Trials@uspto.gov
571-272-7822

Paper 16
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD and
SAMSUNG ELECTRONICS AMERICA, INC.,[1]

Petitioner,

v.

AFFINITY LABS OF TEXAS, LLC,
Patent Owner.

Case IPR2014-01181[2]
Patent 8,532,641 B2

Before KEVIN F. TURNER, LYNNE E. PETTIGREW, and
JON B. TORNQUIST, *Administrative Patent Judges.*

TORNQUIST, *Administrative Patent Judge.*

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

[1] On January 1, 2015, Samsung Telecommunications America, LLC, an originally-named Petitioner in this case, was merged into Samsung Electronics America, Inc. *See* IPR2014-01181, Paper 9.
[2] On March 24, 2015, we consolidated IPR2014-01182 and IPR2014-01184 with IPR2014-01181. IPR2014-01181, Paper 15, 2.

I. INTRODUCTION

A. Background

Samsung Electronics Co., Ltd and Samsung Electronics America, Inc. (collectively "Petitioner") filed Petitions in IPR2014-01181 (Paper 4, "-01181 Pet."), IPR2014-01182 (Paper 4, "-01182 Pet."), and IPR2014-01184 (Paper 4, "-01184 Pet.") requesting *inter partes* review of claims 1–3 and 5–14 of U.S. Patent No. 8,352,641 B2 (Ex. 1001, "the '641 patent"). Affinity Labs of Texas, LLC ("Patent Owner") filed Preliminary Responses to the Petitions.

Pursuant to 35 U.S.C. § 314(a), we instituted *inter partes* review in each of IPR2014-01181 (Paper 10, "-01181 Dec. on Inst."), IPR2014-01182 (Paper 10, "-01182 Dec. on Inst."), and IPR2014-01184 (Paper 10, "-01184 Dec. on Inst.") and subsequently consolidated IPR2014-01182 and IPR2014-01184 with IPR2014-01181. IPR2014-01181, Paper 15, 2. Patent Owner filed a consolidated Patent Owner Response (Paper 20, "PO Resp.") to the Petitions and Petitioner filed a Reply (Paper 23, "Reply").[3] Patent Owner also filed a paper identifying arguments and evidence in Petitioner's Reply that it contends were improper (Paper 26), to which Petitioner filed a response (Paper 29).

In support of their respective positions, Petitioner submitted four declarations from Dr. Schuyler Quackenbush, Exs. 1023, 1123, 1223, 1025, and Patent Owner filed a declaration from Dr. Marilyn Wolf, Ex. 2005.

An oral hearing was held on October 28, 2015, and a transcript of the oral hearing is included in the record. Paper 35 ("Tr.").

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[3] All subsequent citations to papers or exhibits refer to those in IPR2014-01181, unless otherwise noted.

We have jurisdiction under 35 U.S.C. § 6(c), and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, where we find claims 1–3 and 5–14 of the ’641 patent to be unpatentable.

B. The ’641 Patent

The ’641 patent is directed to a system and method for communicating selected information to an electronic device. Ex. 1001, 1:21–23, 2:15–21. In the disclosed embodiments, a radio listener may create a personalized playlist and “listen to this playlist in a wireless atmosphere while enjoying CD quality sound.” *Id.* at 2:18–21. The audio information transmitted to a user may include “songs, on-line radio stations, on-line broadcasts, streaming audio, or other selectable information.” *Id.* at 3:67–4:1.

Electronic devices contemplated for use in the disclosed system include “a network radio, a modular device, an audio system, a personal digital assistant (PDA), a cellular phone, or other electronic devices operable to receive information wirelessly communicated” by a communications engine. *Id.* at 5:36–41. Wireless communication from the communications engine may be by various means, including cellular communications, AM or FM signals, or “high speed, low-power microwave wireless link[s],” such as a “Bluetooth link.” *Id.* at 2:33–43, 5:61–6:24.

According to the ’641 patent, “conventional” wireless systems communicate across a channel in “an asynchronous manner.” *Id.* at 6:34–39. In addition to this conventional asynchronous method, the ’641 patent also “advantageously allows for signals to be transmitted to an electronic device in a less than asynchronous manner.” *Id.* at 6:40–42.

In one embodiment, the electronic device is operable to communicate the received audio information to a different audio system, such as an audio radio receiver, using "a localized communications-signaling network." *Id.* at 9:44–56, 10:26–35, 12:29–35. The electronic device may utilize a physical interface having two conductive paths, the first path for communicating information and the second path for providing power to the device. *Id.* at 18:40–53.

C. Illustrative Claims

> 1. A music enabled communication system, comprising: a wireless telephone device, the device having (1) a display at least partially defining a front surface of the device, (2) a housing component at least partially defining a back surface of the device, (3) an enclosure located between the front surface and the back surface, (4) a wireless communication module located within the enclosure, (5) a rechargeable power supply located within the enclosure, (6) a physical interface having a first and a second conductive path, the physical interface operable to communicate data via the first conductive path and to receive a recharging power for the rechargeable power supply via the second conductive path, and (7) a memory system, located within the enclosure; and
>
> a collection of instructions stored in the memory system, the collection of instructions operable when executed to communicate a collection of information about media content available from the wireless telephone device to a recipient device such that the recipient device can use the collection of information to generate a graphical menu comprising a selectable menu item associated with the available media content, to utilize the wireless communication module to stream a signal representing at least a portion of a song to the recipient device using a given asynchronous wireless channel of a localized communications signaling network, to recognize receipt of an incoming telephone call, and to alter an outputting of the signal

> in connection with recognizing receipt of the incoming telephone call.

Ex. 1001, 19:29–57.

> 8. A system for wirelessly communicating musical content, comprising:
>
> a portable electronic device having a processor operable to play an audio file that represents a song;
>
> a memory communicatively coupled to the processor and configured to store a plurality of audio files; and
>
> a wireless communication module communicatively coupled to the processor and operable to communicate a streaming audio signal that represents a playing of the song to a recipient device via a localized communications signaling network in response to a selection of a selectable menu item presented on a recipient device display, wherein the wireless communication module is compliant with a Bluetooth standard, further wherein the wireless communication module is configured to communicate at least a portion of the streaming audio signal to the recipient device using an asynchronous channel.

Id. at 20:28–45.

> 11. The system of claim 8, wherein the wireless communication module is operable to communicate the streaming audio signal at a communication rate that provides for a CD quality listening experience.

Id. at 20:64–67.

D. The Evidence of Record

Petitioner relies upon the following references:

Reference	**Patent/Publication**	**Date**	**Exhibit(s)**
Ito	US 6,990,334 B1	Jan. 24, 2006	1003[4]

[4] Exhibits with 10XX, 11XX, and 12XX prefixes were filed in IPR2014-01181, -01182, and -01184, respectively. Exhibits with 20XX, 21XX, and 22XX prefixes were filed in IPR2014-01181, -01182, and -01184, respectively.

Reference	Patent/Publication	Date	Exhibit(s)
Haartsen	US 6,973,067 B1	Dec. 6, 2005	1006
Rydbeck	US 7,123,936 B1	Oct. 17, 2006	1008, 1112
Galensky	US 6,845,398 B1	Jan. 18, 2005	1009, 1107, 1209
Abecassis	US 6,192,340 B1	Feb. 20, 2001	1103
Chennakeshu	US 6,542,758 B1	Apr. 1, 2003	1105
Herrod	US 6,405,049 B2	June. 11, 2002	1106
Ohmura	US 6,937,732 B2	Aug. 30, 2005	1203
Ahn	US 2004/0214525 A1	Oct. 28, 2004	1205

Owner's Manual, Nokia 9000i Communicator, 1995–1997 Nokia Mobile Phones Ltd. (Ex. 1005B).

