in the same manner as a conventional computer, nor do they exclude the server from utilizing a simplified menu.

Skky further responds that Forta’s “simplified representation of a website for viewing by way of WAP . . . is devoid of any compressed audio or audio-visual data files, let alone a plurality of such files.” PO Resp. 39. We disagree. Forta teaches displaying an e-commerce website, such as Amazon.com, on a wireless device, and providing a menu of choices that includes “Music” (i.e., digital audio data). Ex. 1004, 316–317, Fig. 13.3. Forta further instructs “present[ing] an attractive menu of choices *with icons*.” *Id.* at 135–136, Fig. 6.5. Dr. Lavian confirms Forta’s teachings. Ex. 1002 ¶¶ 134–135.

Also, according to Skky, “Gould does [not] contemplate the use of a cellular device, but instead teaches the display of a user interface on the screen of a conventional computer,” and, “even if one of skill would rely on Forta and/or Gould to teach a graphical user interface, Petitioners do not

argue that such an interface provides graphical access to the digital media, as required by [claim 4].” PO Resp. 40. Skky’s argument is not persuasive because it focuses on Gould alone, not the combination of Rolf, Forta, and Gould proposed by Facebook. As discussed above, Facebook proffers evidence indicating, first, that Rolf teaches a menu-driven display on a cell phone for facilitating the selection and downloading (i.e., access) of music recordings and, second, that Forta and Gould together teach an interface that provides a menu of icons or images for selecting a music recording (i.e., graphical interface), after which the recording is downloaded (i.e., graphically accessed). Pet. 14–16, 45–46, 49–50. Facebook also proffers sufficient evidence that a skilled artisan would have had reason to improve the menu-based interface in Rolf by incorporating the visual icons taught by Gould and Forta to provide a more informative selection experience. *Id.* at 46–48, 50–51 (citing Ex. 1002 ¶¶ 137, 139, 140, 143).

In sum, the record evidence shows that Rolf, Forta, and Gould collectively teach a “graphical user interface” for a wireless device that includes “identifying icons” for selecting a music recording for download from a central server, and, when combined with Frantz, Gilbert, and Frodigh, the resulting combination teaches each limitation of claims 4–6. Pet. 44–46. And, as supported by the credible testimony of Dr. Lavian, a skilled artisan would have been led to incorporate Forta’s and Gould’s teachings into Rolf’s menu display in order to “make a site more interesting” and “provide a richer, more informative visual experience” in the selection of a music recording from the site, and would have had reasonable expectation of success in doing so given the level of skill in the art. *Id.* at 46–51; Ex. 1002 ¶¶ 137–140, 143. Thus, Facebook has proven, by a

preponderance of the evidence, that claims 4–6 would have been obvious over the combination of Rolf, Frantz, Gilbert, Frodigh, Schmidl, Forta, and Gould.

E. Obviousness of Claim 9 Over Rolf, Frantz, Gilbert, and Frodigh

Facebook notes that independent claim 9 is “substantially similar to independent claim 1.” Pet. 51. As such, Facebook challenges claim 9 on the same basis as claim 1, less Schmidl (because claim 9 recites transmission via OFDM modulation, not “synchronized” OFDM modulation). *Id.* at 51–55. Skky does not take issue with that characterization, nor does it argue claim 9 separately, except to rely on the “same reasons” it argued with respect to claim 1. PO Resp. 42. For reasons similar to those explained above with respect to claim 1, we are persuaded that Rolf, Frantz, Gilbert, and Frodigh collectively teach all the limitations of claim 9, and that a skilled artisan would have had a reason to combine those teachings to achieve the system recited in claim 9, with a reasonable expectation of success in doing so. Thus, Facebook has shown, by a preponderance of the evidence, that claim 9 would have been obvious over the combination of Rolf, Frantz, Gilbert, and Frodigh.

F. Facebook’s Motion to Exclude

Facebook moves to exclude Exhibits 2003 and 2004 as inadmissible under Federal Rules of Evidence 901 and 902. Mot. 1–3. We note, however, that neither exhibit is relied on in this Final Written Decision in a manner adverse to Facebook. Specifically, even considering Exhibits 2003 and 2004, we do not agree with Skky’s arguments that SMG’s choice of CDMA over OFDM would have precluded a skilled artisan from combining

the teachings of Rolf and Frodigh, as we explain above. *See supra* Section III.C.1.f. Accordingly, we dismiss Facebook’s motion as moot.

IV. CONCLUSION

After considering the parties’ evidence and arguments, we determine that Facebook has proven, by a preponderance of the evidence, that claims 1, 4–6, 8, and 9 of the ’465 patent are unpatentable as obvious under 35 U.S.C. § 103(a).

V. ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 318(a), claims 1, 4–6, 8, and 9 of the ’465 patent are *unpatentable*;

FURTHER ORDERED that Facebook’s Motion to Exclude is *dismissed*; and

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

IPR2017-00097
Patent 8,892,465 B2

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