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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 IPR2017-00685
Patent 9,203,870 B2

Before KARL D. EASTHOM, WILLIAM V. SAINDON, and CHRISTOPHER PAULRAJ, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

FINAL WRITTEN DECISION

Finding All Challenged Claims Unpatentable
35 U.S.C. § 318(a)
Dismissing Petitioner's Motion to Exclude
37 C.F.R. § 42.64(c)

I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6. The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This Final Written Decision (hereinafter, "Decision") is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Upon review of Petitioner's Petition (Paper 2, "Pet.") and Patent Owner's Preliminary Response (Paper 7), we instituted an *inter partes* review of claims 8 and 10–14 of U.S. Patent No. 9,203,870 B2 (Ex. 1001, "the '870 patent"). Paper 10 ("Dec. on Inst."). Patent Owner subsequently filed a Response to the Petition (Paper 13, "PO Resp."), to which Petitioner filed a Reply (Paper 18, "Pet. Reply"). The parties waived their right to an oral hearing. Upon consideration of the arguments and evidence before us, we determine that Petitioner has established by a preponderance of the evidence that claims 8 and 10–14 of the '870 patent are unpatentable.

In this Decision, we also dismiss Petitioner's Motion to Exclude (Paper 19).

A. Related Matters

The parties indicate that the '870 patent is at issue in the following district court case: *Skky, LLC v. Facebook, Inc.*, No. 16-cv-00094 (D. Minn., filed Jan. 15, 2016). Pet. 1; Paper 4, 2. The parties also indicate that the several PTAB proceedings, including *inter partes* reviews and covered business method reviews, relate to this case. *See* Pet. 1; Paper 4, 2–3. Additionally, in *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014 (Fed. Cir. 2017), the Federal Circuit affirmed the Board's final written decision in

IPR2014-01236 determining that certain claims of U.S. Patent 7,548,875, to which the ’870 patent claims priority, were unpatentable as obvious.

B. The ’870 Patent

The ’870 patent describes delivering audio and/or visual files to an electronic device. Ex. 1001, Abstract, 1:19–21. Specifically, the ’870 patent discloses delivering the audio or visual files, such as songs or films, from one or more servers to the electronic device. *Id.* at 1:63–2:2. The system employs an orthogonal frequency-division multiplex (“OFDM”) modulation technique for data transmission. *Id.* at 16:57–17:39.

C. Challenged Claims

Petitioner challenges claims 8 and 10–14, of which claim 8 is independent. Claim 8 is reproduced below, with [a]–[e] designations added for ease of reference.

> 8. A method for distributing electronic content over a cellular network to a user operating a cellular phone, the method being executable by a computer system that includes server hardware and a database, the method comprising:
> [a.] providing for the transmission to the cellular phone by orthogonal frequency-division multiplex (OFDM) modulation of a database of electronically accessible data files, each data file being subject to a copyright owner;
> [b.] receiving, by the computer system, a selection from the cellular phone corresponding to at least one of the data files;
> [c.] providing for the transmission of, by the computer system and in response to the received selection, a portion of the selected data file to the cellular phone electronic device;
> [d.] receiving, by the computer system, a request for the data file for which the portion was provided to the cellular phone electronic device; and
> [e.] providing for the transmitting, by the computer system, of the requested data file to the cellular phone, said cellular

> phone including a digital signal processor configured to receive the data file over a cellular network by orthogonal frequency-division multiplex (OFDM) modulation.

D. Prior Art and Asserted Grounds

Petitioner asserts that claims 8 and 10–14 of the '870 patent are unpatentable under 35 U.S.C. § 103 on the following grounds:

References	**Claims Challenged**
Rolf,[1] Fritsch,[2] and Gatherer,[3] Frodigh,[4] and Hacker[5]	8 and 12–14
Rolf, Fritsch, Gatherer, Frodigh, Hacker, and Bell[6]	10 and 11
Rolf, Fritsch, Gatherer, Hacker, O'Hara,[7] Tagg,[8] and Pinard[9]	8 and 12–14
Rolf, Fritsch, Gatherer, Hacker, Bell, O'Hara, Tagg, and Pinard	10 and 11

[1] U.S. Patent No. 7,065,342, issued June 20, 2006 (Ex. 1003).

[2] U.S. Patent No. 6,233,682, issued May 15, 2001 (Ex. 1004).

[3] Alan Gatherer et al., *DSP-Based Architectures for Mobile Communications: Past, Present and Future,* 38:1 IEEE Communications Magazine 84–90 (2000) (Ex. 1005).

[4] U.S. Patent No. 5,726,978, issued Mar. 10, 1998 (Ex. 1006).

[5] Scot Hacker, *MP3 The Definitive Guide* (O'Reilly & Assoc., pub., 2000) (Ex. 1062).

[6] U.S. Pat. App. Pub. No. 2002/0065826, published May 30, 2002 (Ex. 1068).