E. The Asserted Grounds of Unpatentability

The Board instituted *inter partes* review on the following asserted grounds of unpatentability (-01181 Dec. on Inst. 19; -01182 Dec. on Inst. 20–21; -01184 Dec. on Inst. 15):

IPR2014-01181

Statutory Ground	References	Challenged Claim(s)
§ 103	Ito, Haartsen, Nokia, and Rydbeck	8, 11, 13, and 14
§ 103	Ito, Haartsen, Nokia, Rydbeck, and Galensky	12

IPR2014-01182

Statutory Ground	References	Challenged Claim(s)
§ 103	Abecassis, Chennakeshu, and Herrod	1–3, 5, 9, 10, and 14
§ 103	Abecassis, Chennakeshu, Herrod, and Galensky	6 and 7

Statutory Ground	References	Challenged Claim(s)
§ 103	Abecassis and Chennakeshu	8, 11, and 13
§ 103	Abecassis, Chennakeshu, and Galensky	12

IPR2014-01184

Statutory Ground	References	Challenged Claim(s)
§ 103	Ohmura and Ahn	8 and 11
§ 103	Ohmura, Ahn, and Nokia	13 and 14

II. ANALYSIS

A. Claim Construction

In an *inter partes* review proceeding, we give each claim term its broadest reasonable interpretation, as understood by one of ordinary skill in the art in light of the specification of the involved patent. 37 C.F.R. § 42.100(b). Absent any special definitions in the specification, under the broadest reasonable construction standard we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

1. streaming audio signal

In the Decision to Institute, we preliminarily construed the term "streaming audio signal" to mean "an audio signal that is transferred in a continuous stream." -01181 Dec. on Inst. 8. This construction was based, in part, on a dictionary definition of the term "streaming," which is "relating to

or being the transfer of data (as audio or video material) in a continuous stream especially for immediate processing or playback."[5]

Patent Owner contends our preliminary construction is too broad. According to Patent Owner, a person of ordinary skill in the art[6] would understand the term "streaming" in the '641 patent to mean a "signal/audio signal that is played as it arrives at a recipient device, not requiring that an entire file be transferred to and stored at a recipient device prior to initiating playback." PO Resp. 7; Ex. 2005 ¶¶ 114–115. Patent Owner contends this narrower construction—requiring a "streaming audio signal" be played as it arrives—is supported by the "clear" delineation between "download and play files" and "streaming files" set forth in the '641 patent. PO Resp. 7.

In support of this argument, Patent Owner points to the following disclosures of the '641 patent regarding the transfer of content to an electronic device:

> For example, a user may want to listen to an internet broadcast of an Internet radio station. Therefore, high-speed communication may be required to wirelessly communicate or stream the selected audio information to an electronic device.

Ex. 1001, 7:3–7.

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[5] *Streaming definition*, MERRIAM-WEBSTER.COM, http://www.merriam-webster.com/dictionary/streaming.

[6] Petitioner contends that a person of ordinary skill in the art would have a Bachelor's degree in Electrical Engineering or Computer Science and approximately 1–2 years of experience in working with client/server architectures, Internet transmission protocols, wireless transmission protocols, Internet browser programming, and streaming media transmission. -01181 Pet. 12. Although Dr. Wolf's identification of a person of ordinary skill in the art varies slightly from Petitioner's, Patent Owner does not assert that this difference is material to the outcome of this case. *See* Ex. 2005 ¶ 34.

> In another embodiment, portable radio 500 may include memory operably located within for storing downloaded information. For example, portable radio 500 may include 32 MB of RAM allowing electronic device 502 to receive selective information and download the selective information to memory located within the portable radio 500.

Id. at 13:4–9. According to Patent Owner, the first paragraph identifies "streaming audio" that is played as it arrives and the second paragraph identifies "download and play files" that are stored in memory. PO Resp. 7.

Patent Owner also argues that the patentee's statements during prosecution reinforce the difference between "streaming" and "download and play files":

> [S]treaming audio includes playing audio or video immediately as it is downloaded from the Internet, rather than storing it in a file on the receiving computer first." A second reference defines streaming audio as ". . . streaming sound is played as it arrives. The alternative is a sound recording that doesn't start playing until the entire file has arrived."

Id. at 8 (quoting Ex. 2101, 2). Thus, Patent Owner contends the intrinsic evidence as a whole supports a construction that requires the immediate playback of "streaming audio."

Petitioner asserts the Board's preliminary construction is consistent with the meaning one of ordinary skill in the art would give the term "streaming audio signal." Reply 3. According to Petitioner, the '641 patent does not disclose or require that "streaming audio" be played as it arrives and, contrary to Patent Owner's proposed construction, the '641 patent discusses "downloading" "audio information such as MP3s, streaming audio, [and] streaming Internet Broadcasts . . . ." *Id.* at 4 (quoting Ex. 1001, 8:31–35).

With respect to Patent Owner's statements during prosecution, Petitioner contends the Examiner specifically rejected Patent Owner's proposed distinction between "streaming" and download and play files as unsupported by the Specification of the '641 patent:

> The Applicant goes to great lengths to describe the differences between an 'audio file' and 'streaming audio' in his remarks. However, the examiner maintains that 'streaming audio' is transferred as an 'audio file' and can be stored on the receiving device as such. The invention as claimed provides no teachings of any other definition or significant difference between 'streaming audio' and the transfer of an 'audio file'.

Ex. 1218, 394; Reply 4.

We agree with Patent Owner that the term "streaming" is often used in the context of the immediate processing and playback of audio information. -01181 Dec. on Inst. 7. The ordinary meaning of the term, however, does not require the immediate playback of streaming audio information, and the portions of the '641 patent identified by Patent Owner do not demonstrate with reasonable clarity, deliberateness, and precision that a narrower claim definition should apply. For example, although the discussion in the '641 patent of using high-speed communications for streaming an Internet radio station supports Patent Owner's argument that "streaming audio" may be played immediately as it arrives, Ex. 1001, 7:3–7, the '641 patent also discloses "downloading" "streaming audio" and "streaming Internet Broadcasts." *Id.* at 3:67–4:1, 8:31–35, 17:1–2, 18:1–5. Thus, the disclosures of the '641 patent are consistent with the dictionary definition of the term "streaming," which contemplates the transfer of "streaming audio" as a constant stream of data for either immediate or delayed playback.

Accordingly, we construe the term "streaming audio signal" as "an audio signal that is transferred in a continuous stream."

2. communication rate that provides for a CD quality listening experience

The term "communication rate that provides for a CD quality listening experience" is recited in dependent claim 11. This term is not explicitly defined in the Specification of the '641 patent and we did not provide a preliminary construction for the term in the Decision to Institute. PO Resp. 10.

Patent Owner contends this term "has a specific and well-understood meaning" and should be construed as a "data transfer rate sufficient to obtain 1.4 megabits per second." *Id.* Patent Owner reasons that the Compact Disc Digital Audio Standard, commonly referred to as the "Red Book," establishes "that CD audio should consist of a 44.1 kHz sampling frequency at a 16-bit signal quantization across 2 channels" and one of ordinary skill in the art would look to this standard in interpreting the meaning of the term "communication rate that provides for a CD quality listening experience." *Id.* at 10–11 (citing Ex. 2006, 4–9; Ex. 2005 ¶ 133); *see also id*. at 11 (citing Ex. 2007, 40:2–17) (contending that Dr. Quackenbush admitted during his deposition that one of ordinary skill in the art would understand that the Red Book specifications are "related to CD audio").

Petitioner contends the broadest reasonable construction of the term "communication rate that provides for a CD quality listening experience" is a "speed at which data is transmitted that provides for a listening experience that is similar to that of a CD." Reply 6; -01182 Pet. 11–12. In support of this argument, Petitioner provides a dictionary definition of "CD-quality" that defines the term as "of equal or comparable quality to sound stored on a

compact disc." Reply 9 (citing Ex. 1033 (Oxford English Dictionary)). Petitioner also argues that a transfer rate of 1.4 megabits per second is not required to provide for a "CD quality listening experience" as audio compression standards such as MPEG-1 and Precision Adaptive Subband Coding (PASC) could be used to compress data samples from a CD by "up to an order of magnitude" and still provide "CD-Quality audio." *Id.* at 7–9 (citing Ex. 1034, 2).

We find that Petitioner demonstrates persuasively that known compression standards would allow for "CD-quality audio" at transfer rates less than 1.4 megabits per second. Reply 7–9, 27 (citing Ex. 1032, 328; Ex. 1034, 2; Ex. 1025 ¶ 87; Ex. 1049A; Ex. 1050, 1:8–10, 3:4–11). Moreover, the '641 patent does not support Patent Owner's proposed construction. For example, in the discussion of the various communications standards operable in the disclosed embodiments of the '641 patent to provide CD quality sound, it is noted that a Bluetooth link may be used. Ex. 1001, 2:18–21, 2:39–43. Yet, both parties agree that Bluetooth cannot transfer data at a rate of 1.4 megabits per second. Tr. 12:20–23, 80:10–14. Thus, we are not persuaded that one of ordinary skill in the art would understand a "CD quality listening experience" to require a data transfer rate of 1.4 megabits per second.

Based on the dictionary definition provided by Petitioner and the disclosures of the '641 patent, we construe the term "communication rate that provides for a CD quality listening experience" to mean "a data transfer rate that provides audio of equal or comparable quality to sound stored on a compact disc." *See* Ex. 1033, 3.