[7] Bob O'Hara and Al Petrick, *IEEE 802.11 Handbook, A Designer's Companion* (1999) (Ex. 1061).

[8] U.S. Patent No. 8,996,698 B1, filed Nov. 3, 2000, issued Mar. 31, 2015 (Ex. 1060).

[9] U.S. Patent No. 5,815,811, issued Sept. 29, 1998 (Ex. 1025).

Petitioner also relies on the declaration of Tal Lavian, who holds a Ph.D. in computer science, specializing in networking and communications (Ex. 1002 ¶ 1).

II. ANALYSIS

A. Claim Construction

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b). Under that standard, a claim term generally is given its ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Although our claim interpretation cannot be divorced from the specification, *see Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (quoting *In re NTP, Inc.*, 654 F.3d 1279, 1288 (Fed. Cir. 2011)), we must be careful not to import limitations from the specification that are not part of the claim language, *see SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

In its Petition, Petitioner proposed a construction for the term "cellular network" in claim 8: a "network in which wireless communications are provided through a series of 'cells,' each cell providing network access for a particular geographic area." Pet. 6–7.[10] In its Preliminary Response, Patent

[10] According to Petitioner, the construction of this term is only relevant to

Owner stated Petitioner's interpretation was "unreasonably broad" and suggested that the term should be limited to networks "provided by 'large scale commercial cellular telephone companies.'" Paper 7, 5. We adopted Petitioner's proposed construction based in part on the strength of the extrinsic evidence supporting that construction. Dec. on Inst. 6–7 (citing Ex. 1002 ¶¶ 22, 75–76; Ex. 1074, claims 9–11). We noted, however, that Petitioner's argument focused on extrinsic evidence but provided little discussion of the intrinsic evidence (e.g., the specification). *Id.* at 7. Given this, we specifically "invite[d] the parties to further develop their arguments and evidence regarding the proper claim construction of 'cellular network.'" *Id.* Notwithstanding that request, Patent Owner's position in its Response is nearly word-for-word its position in the Preliminary Response. *Compare* PO Resp. 12–13, *with* Paper 7, 5; *see also* Ex. 1084, 15–16 (Petitioner's redline comparison of the Preliminary Response and the Response). Petitioner's Reply responds to Patent Owner's arguments in the Preliminary Response and the Response, and bolsters its position regarding extrinsic evidence. Pet. Reply 4–6. With respect to intrinsic evidence, Petitioner asserts that "[n]othing in the '870 patent narrowly limits the meaning of a 'cellular' network to require the Patent Owner's proposed limitations [to limit the network to 'large scale commercial cellular telephone companies']." *Id.* at 5.

Reviewing the arguments and evidence before us, we are persuaded that Petitioner's proposed construction is commensurate in scope with the broadest reasonable interpretation, and that Patent Owner's proposed

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the third and fourth grounds (involving O'Hara, Tagg, and Pinard). Pet. 6.

construction is not. Specifically, Petitioner asserts that a "cellular network" is a "network in which wireless communications are provided through a series of 'cells,' each cell providing network access for a particular geographic area." Pet. 7. Effectively, Petitioner seeks to construe "cellular network" so as to encompass both the term's "colloquial[]" meaning (the networks provided by "large scale commercial cellular telephone providers") *as well as* its "technical definition" (which would include other radio wavelengths, such as IEEE 802.11, more commonly known as "WiFi"). *Id.* Petitioner bases its construction on extrinsic evidence, including the testimony of its expert, Dr. Lavian (Ex. 1002 ¶¶ 22, 75–76), and one of Patent Owner's related patents (Ex. 1074, U.S. Patent No. 8,892,465, claims 9–11). Dr. Lavian, in turn, cites to Pinard (Ex. 1025), which explicitly calls a WiFi network a "cellular network." Ex. 1002 ¶ 75. Dr. Lavian also cites to a host of dictionaries supporting his position. *Id.*

Patent Owner argues that Petitioner's construction is too broad. PO Resp. 12–13. Patent Owner appears to assert that we should adopt the "colloquial[] underst[anding] by the lay public" of "cellular network" to reference the large scale commercial cellular telephone providers. *Id.* Patent Owner, however, does not offer any cogent analysis or evidence in support of its construction.

On this record, Petitioner offers persuasive extrinsic evidence of how a person of ordinary skill in the art would construe the term "cellular network." We also consider the use of the term in the specification to be consistent with the understanding of a person of ordinary skill in the art. In general, the specification focuses on "an improved method for delivery and play back of sound and image files." Ex. 1001, 1:63–65. The improvement

is that the files are distributed to a cell phone, largely for use to be played in lieu of the traditional ringing sound. *Id.* at 1:25–59 (discussing ring tones), 2:22–39 (the embodiment described in the invention disclosure section being directed to ring tones); *see also, e.g.*, *id.* at 4:65–67 (describing the present invention as a "method . . . using sound and or image clips as alerts"), 5:21–24 ("music[] . . . to be used for sound . . . alerts in electronic devices"). The section on the transmission system (*id.* at 12:32–14:10) generically describes a "cellular network infrastructure" (*id.* at 13:35). The example of cellular phone transmission (*id.* at 14:11–16:28) is concerned with the ability of the phone to play sounds in conjunction with caller ID (*id.* at 14:27–16:28), consistent with the '870 patent's focus on ring tones. The specification addresses details for OFDM transmission when the data is going to be sent over the *audio* channel of a wireless *landline* phone. *Id.* at 16:29–36, 57–67 (describing use of OFDM for data transmission when sending data over an audio channel of landline). However, when discussing transmission for a cellular phone, the "server . . . uses a modulation protocol compatible with the protocol supported by the cellular network provider." *Id.* at 18:63–19:1; *see also id.* at 18:63–66 ("Since in this case [(using a digital cellular network)] a digital channel is used for sound clip data transmission, no [OFDM] modulation is required on the mobile phone side."), 19:34–35 (suggesting to use standard modulation), 19:55–60 (same), 20:25–26 (same). Accordingly, the '870 patent is not directed to unique technical implementations for cell phones specifically, and rather refers to the expected knowledge of the person ordinary skill with respect to cell phones. Similarly, the cell phone itself is described in usual terms. *See id.* at 14:27–28 ("The cellular telephone 202 may be any commercially available cellular

phone having capabilities for supporting [various common command sets]"); 26:13–15 (describing accessory unit *attached to* a common cell phone, the Ericsson R520). Taking into account the specification as a whole, we are not apprised of any particular import or meaning imbued to the term "cellular network"; the term is used as if it were a term with which a person of ordinary skill in the art was already familiar (i.e., it relies on the meaning understood by a person of ordinary skill in the art). Accordingly, we determine that Petitioner's construction is consistent with how "cellular network" would have been understood by a person of ordinary skill in the art in light of the specification: a "network in which wireless communications are provided through a series of 'cells,' each cell providing network access for a particular geographic area."

We determine that Patent Owner's proposed construction is not the broadest reasonable interpretation consistent with the specification because the record does not support the finding that a person of ordinary skill in the art would understand a "cellular network" to be limited only to those provided by large scale commercial providers. Patent Owner's proposed construction would cut out small cell phone providers, with no argument or evidence in support of why. Patent Owner does not direct us to, nor do we see, how the '870 patent specification would direct a person of ordinary skill in the art to understand the term in such a manner. We do not adopt Patent Owner's proposed construction.

We do not need to construe any other terms to resolve the issues raised by the parties. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) ("claim terms need only be construed 'to the

extent necessary to resolve the controversy'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

B. Person of ordinary skill in the art

The Petition states that a person of ordinary skill in the art "would have possessed at least a bachelor's degree in computer science, computer engineering, or electrical engineering . . . with at least four years of experience with wireless communications systems and at least two years of experience with the communication of digital media." Pet. 7 n.2 (citing Ex. 1002 ¶¶ 15, 16). Patent Owner does not explicitly argue for a particular level of ordinary skill. On this record, Petitioner's proffered level of skill is adequately supported by the disclosures of the prior art references. *See Okajima v. Bourdeau*, 261 F.3d. 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of skill in the art). Accordingly, we adopt Petitioner's definition.

C. Asserted Grounds of Unpatentability

1. Obviousness Over Rolf, Gatherer, Fritsch, Hacker, and Frodigh (Claims 8 and 12–14)

Petitioner asserts that claims 8 and 12–14 would have been obvious over the combination of Rolf, Gatherer, Fritsch, Hacker, and Frodigh. Pet. 19–46.

a. Independent Claim 8

Independent claim 8 recites a method for distributing copyrighted electronic content over a cellular network using orthogonal frequency-division multiplex ("OFDM") modulation, wherein a computer system receives a selection of a data file, transmits a portion of that data file,

receives a request for the complete data file, and then transmits the complete data file to a cell phone that uses a digital signal processor ("DSP"). In general, and as explained in further detail below, Petitioner relies on Rolf for the majority of the limitations dealing with distributing copyrighted content over a cellular network, with Fritsch teaching the portion-of-a-file aspect, Gatherer explaining that cell phones use DSPs, Frodigh explaining that cell phones use OFDM, and Hacker explaining that audio recording holders have a copyright over their work. *See generally* Pet. 19–46.

As to claim 8, step (a), Petitioner asserts that Rolf discloses a facility that includes a database that stores electronically accessible music files and transmits them to a device such as a cellular telephone. Pet. 22 (citing, e.g., Ex. 1003, 5:32–39). Petitioner acknowledges, however, that Rolf does not disclose the files transmitted using the OFDM protocol (it does not specify any protocol), but that Frodigh describes OFDM as "particularly suited for cellular systems." *Id.* at 22–23 (quoting Ex. 1006, 1:59–2:18). Petitioner asserts that the proposed modification to use OFDM as taught in Frodigh would result in no effective modification to Rolf because Frodigh is explicitly described as applicable to cellular systems, and provides particular advantages when used, such as efficient use of bandwidth and reduced interference. *Id.* at 23–24 (quoting Ex. 1006, 2:38–60). Step (a) also specifies that each data file is subject to a copyright owner. Petitioner asserts that Rolf does not explicitly disclose this, but the claim limitation imports no meaningful distinction because copyright protection automatically attaches to the musical works relevant to the claims. Pet. 25 (citing 17 U.S.C. §§ 101(a)(2) & (a)(7)). Petitioner also cites to Hacker, which notes that MP3 files contain metadata indicating a copyright owner.