3. remaining claim terms

Patent Owner also proposes constructions for the terms *wireless telephone device*, *a signal representing at least a portion of a song*, *while*, and *portable electronic device*. PO Resp. 5–6, 8–10, 11–12. Upon review of Petitioner's and Patent Owner's arguments, we determine that construction of these additional claim terms is not required for purposes of this decision.

B. Abecassis-Based Grounds—Obviousness of Claims 1–3 and 5–14

Petitioner asserts that claims 1–3, 5, 9, 10, and 14 of the '641 patent would have been obvious over Abecassis, Chennakeshu, and Herrod; claims 6 and 7 would have been obvious over Abecassis, Chennakeshu, Herrod, and Galensky; claims 8, 11, and 13 would have been obvious over Abecassis and Chennakeshu; and claim 12 would have been obvious over Abecassis, Chennakeshu, and Galensky. -01182 Dec. on Inst. 20–21; Pet. 12–38.[7]

1. Abecassis

Abecassis is directed to "[s]ystems for, and methods of, integrating a playing of music that is responsive to a user's music preferences applied to the user's audio library with a playing of real-time information that is responsive to the user's information preferences." Ex. 1103, 1:8–12. To implement this method, Abecassis discloses a portable Multimedia Player that is "intended to function as a stand alone cellular phone, as a part of multiple-phone configuration, a radio, a remote control, as a digital audio player, and/or as a radio-on-demand player." *Id*. at 9:26–31. In one embodiment, the Multimedia Player can be used in conjunction with the

[7] Citations to the Petition in Section II.B are to the Petition filed in IPR2014-01182.

speaker system of a vehicle and may transfer information by "means of a cable or by direct insertion into a built-in docking bay." *Id.* at 14:12–17.

Abecassis discloses that a "virtual audio item may be retrieved at the time of its playing, i.e, retrieved and played in a real-time manner; or retrieved in advance of the time it is to be played, temporarily stored in any of a Multimedia Player'[s] storage means, and erased from memory after being utilized for a single playing or for a plurality of scheduled or projected playings." *Id.* at 14:60–65.

The Multimedia Player may be controlled by a remote control device having various function keys useful for "program selection, music and information preference selection, and source selection." *Id.* at 9:47–55. The remote control may communicate directly with the Multimedia Player, using wired or wireless means, and may "directly receive from the Multimedia Player a transmission and render it audible for the user through its built-in speaker or by means of headphones connected to the remote control . . . ." *Id.* at 10:41–45, 12:28–39.

2. Chennakeshu

Chennakeshu is directed to a mobile radio telephone for use in a vehicle. Ex. 1105, 1:9–12. The mobile telephone of Chennakeshu may communicate using a Bluetooth interface over an asynchronous data channel. *Id.* at 4:60–5:15. In at least one embodiment, the system of Chennakeshu is configured to allow for "hands-free operation once a call is established." *Id*. at 1:22–24.

3. Herrod

Herrod is directed to a portable data device, or terminal, for use with a terminal docking device, or cradle. Ex. 1106, 1:5–7. The portable data

device of Herrod "compris[es] cellular telephone means for conventional telephone communication." *Id.* at 3:32–36, 16:8–11. The portable data device of Herrod also contains both a rechargeable battery and a physical interface that allows for connection of the terminal with a terminal docking device. *Id.* at 6:56–59, 18:66–19:14. This terminal docking device is connected via a cable to both a power source and a network. *Id.* at 6:30–38, 6:56–64, 18:66–19:14; Ex. 1123 ¶¶ 45–52.

4. Galensky

Galensky is directed to "[a] wireless device, system and method for receiving and playing multimedia files streamed from a multimedia server over a wireless telecommunications network." Ex. 1107, Abstract. Galensky discloses that "to conserve bandwidth within the wireless network," it is preferable to transmit data "at the highest data rate possible" to create a 5–10 second buffer and, once the desired buffer is created, to decrease the data transmission rate to the minimum rate necessary for adequate transmission of "streamed data." *Id*. at 6:1–18.

5. Combination of Abecassis, Chennakeshu, and Herrod

Petitioner asserts that the combination of Abecassis, Chennakeshu, and Herrod discloses, or renders obvious, every limitation of claims 1–3, 5, 9, 10, and 14 of the '641 patent. Pet. 12–38. In particular, Petitioner asserts that Abecassis discloses: (1) a wireless telephone device having a display, housing, wireless communication module, and memory; (2) a collection of instructions operable to provide information about media content available from the wireless telephone device to a recipient device (in the form of a remote control) such that the recipient device can use the information to generate a selectable menu item associated with available media content;

and (3) streaming at least a portion of a song to the recipient device. *Id.* at 18–23 (citing Ex. 1103, 14:60–65 ("A virtual audio item may be retrieved at the time of its playing, i.e., retrieved and played in a real-time manner . . . .")). Petitioner further asserts that Chennakeshu discloses hands-free operation of a wireless telephone and the use of a Bluetooth communication module to transmit information over an asynchronous channel. *Id.* at 21–22, 26–28. Petitioner also asserts that Herrod discloses a display that makes up more than half of the front surface of the device, a rechargeable power supply, and a physical interface operable to communicate data over a first path and receive power over a second path. *Id.* at 18–19. Petitioner further asserts that USB interfaces were "well-known prior to March 28, 2000 and provided a non-circular interface to communicate data via a first conductive path and receive a recharging power via a second conductive path." *Id.* at 24 (citing Ex. 1123 ¶ 46; Ex. 1113A; Ex. 1118, 13–14, 19–20).

With respect to the reason to combine the references, Petitioner asserts it would have been obvious to incorporate Chennakeshu's Bluetooth communication module in the Abecassis device because "Bluetooth was being widely adopted by many companies in the industry" and provided an "economically feasible" method for connecting various devices. *Id.* at 15 (citing Ex. 1108A, 110; Ex. 1123 ¶¶ 74, 84). Petitioner further asserts that one of ordinary skill in the art would have understood that an asynchronous channel provides "a simple, flexible, and cost-effective way to transmit data," Pet. 15 (citing Ex. 1123 ¶ 73), and implementing the larger display, rechargeable power supply, and physical interface of Herrod in the wireless telephone of Abecassis would allow for easier navigation of displayed menu

items, "eliminate the need to replace batteries of the phone," and permit recharging and data communication using a single physical interface. *Id.* at 15–16 (citing 1123 ¶¶ 44, 52, 90, 99, 118, 119, 138) (noting that larger screen sizes, rechargeable batteries, and physical interfaces with access to both power and data communications were well known in the art).

a. Claim 1

Rechargeable Battery

Patent Owner asserts that Abecassis does not disclose explicitly or inherently a rechargeable battery, as recited in claim 1. PO Resp. 54–55. Patent Owner further asserts that one of ordinary skill in the art would not have been motivated to incorporate the rechargeable battery of Herrod in the Abecassis device because the two references relate to different fields of art and there is no reported difficulty or problem that would suggest modifying the power supply of Abecassis. *Id.* at 56–57.

Petitioner responds that rechargeable batteries were "common and well-known" in the art, as confirmed by Herrod, and a person of ordinary skill in the art would have sought to use the rechargeable battery of Herrod in the Abecassis device "to eliminate the need to periodically replace ordinary (i.e., non-rechargeable) batteries." Reply 10–11 (citing Ex. 1106, 14:18–24). Petitioner further responds that Herrod and Abecassis are in the same field of art, as both references disclose the use of cellular telephones that support multimedia applications. *Id.* (citing Ex. 1123 ¶ 44; Ex. 1025 ¶ 90); Pet. 16.

We agree with Petitioner that the addition of well-known rechargeable battery technology (as disclosed in Herrod) in the device of Abecassis would have been obvious, at a minimum, to eliminate the need to periodically

replace the batteries in the Abecassis device. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) ("The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."). Moreover, we are not persuaded by Patent Owner's argument that Abecassis and Herrod are in different fields of endeavor, as both references relate to the communication of data using a cellular phone.[8]

Physical Interface

Patent Owner asserts that Abecassis does not disclose a physical interface having first and second conductive paths for the transfer of data and power, respectively, as recited in claim 1. PO Resp. 58. Patent Owner further asserts that one of ordinary skill in the art would not have sought to implement the physical interface of Herrod in the Abecassis device because Abecassis does not disclose a rechargeable battery. *Id.* at 59–60. And, to the extent that Petitioner relies upon a USB interface for this claim limitation, Patent Owner contends there is no evidence that "USB could have been successfully used to provide the power needed to recharge a battery." *Id.* at 59.