Pet. 26–27 (citing, e.g., Ex. 1062, 117, 262, 263). Petitioner asserts that this is evidence that a person of ordinary skill in the art would have understood that copyright information is standard information for an MP3 file, and that each is subject to a copyright owner. *Id.* at 27.

As to claim 8, step (b), Petitioner asserts that Rolf discloses a remote facility that stores a database of music files and allows for the selection of one or more of those files by a cellular phone for download, and that the selection in accordance with this claimed step occurs when the user of the cell phone requests download of a music recording. Pet. 27–28 (citing, e.g., Ex. 1003, 5:49–53, 9:12–15).

As to claim 8, step (c), Petitioner asserts that Rolf does not disclose the transmission of just a portion of the file, but that this feature would have been obvious in view of the "pre-listen" functionality in Fritsch. Pet. 28. Specifically, Petitioner directs our attention to Fritsch's description of a music download system similar to Rolf, in which a user can pre-listen to desired music prior to purchase. *Id.* at 28–29 (citing, e.g., Ex. 1004, 4:54–58, 5:52–56). Petitioner asserts that a person of ordinary skill in the art would have reason to add this "pre-listen" feature into the similar system of Rolf in order to provide, *inter alia*, "[t]he benefits of the age-old sales technique of 'try before you buy.'" *Id.* at 30 (citing Ex. 1002 ¶¶ 111–115).

As to claim 8, step (d), Petitioner asserts that Rolf discloses the transmission of a selected music file in its entirety rather than just a portion. *Id.* at 31–32. Petitioner asserts this would have been obvious in view of Fritsch, which discloses the "try before you buy" feature, and this step is merely the "buy." *Id.* at 32–33.

As to claim 8, step (e), Petitioner asserts that it has explained why would have been obvious to use OFDM to transmit the data file in step (a). *Id.* at 34–35. As to the limitation that the cell phone includes a DSP to receive the file, Petitioner points out that Rolf includes a processor, but does not expressly disclose what type of processor it is. *Id.* at 35. However, Petitioner asserts that DSPs were well known to persons of ordinary skill in the art, as confirmed by Gatherer, which explains the functions that could be performed by a DSP on a cell phone. *Id.* (citing, e.g., Ex. 1005, 84, 85). Petitioner reasons that it would been obvious to a person of ordinary skill in the art to use a DSP in the cell phone for the reasons expressed in Gatherer, for example, being a "cost-effective, flexible upgrade path for the variety of evolving standards." *Id.* at 35–36 (citing, e.g., Ex. 1005, 86; Ex. 1002 ¶ 129); *id.* at 37–41 (providing further discussion).

Reviewing the arguments and evidence provided by Petitioner, we are persuaded that it has established that each feature of claim 8 was taught by the prior art, and has established a reason to combine the features in the manner claimed. We have considered the arguments set forth in Patent Owner's Response, but are persuaded that Petitioner has established these facts by a preponderance of the evidence. We now turn to Patent Owner's arguments.

Patent Owner first argues that Rolf and Frodigh do not disclose the transmission of the data file by OFDM. PO Resp. 28–29. Patent Owner asserts that Frodigh discloses using OFDM for phone calls, but not data. *Id.* at 28. Patent Owner, however, does not address the portion in Frodigh that states that "[v]oice *and data* to be transmitted on each link are modulated," which is cited by Petitioner in its Petition. Ex. 1006, 7:58–59 (cited at Pet.

22); *see also* Ex. 1005, 89 ("Bits, after all, are just bits, and they can be used to transmit data as well as voice"). Patent Owner also argues that Frodigh and Hacker fail to describe transmitting a data file such as an MP3 file using OFDM (PO Resp. 28–29), but this argument only considers the references' teachings in isolation rather than in combination with each other. As explained above, Petitioner cites to Rolf for the general music data file transfer system, Frodigh for the particular transmission protocol, and Hacker for the simple background fact that MP3s are subject to copyright. Thus, once Rolf's system is specified to transmit using the known OFDM protocol, as suggested in Frodigh, it would then transmit the music files (MP3s) using OFDM. We find this rationale to be backed by persuasive evidence. *See, e.g.*, Ex. 1006, 1:59–63 ("Frequency division multiplexing (FDM) is a method of transmitting data that has application to cellular systems. Orthogonal frequency division multiplexing (OFDM) as a particular method of FPM that is particularly suited for cellular systems."), 2:38–39 ("OFDM offers several advantages that are desirable in a cellular system.").[11]

We note that this is not a case where there are many options (e.g., wireless transmission protocols) and choosing a particular option (e.g., OFDM) among many is invention in and of itself. *See, e.g.*, *Takeda Chem. Indus. V. Alphapharm Pty.*, 492 F.3d 1350, 1357 (Fed. Cir. 2007) (finding claims patentable when the prior art identified fifty-four candidate compounds but insufficient reason was given to target particular compounds). The '870 patent chose OFDM not because of its suitability for

[11] In *Skky, Inc. v. MindGeek, S.A.R.L.*, 859 F.3d 1014, 1022 (Fed. Cir. 2017), the Federal Circuit affirmed that the Board's finding that it would have been obvious to use OFDM in Rolf's system.

wireless transmission protocols, but "to provide enough speed for the data transmission" over the *audio* connection of a *land line*. Ex. 1001, 16:29–17:53. In the exemplary embodiment, OFDM is used for "transmitting data through the phone line" where a "customer does not need to use a Wireless Internet Service Provider." *Id.* at 16:29–58. Here, given the breadth of the claim, Petitioner's ground relies on OFDM as being an obvious candidate *wireless* protocol. That assertion is founded on credible evidence (e.g., Frodigh, testimony of Dr. Lavian), and Petitioner's reasons for including OFDM need not match the inventor's. *KSR Int'l Co. v. Teleflex Inc.*, 550 US 398, 419 (2007) ("In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls.").

Patent Owner next argues that Petitioner has provided no evidence or explanation to support the conclusion that Rolf's processor can be a DSP. PO Resp. 30–32. This argument again only considers the references in isolation because, as explained above, it is the *combination* of references that Petitioner uses to assert that this requirement would have been obvious. Gatherer explains that DSPs are "pervasive" in cellular telephones for various reasons, and their inclusion provides a "significant advantage." Ex. 1005, 84 ("DPSs are pervasive in the wireless handset market"), 85 (discussing the "increase in the fraction of DSP [processing power used in cell phones] and noting "we expect this trend to accelerate"), 85 ("DSPs have a significant advantage over [the prior technology]"), 85–86 ("DSPs are essential to provide a cost-effective, flexible upgrade path"), 89 (noting "applications requirements will also drive a need for more powerful DSPs"). It is this teaching that is *applied* to the proposed combination of references,

and we find more than sufficient evidence that a person of ordinary skill in the art would have had reason to include DSPs for cell phone applications.

Patent Owner then argues that "Rolf and Frodigh are premised on two entirely different systems of network communication," and that this teaches away from their combination. Prelim. Resp. 32–35. Contrary to Patent Owner's unsupported attorney argument, we find no basis to suggest that the skilled artisan would understand that Rolf's system could *only* be implemented on a cellular network using, e.g., the 3G CDMA protocol. Rolf recites no particular transmission protocol—it is agnostic as to the transmission protocol. *See generally* Ex. 1003. Further, the evidence cited by Patent Owner regarding the SMG's[12] decision to use the CDMA protocol in the 3G standard indicates that there were advantages and drawbacks to both OFDM (Ex. 2005, 1–2) and CDMA (*id.* at 3–4) *as a commercial standard*. The non-adoption of OFDM as the standard protocol is not meaningful evidence of non-obviousness here. *Accord Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983) ("[T]he fact that the two disclosed apparatus would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination. Only the latter fact is telling on the issue of nonobviousness."). Indeed, as Petitioner points out, it

[12] "SMG" stands for the European Telecommunications Standards Institute's Special Mobile Group. PO Resp. 33; Pet. Reply 3. This group allegedly convened to decide the transmission protocol for the third generation (3G) of wireless communications systems, i.e., the transmission protocol for cell phones.

is further evidence that a person of ordinary skill in the art would consider OFDM as a transmission protocol—because SMG did consider OFDM, even though it chose CDMA for the 3G standard. Pet. Reply 16–17; Ex. 1002 ¶ 94 (Petitioner's expert testifying that "OFDM was one of a finite number of known techniques" and that "telecom heavyweights . . . had actively developed cellular systems employing OFDM for over a decade").

Patent Owner then argues that claim 8 "requires that the receiver and processor be configured to receive and process files transmitted by OFDM." PO Resp. 35–37. Claim 8 does not recite a receiver or processor, however. The only structure set forth with respect to the method is that it is "executable by a computer system that includes server hardware and a database." Patent Owner appears to be referencing, in part, the cellular phone to which the method of claim 8 "provides . . . the requested data file." The cellular phone is said to "receive the data file . . . by . . . OFDM." But the claim stops at the action of "providing for the transmitting" by the computer system, and does not include the steps for receipt or processing at the cell phone. At most, it requires that the computer system cause a transmission using OFDM, because the cell phone that receives the transmitted files uses OFDM. The cell phone, in turn, must be able to communicate using OFDM in order to receive the file, but the claim does not specify what processors or other structures it uses to decode and play the file (e.g., play it on a speaker of the phone or an attached device).