Herrod discloses a cradle with an interface operable to provide both recharging power and data communications. Ex. 1103, 6:56–64, 14:12–17, 18:66–19:4. Dr. Quackenbush persuasively testifies that one of ordinary skill in the art would have sought to use this multipurpose interface (as well

[8] Given that both Herrod and Abecassis relate to the communication of information over a network using a cellular telephone, we are also persuaded that Herrod would have come to the attention of one of ordinary skill in the art considering how to improve the portability and usability of the cellular phone of Abecassis.

as a rechargeable battery) in the device of Abecassis to "advantageously provide[] a convenient way to both recharge the device and send or receive files or other data to or from the device." Ex. 1123 ¶ 52. In addition, Petitioner presents persuasive evidence that the USB interface was well known in the art prior to 2000 and could be used to communicate data via a first conductive path and provide recharging power for a cellular phone via a second conductive path.[9] Pet. 23–24 (citing Ex. 1123 ¶ 46; Ex. 1113A; Ex. 1118, 13–14, 19–20); Reply 11–12 (citing Ex. 1025 ¶¶ 95–98).

Although Patent Owner and Dr. Wolf assert that Petitioner does not explain specifically how the physical interface of Herrod would work in the Abecassis device, they do not provide any persuasive evidence tending to refute Dr. Quackenbush's testimony that Herrod's interface could be implemented in the Abecassis device and would work for its intended purpose. *See* PO Resp. 60; Ex. 2005 ¶¶ 241–242; Ex. 1023 ¶ 52. Thus, we are persuaded that one of ordinary skill in the art would have found it obvious to implement either a USB interface or the physical interface of Herrod in the Abecassis device and would have had a reasonable expectation of success in adding these features to the device.

Collection of Instructions

Claim 1 of the '641 patent also requires:

> a collection of instructions operable when executed to communicate a collection of information about media content available from the wireless telephone device to a recipient device such that the recipient device can use the collection of information to generate a graphical menu comprising a selectable

[9] We address below (discussion of claim 9) Patent Owner's argument that a USB interface could not recharge the battery of a cellular phone in the year 2000. *See* PO Resp. 60–61.

menu item associated with the available media content.

Ex. 1101, 19:43–50.

Patent Owner asserts that there is no teaching in Abecassis of a "graphical menu item associated with . . . media content" available from a wireless telephone device. PO Resp. 63. According to Patent Owner, although the graphical menu items of Abecassis allow for "subject category selection, program selection, music and information preference selection, and source selection," these selectable menu items are merely preferences and do not necessarily represent available media content. *Id.* at 63–64; Tr. 76:16–77:15; Ex. 2005 ¶ 254. Patent Owner also argues that graphical menus are not generated by the recipient device. PO Resp. 63–64 (citing Ex. 2005 ¶¶ 253–254).

Abecassis discloses, however, that "function keys" on the remote control device are used to select available content and audio preferences using a graphical interface and Abecassis discloses that these "function keys" are configured by a specific transmission or download from the Multimedia Player. Ex. 1123 ¶ 56 (citing Ex. 1103, 9:50–59); Ex. 1103, Figs. 3, 5, 6 (depicting graphical displays of menu items). Moreover, once preferences are submitted using the remote control, the system "is designed to automatically produce a continuous playing of audio responsive to the pre-established music and information preferences without a need for the user to intervene." Reply 15–16 (citing Ex. 1103, 18:32–38); Pet. 20. Thus, we are persuaded that Abecassis discloses both a graphical menu generated

by the recipient device and the selection of menu items that are "associated" with available media content.[10]

Streaming Using an Asynchronous Channel

Patent Owner argues that neither Abecassis nor Chennakeshu discloses streaming at least a portion of song to the recipient device using a given asynchronous wireless channel of a localized communications signaling network, as recited in claim 1. PO Resp. 64–66. According to Patent Owner, Abecassis does not disclose synchronous or asynchronous communication and Chennakeshu discloses communicating "asynchronous data," not "a signal representing at least a portion of a song." *Id.* at 65–66.

Petitioner responds that Abecassis discloses streaming a signal representing a song (even under Patent Owner's narrower construction) and Chennakeshu discloses the asynchronous transfer of "data" which, according to Ericsson Review 3 (incorporated by reference in Chennakeshu), may include "video clips" and other "multimedia applications."[11] Reply 17

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[10] Patent Owner also argues that the remote control device in Abecassis cannot be the claimed "recipient device" because it was identified in the Petition as the wireless telephone device. PO Resp. 62 (citing Pet. 22). The Petition, however, identifies the Multimedia Player as the wireless telephone device and cites to portions of Abecassis to show that the Multimedia Player may transmit songs to the remote control device. *See* Pet. 18, 22.

[11] In its Motion for Observations, Patent Owner notes that Dr. Quackenbush admitted during his deposition that Bluetooth could transmit data over either the synchronous or asynchronous channel. Paper 32 (citing Ex. 2038, 83:25–38, 85:2–12, 87:12–23). During his deposition, however, Dr. Quackenbush explained that although Bluetooth could transmit data over both the synchronous and asynchronous channels, one of ordinary skill in the art would have understood that "the asynchronous channel is tailored for data" and the "synchronous channel is tailored for voice." Ex. 2038, 85:5–12, 88:9–15.

(citing Ex. 1105, 5:2–15; Ex. 1007A, 112; Ex. 1123 ¶ 72; Ex. 1025 ¶ 115). Petitioner further notes that Patent Owner "does not identify any functional difference in transmitting 'data' as opposed to a 'song' over the asynchronous channel taught by Chennakeshu." *Id.* (citing Ex. 1025 ¶ 115; Ex. 1101, 2:15–51, 2:64–67, 3:3–9 (disclosures of the '641 patent discussing the wireless transmission of "data" representing a song)).

Upon review of the parties' arguments and supporting evidence, we are persuaded that Petitioner provides a reasoned explanation as to why one of ordinary skill in the art would have sought to use Bluetooth in the device of Abecassis to stream data over an asynchronous channel.[12] Pet. 15 (asserting that asynchronous communication conserves bandwidth and is a "simple, flexible, and cost effective way to transmit data"); Ex. 1123 ¶ 73. Moreover, as noted by Petitioner, neither Patent Owner nor Dr. Wolf identifies a functional difference between communicating asynchronous "data" (as disclosed in Chennakeshu) and data that represent a "song." PO Resp. 65–66; Ex. 2005 ¶ 260.

Based on the foregoing, and upon review of the arguments and evidence set forth by Petitioner and Patent Owner, we are persuaded that Petitioner demonstrates by a preponderance of the evidence that claim 1 of the '641 patent would have been obvious over Abecassis, Herrod, and Chennakeshu.

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[12] During oral argument, Patent Owner conceded that the claims of the '641 patent do not require that the device use the Bluetooth module to stream audio data, and noted that there were a "host of" localized networks known to one of ordinary skill in the art that "would have been able to use the asynchronous channel to stream data." Tr. 54:5–58:2.

b. Claim 2

Claim 2 depends from claim 1 and further requires "wherein the wireless communications module is compliant with a Bluetooth standard." Ex. 1101, 19:58–59. Petitioner asserts that Chennakeshu discloses a wireless communications module that is compliant with the Bluetooth standard, and Dr. Quackenbush testifies that one of ordinary skill in the art at the time of the invention would have sought to implement Bluetooth in the Abecassis device because Bluetooth provided a "cost-effective" way to wirelessly communicate information between portable devices that was gaining support from manufacturers such as Nokia, IBM, Toshiba, and Intel. Pet. 15, 26; Ex. 1123 ¶¶ 83–84.

Patent Owner contends that one of ordinary skill in the art would not have been motivated to add Bluetooth capability in the device of Abecassis because there is no suggestion in Abecassis that the existing wireless communication system did not operate properly. PO Resp. 66. Patent Owner further argues that Petitioner does not explain how Bluetooth capability could be added successfully to the device of Abecassis, especially in light of the technical issues known to exist with Bluetooth at the time of the invention. *Id.* at 66–67.

For the reasons set forth above, we are persuaded that one of ordinary skill in the art would have found it obvious to add Bluetooth functionality in the device of Abecassis. *See* Ex. 1105, 4:64–5:1, 5:4–8, 5:14–15, 6:31–42 (disclosing that Bluetooth allows hands-free operation of a cellular phone in a vehicle); Ex. 1108, 3–4 (noting that Bluetooth technology "eliminates the need for wires, cables, and connectors for and between cordless or mobile phones, modems, headsets, PDAs, computers, printers . . . and paves the way

for new and completely different devices and applications"); Ex. 1123 ¶¶ 83–84. With respect to the technical issues noted by Patent Owner, Petitioner presents evidence that in 1999 Bluetooth was described as "one of the fastest growing technologies ever" with an estimated "100 million mobile phones, computers and other types of electronic equipment" expected to incorporate the technology by 2002. *See* Ex. 1025 ¶¶ 71–73 (quoting Ex. 1045, 3). Given this broad adoption of Bluetooth technology in 1999, we are not persuaded by Patent Owner's argument that technical challenges would have discouraged one of ordinary skill in the art from adding Bluetooth functionality to the device of Abecassis.

Accordingly, we conclude that Petitioner demonstrates by a preponderance of the evidence that claim 2 of the '641 patent would have been obvious over Abecassis, Chennakeshu, and Herrod. Ex. 1023 ¶¶ 81–84.

c. Claim 3

Claim 3 depends from claim 2 and further requires an email client, a voicemail client, and a browser operable to communicate with an Internet server. Ex. 1101, 19:60–63. Petitioner asserts that Abecassis discloses an email client and a voicemail client and Herrod disclose an Internet browser. Pet. 26–27; Ex. 1123 ¶¶ 86–90. Petitioner further asserts that one of ordinary skill in the art would have sought to implement Herrod's internet browser in the Abecassis device to facilitate "surfing the net," as disclosed in Abecassis. Pet. 27; Ex. 1123 ¶ 90. Patent Owner does not address directly the limitations of claim 3.

Upon review of Petitioner's arguments and Dr. Quackenbush's supporting testimony, we conclude that Petitioner demonstrates by a

preponderance of the evidence that claim 3 of the ’641 patent would have been obvious over Abecassis, Chennakeshu, and Herrod.

d. Claim 5

Claim 5 depends from claim 2 and further requires “wherein the collection of instructions comprises a set of hands-free telephone instructions operable when executed to allow the wireless telephone device to operate in a hands-free mode when the wireless telephone device is wirelessly coupled with a wireless component of an automobile.” Ex. 1101, 20:4–9.

Petitioner argues that one of ordinary skill in the art would have implemented Chennakeshu’s hands-free mode to allow for “an easier and safer way to operate” the phone of Abecassis in a vehicle. Pet. 16. Petitioner further asserts that a person of ordinary skill in the art “would understand that the use of a hands-free mode necessarily, and thus inherently, discloses the use of instructions that are operable when executed to allow the wireless telephone device to operate in the hands-free mode.” *Id.* at 28 (citing Ex. 1123 ¶¶ 94, 96).

Patent Owner argues that Petitioner’s inherency argument fails because it is possible that “the entire collection of instructions could be hardware based, as opposed to the software based configuration that the Petitioners claim is inherent.” PO Resp. 67.

In reply, Petitioner asserts that the control programs of Abecassis “‘are stored in mass memory devices 103 from installed or downloaded software . . . ,’ and thus necessarily provide software-based instructions for operating in a hands-free mode.” Reply 23 (citing Ex. 1103, 7:36–42). Petitioner also asserts that Bluetooth necessarily requires the use of software

layers, which comprise software instructions. *Id.*; Pet. 28; Ex. 1123 ¶¶ 91, 94, 96; Ex. 1025 ¶¶ 123–125.

We agree with Petitioner that Abecassis discloses that control programs may reside in memory. Ex. 1103, 7:36–42, 9:5–9. Furthermore, neither Patent Owner nor Dr. Wolf explains how hands-free functionality could be implemented using Bluetooth technology without a collection of software instructions. Thus, we are persuaded that one of ordinary skill in the art would understand that the collection of instructions operable to implement the hands-free functionality described in Chennakeshu would be stored in the memory of the Abecassis device. *See* Ex. 1123 ¶¶ 91, 96; Reply 22–23.

Based on the foregoing, we conclude that Petitioner demonstrates by a preponderance of the evidence that claim 5 of the ’641 patent would have been obvious over Abecassis, Chennakeshu, and Herrod.

e. Claim 9

Claim 9 depends from claim 8 and requires, *inter alia*, “a rechargeable power source located within the enclosure” and “a non-circular physical interface having a first and second conductive path, the non-circular physical interface operable to communicate data via the first conductive path and to receive a recharging power for the rechargeable power supply via the second conductive path.” Ex. 1101, 20:51–57.

As noted above with respect to claim 1, Petitioner contends that both rechargeable batteries and USB interfaces were well known in the art and it would have been obvious to use these elements in the device of Abecassis. Pet. 16, 19, 23–24, 47 (citing Ex. 1113A (Universal Serial Bus Specification dated September 23, 1998)); Reply 10–13; Ex. 1123 ¶ 46.

Patent Owner asserts that USB ports are not inherently disclosed in Abecassis and the specifications for recharging portable devices using a USB interface were not released until 2007, which "is a strong indication that combining battery charging capacity with data transfer into a single interface was not as simple as the Petitioners would lead us to believe." PO Resp. 60–61, 68. In support of Patent Owner's argument, Dr. Wolf testifies that the USB specifications "were not written with battery charging in mind" as the technology was initially intended "only to power small peripherals like mice and keyboards." Ex. 2005 ¶ 241 (quoting Ex. 2034).

In reply, Petitioner notes that its argument is not that USB interfaces were inherently disclosed in Abecassis, but that a person of ordinary skill in the art would have sought to include the well-known USB interface in the Abecassis device to provide both power and data communications using a single interface. Reply 11–12; Pet. 23. Petitioner also provides evidence to refute Patent Owner's argument that a USB interface could not recharge the battery of a cellular telephone. Reply 12. For example, Dr. Quackenbush points to U.S. Patent No. 6,633,932 that issued September 14, 1999, which discloses using a USB interface to recharge the battery of a portable electronic device. Ex. 1025 ¶ 95 (citing 1037, 1:10–13). Dr. Quackenbush also notes that USB 1.1 provided 500 mA of current, which a National Institute of Standards and Technologies guide indicates is sufficient to recharge the battery of a cellular telephone. *Id.* ¶ 97 (citing Ex. 1113A, 134; 1038A, 36).

Given the evidence that rechargeable batteries and non-circular USB interfaces were well known in the art prior to March 2000, and the evidence that non-circular USB interfaces were known to provide sufficient power to

recharge a cellular telephone (even if the USB specifications were not written with battery charging in mind), we are persuaded by Petitioner's argument that claim 9 would have been obvious over Abecassis, Herrod, and Chennakeshu. Ex. 1123 ¶ 46; *KSR*, 550 U.S. at 416 ("The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.").

f. Claim 14

Claim 14 depends from claim 8 and further requires "an internal battery and means for recharging the internal battery." Ex. 1101, 21:26–27. Patent Owner contends that the Petition fails with respect to claim 14 because, contrary to the Board's rules, Petitioner did not provide a claim construction for the means-plus-function term "means for recharging the internal battery." PO Resp. 69. Patent Owner further contends that Petitioner "fails to provide a reasonable reason why one of skill would modify the power source in Abecassis with the power source in Herrod." *Id.* at 70.

Petitioner responds that the term "means for recharging the internal battery" is not governed by § 112 ¶ 6 because "it connotes a known class of structures, namely battery rechargers." Reply 28 (citing Ex. 1025 ¶¶ 93, 177, 238). Petitioner further responds that, to the extent § 112 ¶ 6 applies, the function identified in this claim term is "recharging a rechargeable power supply" and the corresponding structure is a "battery recharger," which are both disclosed in Herrod. *Id*. at 29.

We agree with Patent Owner that Petitioner's identification of corresponding structure and its argument that § 112 ¶ 6 does not apply to the term "means for recharging the internal battery" should have been in

Petition, and not presented for the first time in reply. PO Resp. 69; Tr. 84:12–85:14; *see* 37 C.F.R. § 42.104(b)(3). Moreover, Petitioner does not provide adequate support for its broad identification of corresponding structure in the ’641 patent. For example, we are directed to no disclosure in the ’641 patent indicating that any “battery recharger” may recharge the battery of the device. Thus, we do not adopt Petitioner’s proposed constructions.

Patent Owner does not propose a construction for the term “means for recharging the internal battery.” *See* PO Resp. 5–11, 69–70. The ’641 patent discloses, however, that interface 904 and mount 511 allow for recharging the electronic device using an interface that provides both recharging power and data communications. Ex. 1101, 13:15–32, 18:27–39, 20:52–57. As Petitioner provides persuasive evidence to explain why one of ordinary skill in the art would have sought to add both rechargeable batteries and a USB interface—which provides both recharging power and data connectivity—to the device of Abecassis, under either Petitioner’s proposed construction or the structure for recharging the internal battery set forth in the ’641 patent, the prior art discloses the limitations of claim 14. Thus, we are persuaded that claim 14 would have been obvious over Abecassis, Herrod, and Chennakeshu.

g. Conclusion

Based on the foregoing, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1–3, 5, 9, 10, and 14 of the ’641 patent would have been obvious under 35 U.S.C. § 103 over Abecassis, Herrod, and Chennakeshu.