Furthermore, to the extent Patent Owner is arguing that adding OFDM and/or DSP to Rolf's phone or the associated cellular infrastructure is unpredictable or overly difficult, the evidence would not support such a conclusion. We are not aware of any credible evidence that implementing

an OFDM protocol in a cell phone is unpredictable or would require undue experimentation. To the contrary, Frodigh states that "OFDM . . . is particularly suited for cellular systems." Ex. 1006, 1:59–63. Dr. Lavian also testifies that "telecom heavyweights . . . have actively developed cellular systems employing OFDM for over a decade." Ex. 1002 ¶ 94; *see also id.* ¶ 34 (citing Ex. 1024, Abstract; Ex. 1007 ¶¶ 1, 8; Ex. 1009; Ex. 1010). Similarly, we are not aware of any credible evidence that implementing a DSP in a cell phone is unpredictable or would require undue experimentation. To the contrary, it is routine. *See, e.g.*, Ex. 1005, 84 ("Programmable DSPs are pervasive in the wireless handset market for digital cellular telephony."); Ex. 1002 ¶ 25 ("by the turn of the century, DSPs had become immensely popular"), ¶ 27 ("the entire digital wireless industry operate[d] with DSP-enabled handsets") (quoting Ex. 1014, 52, left column). Accordingly, we find that the proposed modifications to Rolf's phone to include OFDM and DSP would have yielded a predictable result and would not require undue experimentation.

Petitioner has shown where each limitation of claim 8 is found in the prior art and has shown why a person of ordinary skill in the art would have combined the teachings of the prior art in the manner claimed.[13] Based on the preponderance of the evidence, we determine that Petitioner has demonstrated that the subject matter of claim 8 of the '870 patent would

[13] We note that although the combination has five references, the combination is essentially Rolf in view of Fritsch. The cell phone in Rolf necessarily has a processor and a transmission method, and Gatherer and Frodigh are cited for known options in that regard. Hacker does not serve to bring in features, but rather provides background information regarding copyrights.

have been obvious to a person of ordinary skill in the art at the time of the invention in view of Rolf, Gatherer, Fritsch, Hacker, and Frodigh.

b. Dependent Claims 12–14

Turning now to dependent claims 12–14, Petitioner asserts that Rolf discloses the interface for file selection of claims 12 and 13, and that Fritsch provides additional evidence that such interfaces were known. Pet. 42–44 (citing, e.g., Ex. 1003, 5:30–38, 9:12–15; Ex. 1004, 4:49–50). Petitioner asserts that Hacker explains how MP3 files were known to have metadata indicating the copyright owner, as required by claim 14. *Id.* at 44–46 (citing, e.g., Ex. 1062, 124). Petitioner's asserted facts regarding these claims are supported by a preponderance of the evidence. Patent Owner does not set forth separate arguments for claims 12–14. PO Resp. 37.

Reviewing the evidence and arguments before us, we are persuaded that Petitioner has shown that the subject matter of claims 12–14 would have been obvious to a person of ordinary skill in the art at the time of the invention in view of Rolf, Gatherer, Fritsch, Hacker, and Frodigh.

2. Obviousness Over Rolf, Gatherer, Fritsch, Frodigh, Hacker, and Bell (Claims 10 and 11)

Petitioner asserts that claims 10 and 11 are unpatentable over Rolf, Gatherer, Fritsch, Hacker, Frodigh, and Bell. Pet. 46–56. Claim 10 depends from claim 8 and requires further steps of tracking the user and reporting data about the user. Claim 11 similarly depends from claim 8 and requires tracking of the user to determine data about the user.

Petitioner asserts that Bell teaches user tracking to gather data on the user. *See, e.g.*, Pet. 47 (citing Ex. 1068 ¶ 100); Ex. 1068 ¶ 100 ("activities [by a user] may be assigned a code and tracked"; this data may be used by

"others who may desire to know concretely what users 102 are responding to when and why"). Patent Owner argues that Bell does not teach tracking of a cell phone. PO Resp. 38. This argument only considers the references in isolation, whereas the proposed ground is to apply the teachings of Bell (tracking a user listening to music on a network) to the analogous situation in Rolf (providing music to listen to over a network). *See* Pet. 46–56; Ex. 1068 ¶¶ 85–100 (wherein a user listens to electronic radio stations and her activity is tracked); Ex. 1003 5:18–20 (noting the invention is "for playing encoded music on a wireless communications device"). As noted by Dr. Lavian, Bell teaches that tracking music consumption is valuable for many players in that industry. Ex. 1002 ¶¶ 145–150. For example, marketing and promotion can be guided by knowing which artists are more popular. Ex. 1068 ¶¶ 2, 4, 20. We see no great leap in tracking a user's music listening choices on the generic internet versus tracking a user's music listening choices over a wireless connection; the benefits of and the process for doing so are effectively the same. We find the evidence supports Petitioner's rationale that a person of ordinary skill in the art would have reason to apply Bell's teaching to track music listeners to Rolf's music distribution system. Reviewing the arguments and evidence before us, we are persuaded that Petitioner has shown by a preponderance of the evidence that claims 10 and 11 would have been obvious in view of Rolf, Gatherer, Fritsch, Frodigh, and Bell.

3. Obviousness Over Rolf, Gatherer, Fritsch, Hacker, O'Hara, Tagg, and Pinard (Claims 8 and 12–14) and Obviousness Over Rolf, Gatherer, Fritsch, Hacker, Bell, O'Hara, Tagg, and Pinard (Claims 10 and 11)

Petitioner asserts that claims 8 and 12–14 are unpatentable over Rolf, Gatherer, Fritsch, Hacker, O'Hara, Tagg, and Pinard and that claims 10 and 11 are unpatentable over Rolf, Gatherer, Fritsch, Hacker, Bell, O'Hara, Tagg, and Pinard. Pet. 56–66. Petitioner characterizes these grounds as alternative grounds to the prior two, swapping in O'Hara, Tagg, and Pinard for Frodigh to teach OFDM. *Id.* at 56.[14] Petitioner explains that it used Frodigh for the first grounds because "mapping of Frodigh has some similarities to the mapping provided in the *Playboy* IPR proceeding on the parent '875 patent (IPR2014-001236). . . ." *Id.* at 57.[15] Petitioner sets out the alternative O'Hara, Tagg, and Pinard references to teach OFDM apparently to cover its bases in the event the PTAB's decision were reversed in that case. *See id.* In addition, Petitioner asserts that the OFDM protocol discussed in O'Hara, Tagg, and Pinard is industry standard for communications using IEEE 802.11a, also known as "WiFi." *Id.* at 58.

Petitioner cites O'Hara, Tagg, and Pinard in combination to teach that a person of ordinary skill in the art would consider using WiFi to transfer data using a cell phone, i.e., to transfer the music files in Rolf, and would

[14] In these grounds, the claim construction of "cellular network" is relevant, whereas the previously addressed two grounds did not turn on the construction of that term.

[15] This is a reference to the *MindGeek* decision referenced *supra* n.11.

consider WiFi part of the cellular network. *See id.* at 59. Specifically, Petitioner asserts that O'Hara teaches that WiFi (IEEE 802.11a) uses OFDM. *Id.* at 59–60 (citing Ex. 1061, 143). Petitioner asserts that Tagg teaches how IEEE 802.11 can be used to transmit voice and data for cell phones. *Id.* at 60–62 (citing, e.g., Ex. 1060, 11:67–12:2). Lastly, Petitioner asserts that Pinard teaches that a person of ordinary skill in the art would consider IEEE 802.11 itself a cellular communications network. *Id.* at 62–63 (citing, e.g., Ex. 1025, 2:50–53). Petitioner reasons that it would have been obvious to utilize IEEE 802.11 for transmission in Rolf to take advantage of the known speed and cost benefits of IEEE 802.11. *Id.* at 64–66 (citing, e.g., Ex. 1002 ¶¶ 187–193).

Patent Owner acknowledges that IEEE 802.11 is used for cellular communications, but argues that the evidence does not support "the IEEE 802.11 standard as applied to 2G, 3G, LTE, or any other cellular transmission." PO Resp. 39. This argument misunderstands the ground, which is to *use* IEEE 802.11 as *a* protocol in Rolf's system, not to *replace* 2G, 3G, LTE, or any such transmission scheme with IEEE 802.11. *See* Pet. 64 ("[i]t would have been obvious . . . to combine . . . resulting in cell phone 12 of Rolf configured to receive digital files transmitted over an IEEE 802.11a-based cellular network. . . ."). Thus, the device in Rolf as modified would use, for example, IEEE 802.11 when the best connection is to such a network, and 2G, 3G, etc., when not. *See, e.g.*, Pet. 65 ("Tagg explains that . . . cellular charges could be dramatically reduced by allowing the cell phone to switch a short-range wireless network such as IEEE 802.11"); Ex. 1002 ¶¶ 187–189 (analyzing how the technical benefits of Tagg's handoff system include speed and cost savings). Under Petitioner's claim

construction, which we have adopted for the reasons set forth above, a cellular network may include coverage provided by WiFi, or IEEE 802.11. This is consistent with the understanding of the network advocated by Tagg. Ex. 1060, 11:20–46, Fig. 7 (noting that the user transitions between cell and 802.11 wireless connections); *see also* Ex. 1025 1:21–38 (describing an 802.11 network as a cellular network).