6. Combination of Abecassis and Chennakeshu

Petitioner contends that claims 8, 11, and 13 would have been obvious over Abecassis and Chennakeshu. Pet. 32–33, 35–38.

a. Claim 8

Claim 8 requires, in relevant part, "a memory . . . configured to store a plurality of audio files." Ex. 1101, 20:32–33. Petitioner contends Abecassis discloses both that the Multimedia Player includes "nonvolatile memory" and that a user may "purchase a plurality of DVD-Audios and store them within a Multimedia Player having the capacity to store and randomly access an entire collection of discs." Pet. 32 (citing Ex. 1103, 9:1–9, 14:35–45).

Patent Owner contends that claim 8 would not have been obvious over Abecassis and Chennakeshu because the "nonvolatile memory" of Abecassis "seems to be dedicated to storing control programs" and the DVD-Audio discs identified by Petitioner are not true "memory," but a form of optical storage that is external to the device and not "communicatively coupled" to the processor. PO Resp. 47–48 (citing Ex. 2005 ¶¶ 195, 199, 202). In support, Dr. Wolf testifies that DVD-Audio discs are not a form of storage to which the Multimedia Player could have written data in 2000. Ex. 2005 ¶¶ 201–202.

Upon review of Abecassis, we are persuaded that the Multimedia Player has memory configured to store a plurality of audio files. Specifically, Abecassis discloses that the portable Multimedia Player has memory capable of storing "significant quantities of information, e.g., 128 MB of ram," Ex. 1103, 8:59–62, and discloses that transmitted songs may be stored in memory. *Id.* at 14:60–65; Ex. 1023 ¶ 32 (noting that the Multimedia Player of Abecassis has memory and may wirelessly download

audio). Indeed, Dr. Wolf testifies that Abecassis discloses storing transmitted audio files on the Multimedia Player. Ex. 2005 ¶ 258.

Patent Owner further argues that Abecassis does not disclose a "wireless communications module compliant with the Bluetooth standard," "a selection of a selectable menu item presented on a recipient device display," or a "wireless communications module" configured to communicate "at least a portion of a streaming audio signal to recipient device using an asynchronous channel." PO Resp. 49–52. For the reasons discussed above with respect to claims 1 and 2, we are not persuaded by these arguments. Accordingly, we find that Petitioner has demonstrated by a preponderance of the evidence that claim 8 of the '641 patent would have been obvious over Abecassis and Chennakeshu.

b. Claim 11

Claim 11 depends from claim 8 and further requires "wherein the wireless communication module is operable to communicate the streaming audio signal at a communication rate that provides for a CD quality listening experience." Ex. 1101, 20:64–67.

Petitioner argues that Abecassis contemplates transmitting audio from a CD to a recipient device, which would provide for a CD quality listening experience. Pet. 35 (citing Ex. 1103, 2:43–53). Patent Owner contends that Petitioner's proposed combination would not render claim 11 obvious because Bluetooth could not transmit data at the 1.4 megabits per second rate required to provide "a CD quality listening experience." PO Resp. 53; *see also* Tr. 12:20–23, 80:10–14 (Petitioner and Patent Owner agreeing that in March 2000 Bluetooth could only obtain a data transmission rate of 721 kilobits per second).

During oral argument, Patent Owner conceded that its argument with respect to a "communication rate that provides for a CD quality listening experience" depends on its construction of a "CD quality listening experience" (requiring a transmission rate of 1.4 megabits per second) and its construction of a "streaming audio signal" (requiring a signal be played immediately as it arrives). Tr. 80:3–14 ("JUDGE TORNQUIST: Just so I understand, I don't want to cut you off, but is your argument here dependent on your claim construction about being played immediately? MR. SCHULTZ: Yes, Your Honor. If the Board does not adopt our construction, we do not have an argument to the contrary."). As we do not adopt either of these proposed constructions, we are not persuaded by Patent Owner's argument that the device of Abecassis and Chennakeshu could not communicate a "streaming audio signal at a communication rate that provides for a CD quality listening experience," as recited in claim 11.

c. Claim 13

Claim 13 depends from claim 8 and further requires the portable electronic device have a display defining a portion of the front surface of the device, a housing, an enclosure, and a communication module operable to communicate a signal representing media to a recipient device while a different wireless communication module is receiving a collection the collection of data representing the media. Ex. 1001, 21:13–25. We agree with Petitioner that Abecassis discloses the additional limitations of claim 13. Pet. 36–37; Ex. 1123 ¶¶ 131–137.

d. Conclusion

Based on the foregoing, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 8, 11, and 13 of the '641 patent

would have been obvious under 35 U.S.C. § 103 over Abecassis and Chennakeshu.

7. Abecassis, Chennakeshu, Galensky, and Herrod

Petitioner contends that claims 6 and 7 of the ’641 patent would have been obvious over Abecassis, Chennakeshu, Herrod, and Galensky. Pet. 6, 28–31. Petitioner further contends that claim 12 would have been obvious over Abecassis, Chennakeshu, and Galensky. Pet. 6, 36.

a. Claim 6

Claim 6 depends from claim 1 and further requires “wherein the display makes up more than half of the front surface” of the device. Ex. 1001, 20:10–11. Petitioner contends that Herrod’s figures disclose a display that makes up more than half the front surface of the device and one of ordinary skill in the art would have sought to implement this larger screen in the device of Abecassis to provide a larger surface “for viewing menus, selecting audio files, and performing other tasks on the device.” Pet. 16 (citing Ex. 1123 ¶¶ 90, 99).

Patent Owner argues Petitioner relies solely on the figures of Herrod as disclosing the limitations of claim 6 and, because Herrod provides no “textual disclosure” that the display takes up more than one-half of the front surface of the device, reliance on the figures of Herrod is “contrary to well-established law.” PO Resp. 71–72 (quoting *Go Medical Indus. Pty., Ltd. v. Inmed Corp.*, 471 F.3d 1264, 1271 (Fed. Cir. 2006) (“Patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.”)). Patent Owner also contends that one of ordinary skill in the art would not have been motivated to increase the size of Abecassis’s screen because

screen resolution as of March 28, 2000 "was not great" and increasing the size "would have likely resulted in a pixelated screen that would have been of little use for selecting audio files or performing other operations on the device." *Id.* at 72 (citing Ex. 2005 ¶¶ 279–282).

Petitioner contends it is irrelevant that Herrod provides no "textual disclosure" for a larger screen because Herrod's figures would have disclosed to a person of ordinary skill in the art a display that is "more than half of the front surface" of the device. Reply 23–24 (citing *Ex Parte Matsunaga*, 2012 WL 260128, at *1 (BPAI Jan. 25, 2012)). Petitioner also argues that Herrod is presumed enabled and a person of ordinary skill in the art would "certainly have known how to successfully implement a display that makes up the majority of the front surface," as evidenced by the existence of such devices on the market prior to March 2000. *Id.* at 24 (citing Ex. 1048A; Ex. 1025 ¶ 131).

Although precise proportions may not be derived from a patent drawing when the specification is silent on the issue, a patent must be considered for all that it discloses to one of ordinary skill in the art. *See In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979) (noting that drawings in a utility patent must be considered for all that they disclose to one of ordinary skill in the art, even if the feature in "the drawing was unintended or unexplained in the specification of the reference patent"); *see also Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.3d 1569, 1578 (Fed. Cir. 1991) (noting that a reference is relevant for all that it teaches). Here, Dr. Quackenbush testifies that one of ordinary skill in the art would have understood that the display of Herrod makes up more than half the front surface of the device. Ex. 1123 ¶¶ 98–99; 1025 ¶ 128; Ex. 1106, Fig 14 (Terminal 180). Patent

Owner and Dr. Wolf provide no persuasive evidence or argument to refute this testimony. Accordingly, we are persuaded that Herrod would disclose to one of ordinary skill in the art a wireless telephone device having a display that "makes up more than half the front surface" of the device.

With respect to the ability to use a larger screen in the device of Abecassis, a prior art disclosure is presumed enabled. *See In re Antor Media Corp.*, 689 F.3d 1282, 1287–88 (Fed. Cir. 2012) (noting that prior art patents are presumptively enabling). Patent Owner's general questions as to whether a larger screen would be too pixilated to permit selection of menu items do not overcome this presumption of enablement or sufficiently refute Dr. Quackenbush's testimony that one of ordinary skill in the art would have understood that the larger screen of Herrod could be used successfully in Abecassis to view menus and select audio files. PO Resp. 72 (citing Ex. 2005 ¶¶ 279–282); Ex. 1123 ¶ 99; Ex. 1025 ¶ 131 (noting that commercially available devices existed prior to March 28, 2000 that had a display that made up the majority of the front surface of the device).

Claim 6 also requires that the device be operable to receive data "at a hybrid of wireless communication rates that includes at least one faster rate and one slower rate." Ex. 1001, 20:12–14. We agree with Petitioner that Galensky discloses communicating audio information using one faster and one slower rate and that one of ordinary skill in the art would have sought to apply this method in the device of Abecassis to conserve network bandwidth as taught in Galensky. Pet. 17–18; Ex. 1107, 5:66–6:27.

Based on the foregoing, we are persuaded that claim 6 would have been obvious over Abecassis, Chennakeshu, Galensky, and Herrod. Ex. 1123 ¶¶ 90, 99.

b. Claim 7

Claim 7 depends from claim 1 and requires a "buffer memory" and the step of receiving component parts of a media at two different communication rates based on the amount of data located in the buffer. Ex. 1001, 20:16–27. We agree with Petitioner that Galensky discloses these limitations and one of ordinary skill in the art would have sought to include the buffer memory and communication rate switching of Galensky in the device of Abecassis to conserve network bandwidth. Pet. 17–18, 30–31; Ex. 1123 ¶¶ 102, 109, 129. Thus, we are persuaded that claim 7 would have been obvious over Abecassis, Chennakeshu, Herrod, and Galensky.

c. Claim 12

Claim 12 depends from claim 8 and further requires, *inter alia*, a buffer memory and communicating media at a hybrid of wireless communication rates. Ex. 1003, 21:1–12. Petitioner contends that claim 12 would have been obvious over the combination of Abecassis, Chennakeshu, and Galensky. Pet. 36. We agree with Petitioner that Galensky discloses both a buffer memory and communicating media at a hybrid of communication rates and one of ordinary skill in the art would have sought to implement the buffer memory and method of varying communication rates disclosed in Galensky in the Abecassis device to conserve network bandwidth. Pet. 17–18, 36. Thus, we are persuaded that claim 12 would have been obvious over Abecassis, Chennakeshu, and Galensky.

8. Conclusion

Upon review of the prior art of record and Petitioner's and Patent Owner's arguments and supporting testimony, we find Petitioner has demonstrated by a preponderance of the evidence that claims 1–3, 5, 9, 10,

and 14 of the ’641 patent would have been obvious over Abecassis, Chennakeshu, and Herrod; claims 6 and 7 would have been obvious over Abecassis, Chennakeshu, Herrod, and Galensky; claims 8, 11, and 13 would have been obvious over Abecassis and Chennakeshu; and claim 12 would have been obvious over Abecassis, Chennakeshu, and Galensky.

C. Ito-Based Grounds—Obviousness of Claims 8 and 11–14

Petitioner contends that claims 8, 11, 13, and 14 would have been obvious under 35 U.S.C. §103 over Ito, Haartsen, Nokia, and Rydbeck and claim 12 would have been obvious over Ito, Haartsen, Nokia, Rydbeck, and Galensky. Pet. 30–36;[13] -01181 Dec. on Inst. 19.

1. Ito

Ito is directed to “an acoustic receiving device for receiving music data via wireless circuit.” Ex. 1003, 1:10–12. In the Ito system, the acoustic receiving device is part of a cellular telephone that is operable to receive music signals transmitted via a base station. *Id.* at 6:59–67.

In one disclosed embodiment, the cellular phone provides a vehicle audio system with a list of available songs which are displayed as a selectable menu. *Id.* at 14:30–34, 22:28–36, Fig. 18. Upon selection of a particular menu item, the selected songs are delivered from a service center to the cellular phone and then retransmitted by the cellular phone to vehicle-loaded acoustic equipment for immediate playback. *Id.* at 16:54–17:28, 21:43–50, 22:1–42. In this embodiment, the cellular telephone transmits the received music to the vehicle audio system in the “weak electro-magnetic

[13] Citations to the Petition in section II.C are to the Petition filed in IPR2014-01181.

wave . . . of the FM broadcasting frequency band (normally 76 MHz to 90MHz)." *Id.* at 22:1–6.

2. Nokia

The owner's manual for the Nokia 9000i Communicator discloses a cellular phone having a rechargeable battery, a physical interface for communicating data and delivering power, a rechargeable battery, and a display that constitutes more than half of the front surface of the device. *See* Ex. 1005B, 7, 13–14, 28, 51, 81, 99. Nokia further discloses an e-mail client, an Internet web browser, and a method of voicemail access. *See id.* at 51, 55, 61–65; Pet. 26.

3. Haartsen

Haartsen is directed to a method and apparatus for "establishing multimedia communications on a shared communications channel." Ex. 1006, Abstract. In Haartsen, the communications channel is operable to communicate data, voice, and video services using either synchronous or asynchronous data communication. *Id.* at 1:17–19, 3:28–31. According to Haartsen, an "exemplary system" for implementing the invention "may be found in a technology known as 'Bluetooth,'" which provides "low-cost, robust, efficient, high capacity, ad hoc voice and data connectivity." *Id.* at 4:63–67.

4. Rydbeck

Rydbeck is directed to a cellular telephone with an entertainment module capable of "storing music or other audio signals for playback through the telephone's headset." Ex. 1008, Abstract. During operation of the Rydbeck device, "[w]hen an incoming call is received, the microprocessor 20 automatically mutes or stops the playback of audio from

the digital entertainment module 50 until the call is terminated." *Id.* at 4:12–15.

5. Obviousness of Claims 8, 11, 13, and 14 over Ito, Haartsen, Nokia, and Rydbeck

Petitioner provides detailed analysis showing where each limitation of claims 8, 11, 13, and 14 of the '641 patent is disclosed in Ito, Haartsen, Nokia, and Rydbeck. Pet. 30–35.

Petitioner contends one of ordinary skill in the art would have sought to implement the Bluetooth module described in Haartsen in the Ito phone because Bluetooth was being widely adopted in the art and provided an economically feasible means for wirelessly communicating information between various portable devices. Pet. 15 (citing Ex. 1023 ¶ 63; Ex. 1007A, 110). Petitioner further contends that one of ordinary skill in the art would have sought to transmit data in an asynchronous manner because this transmission method was known to be a "simple, flexible, and cost-effective way to transmit data" that conserves bandwidth. *Id.* (citing Ex. 1023 ¶ 63).

With respect to the combination of Nokia and Ito, Petitioner contends that one of ordinary skill in the art would have been motivated to use several of the advantageous features disclosed in Nokia in the Ito device, including "a rechargeable battery, a physical interface, altering an output signal when receiving a call, email, voicemail, an Internet browser, a hands-free mode, a display that makes up more than half of the front surface, and wirelessly upgrading software." *Id.* at 16–17; Ex. 1023 ¶¶ 44, 49, 70, 80, 83, 87, 91, 93, 100, 110, 116, 129. Petitioner further contends that it would have been obvious to implement the processor, memory, and muting capabilities of Rydbeck in Ito's phone to allow for the muting or stopping of audio playback when receiving a call. *Id.* at 17. Petitioner further contends that it

would have been obvious to use Galensky's method of using buffer memory and variable communication rates in Ito's phone because Galensky discloses that this method advantageously conserves network bandwidth. *Id.* at 17–18.

In support of Petitioner's arguments, Dr. Quackenbush testifies that one of ordinary skill in the art would have understood that each of the proposed modifications or additions to Ito's phone would work and provide the expected functionality. *See, e.g.*, Ex. 1023 ¶¶ 44, 49, 70, 80, 83, 87, 91, 93, 97, 100, 110, 116, 129.

a. Claim 8

Patent Owner contends it would not have been obvious to add Bluetooth functionality to the device of Ito because (1) adding Bluetooth would increase the cost of Ito's device, which was designed to be a lower cost alternative for digital communications; (2) Ito uses an analog signal whereas Bluetooth communicates digital information; and (3) one of ordinary skill would not have replaced the operable communications system of Ito with the relatively new Bluetooth technology, which had "numerous technical problems." PO Resp. 23–31.