Thus, Patent Owner's argument that "Rolf, O'Hara, Tagg, and Pinard use entirely different systems of network communication" is based on a consideration of the references in isolation. PO Resp. 40. Patent Owner's argument that "Rolf relies on 3G network" misunderstands Rolf, which above we did not find "relies on 3G." *Id.* We find no evidence or reason, and Patent Owner does not direct us to evidence or reason, that would suggest that Rolf would operate any differently using any particular transmission protocol, let alone OFDM. On the other hand, we have evidence that OFDM is used for cellular systems. *See, e.g.*, Ex. 1006, 1:61–63 ("OFDM is . . . particularly suited for cellular systems"); Ex. 1002 ¶¶ 36–37 (listing various papers and patents describing ways to use OFDM); Ex. 1060, 11:20–46, Fig. 7 (noting that the user transitions between cell and 802.11 wireless connections).

Patent Owner's arguments regarding the SMG group's decision not to adopt OFDM being a "teaching away" are also unpersuasive. PO Resp. 40–42. Primarily, the argument misunderstands the ground. As we stated above, the ground is not proposing to *replace* the 3G's CDMA protocol with OFDM, but rather to *use* OFDM in the cellular network, e.g., as discussed in Tagg to be used in certain contexts. Ex. 1060, 5:31–33 (suggesting to use "fixed host device[s]," e.g., 802.11, to provide for cheaper cellular

connections); *see also id.* at 5:46–50 (equating 802.11 with fixed host devices); Fig. 7 (demonstrating a phone operating with handoffs between various wireless protocols in certain contexts). In addition, the fact that a standards body may or may not choose a particular known protocol for a common standard shared between commercial entities is not the same analysis as whether they would consider a known protocol obvious to use. *See* PO Resp. 42; *Orthopedic Equip. Co.*, 702 F.2d at 1013. Lastly, Patent Owner's argument that "those of ordinary skill in the art [would not] rely on 802.11a for a cellular device" is refuted by Tagg's description of a system that handed off cell phones between various transmission protocols, as we discussed above. Ex. 1060, 5:31–33, 11:42–46.

Reviewing the evidence and arguments before us, we are persuaded that Petitioner has shown by a preponderance of the evidence that claim 8 would have been obvious in view of Rolf, Gatherer, Fritsch, O'Hara, Tagg, and Pinard.

As to dependent claims 10–14, Petitioner asserts that "the mappings provided in Grounds 1 and 2 apply to Grounds 3 and 4." Pet. 56. We found above that these assertions were supported by a preponderance of the evidence; the same remains true here.

Reviewing the evidence and arguments before us, we are persuaded that Petitioner has shown by a preponderance of the evidence that claims 8 and 10–14 would have been obvious in view of Rolf, Gatherer, Fritsch, Bell, O'Hara, Tagg, and Pinard.

D. Patent Owner's Constitutional Arguments

Patent Owner's arguments that *inter partes* review is unconstitutional because it violates Patent Owner's right to a jury trial under the Seventh Amendment (PO Resp. 2–8) have been addressed in *Oil States Energy Services, LLC v. Greene's Energy Group*, 584 US __ (2018):

> In this case, we address whether inter partes review violates Article III or the Seventh Amendment of the Constitution.
>
> We hold that it violates neither.

slip op. at 1.

E. Petitioner's Motion to Exclude Evidence

Petitioner objected to Exhibits 2005 and 2006 as not authenticated under Federal Rule of Evidence 901 or 902 (Paper 12), and preserved those objections by filing its Motion to Exclude (Paper 19). Patent Owner filed an Opposition (Paper 20) and Petitioner filed a Reply (Paper 21). Reviewing these briefs, we dismiss Petitioner's Motion to Exclude as moot. As discussed above, we considered Exhibits 2005 and 2006 in connection with Patent Owner's argument that it would not have been obvious to combine the cited teachings advanced in the Petition. Patent Owner's arguments relying on these documents are not persuasive and consideration of them does not harm Petitioner. Although parties would be well advised to properly authenticate their documents if they wish to have them considered as evidence in support of persuasive arguments, here we see little harm here in considering them as what Patent Owner alleges them to be. Therefore, Petitioner's Motion to Exclude is *dismissed* as moot with respect to Exhibits 2005 and 2006.

III. ORDER

In view of the foregoing, it is hereby

ORDERED that claims 8 and 10–14 of the '870 patent are *unpatentable*:

Claims 8 and 12–14 would have been obvious in view of Rolf, Gatherer, Fritsch, Hacker, and Frodigh;

Claims 10 and 11 would have been obvious in view of Rolf, Gatherer, Fritsch, Hacker, Frodigh, and Bell;

Claims 8 and 12–14 would have been obvious in view of Rolf, Gatherer, Fritsch, Hacker, O'Hara, Tagg, and Pinard;

Claims 10 and 11 would have been obvious in view of Rolf, Gatherer, Fritsch, Hacker, Bell, O'Hara, Tagg, and Pinard;

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

FURTHER ORDERED that this is a Final Written Decision under 35 U.S.C. § 318(a), and that parties to the proceeding seeking judicial review of the decision under 35 U.S.C. § 319 must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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