We are not persuaded by Patent Owner's arguments. First, Haartsen provides numerous reasons to implement Bluetooth functionality in Ito's phone, including its ability to provide "low-cost, robust, efficient, high capacity, ad hoc voice and data connectivity." Pet. 15–16, 25 (quoting Ex. 1006, 4:63–5:2); Reply 33; Ex. 1007A. Second, although adding Bluetooth functionality to Ito's device would require some additional expense, Haartsen indicates that Bluetooth is a low-cost system and we are directed to no disclosure in Ito indicating that any increase in costs would render the

phone inoperable for its intended purpose. *See Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983) ("In other words, the fact that 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 obviousness."). Third, Petitioner presents evidence that analog signals in Ito are converted to digital signals before the phone receives the signal, Reply 33 (citing Ex. 1003, 11:34–36), and Patent Owner provides no reasoned argument to explain why these digital signals are incompatible with Bluetooth technology. Finally, although Patent Owner presents evidence that Bluetooth was a burgeoning technology in 2000 with known technical issues, Petitioner presents evidence that Bluetooth was being rapidly adopted by companies in the field prior to March 2000 despite any perceived technical challenges with the technology.[14] *Id.* at 20–21 (citing Ex. 1025 ¶¶ 71–74; Ex. 1045, 198 ("[B]ased on massive global interest and support for the technology, analysts are predicting that by 2002 over 100 million mobile phones . . . will incorporate Bluetooth technology."); Ex. 1007A, 111, 117).

Patent Owner also contends that in both the second and third embodiments of Ito the acoustic receiver is not "operable to play an audio

[14] Patent Owner argues that "use of Bluetooth for streaming media via an asynchronous link was not developed until after Patent Owner filed and began sharing the teachings of the '812 application." PO Resp. 30 (noting that a draft of the A2DP (Advanced Audio Distribution Profile) was not released until April 2001). Patent Owner does not present evidence or any testimony from Dr. Wolf, however, to show that Bluetooth could not be used to stream audio over an asynchronous link prior to the publication of A2DP.

file that represents a song," as recited in claim 8; rather, the acoustic receiver transmits music data to another device. PO Resp. 31–34. We are not persuaded by this argument. Although the acoustic receiving device in the second embodiment of Ito transmits music data for output through the speakers of the vehicle, Patent Owner directs us to no disclosure in Ito to suggest that the ability of the acoustic receiving device to play a song is removed in the second embodiment of Ito, i.e., that the device is no longer "operable" to play a song. Reply 30 (citing Ex. 1025 ¶¶ 156–157). Moreover, Patent Owner does not explain why streaming a song for output via the speakers of a vehicle does not represent a playing of an audio file by the portable electronic device. Accordingly, we are persuaded that Ito discloses a "portable device . . . operable to play an audio file that represents a song," as recited in claim 8.

Patent Owner further argues that in embodiment 2 of Ito neither the radio receiver (72) nor the vehicle display unit (71) features "a selectable menu item," as required in claim 8. PO Resp. 33. Figure 18 of Ito is reproduced below:

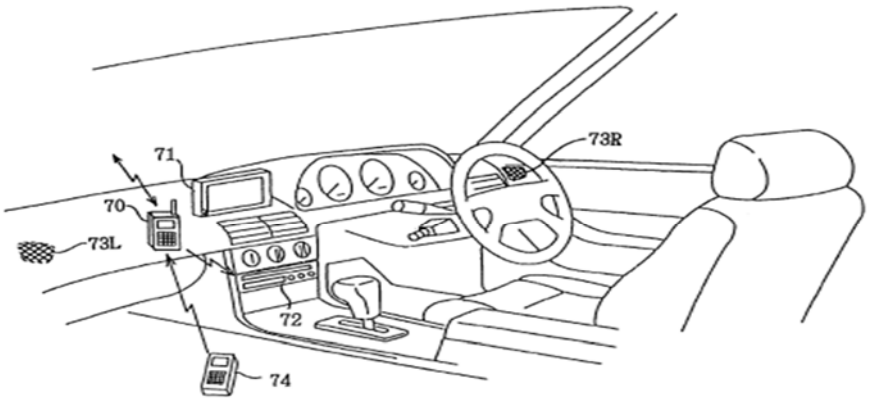

FIG. 18

Figure 18 depicts the receiving end of the second embodiment of Ito.

In the embodiment depicted in Figure 18, a menu identifying audio information available from the music offering service is displayed on display unit 71. Ex. 1003, 22:28–42. Subsequently, remote controller 74 may be used to start the music offering service. *Id.* at 22:22–27, 23:1–10. Acoustic receiver device 70 then receives music data transmitted from the PES base station and transmits this music data to the radio receiver of vehicle loaded acoustic equipment 72, which outputs the song via speakers 73R and 73L. *Id.* at 21:43–50, 22:1–13, 23:1–52.

Patent Owner contends that in this second embodiment of Ito, radio receiver 72 and vehicle display unit 71 do not feature a selectable menu item because the selection is controlled by remote controller 74, which cannot play audio. PO Resp. 33. Thus, Patent Owner argues "Ito's second embodiment does not disclose a recipient device that is capable of both displaying a selectable menu item and communicating a specific selection back." *Id.*

We agree with Petitioner, however, that Patent Owner has not explained why claim 8 requires that any particular device select the selectable menu item or why claim 8 requires that a particular device communicate the selection of a selectable menu item back to the portable electronic device. Reply 32. Thus, we are persuaded that Ito discloses the "selectable menu item" of claim 8.

Based on the foregoing, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claim 8 would have been obvious over Ito, Haartsen, Nokia, and Rydbeck. Pet. 15–18, 20–21, 30–31; Ex. 1023 ¶¶ 51–56, 119.

b. Claim 11

Claim 11 requires a "wireless communication module" that is operable to communicate streaming audio "at a communication rate that provides for a CD quality listening experience." Ex. 1001, 20:64–67. Petitioner asserts Bluetooth could be used to stream the audio content of Ito at a rate that "provides for a CD quality listening experience." Pet. 34 (citing Ex. 1023 ¶¶ 131–132). Patent Owner responds that a CD quality listening experience requires a transfer rate of 1.4 megabits per second, which neither Ito's analog FM system nor Bluetooth could provide. PO Resp. 38–39 (citing Ex. 2005 ¶¶ 176–178).

We are not persuaded by Patent Owner's argument. First, as noted previously, Patent Owner's arguments with respect to claim 11 rely on constructions for the terms "at a communication rate that provides for a CD quality listening experience" and "streaming audio signal" that we do not adopt. Tr. 80:3–8. Second, Petitioner provides persuasive evidence that compression formats, such as MP3, could provide a CD quality listening experience when communicated by Bluetooth.[15] Reply 37 (citing Ex. 1025 ¶¶ 169–171; Ex. 1041A; Ex. 1049A).

Accordingly, we are persuaded that claim 11 of the '641 patent would have been obvious over Ito, Haartsen, Nokia, and Rydbeck.

c. Claim 14

Claim 14 requires, among other things, "an internal battery and means for recharging the internal battery." Ex. 1001, 21:26–27. As noted above,

[15] We note that the '641 patent indicates the "disclosed embodiments"—which include embodiments transmitting MP3s and using Bluetooth communication—allow for a "CD quality sound." Ex. 1001, 2:18–21, 7:45–50, 16:24–34.

Patent Owner asserts that Petitioner provides no construction for this mean-plus-function term in the Petition and, even if it had, there is no persuasive evidence that one of ordinary skill in the art would have sought to add a rechargeable battery and a means for recharging this battery in the telephone device of Ito. PO Resp. 39–41. Patent Owner reasons that Ito was designed to be a low-cost alternative to existing cellular systems and, therefore, one of ordinary skill would not have increased the cost of Ito's system by adding a rechargeable battery or a means for recharging this battery. *Id.* at 41–42.

Petitioner replies that rechargeable batteries were well known in the art and, although costs are irrelevant to the issue of patentability, rechargeable AA or AAA batteries could have been added to the Ito device with no increase in costs. Reply 39–40 (citing *In re Magna Elecs., Inc.*, 2015 WL 2110525, at *4 (Fed. Cir. May 7, 2015)).

As noted above, at a minimum, the "means for recharging the internal battery" in claim 14 includes an interface that provides both power and data connectivity. Nokia discloses a rechargeable Lithium-ion battery and a means for recharging this battery using an interface that provides both power and data connectivity. *See* Ex. 1005A, 14–15; Pet 19 (Ex. 1023 ¶¶ 41–44, 45–49). In view of this disclosure, as well as the understood utility of using a rechargeable battery and a multifunctional interface in a portable device, we are persuaded that one of ordinary skill in the art would have sought to add Nokia's rechargeable battery and interface in the phone of Ito, even if this addition would increase the cost of Ito's phone. *See Orthopedic Equip.*, 702 F.2d at 1013; Ex. 1023 ¶ 42; Ex. 1025 ¶¶ 175–176; *see also* Ex. 2005 ¶ 111 (Dr. Wolf noting that "[i]t is my opinion that a person of skill in the art at the time of invention would have understood that the best way to maintain

portability would be to incorporate a portable power source, such as a rechargeable battery.”).

Accordingly, we are persuaded that claim 14 of the ’641 patent would have been obvious over Ito, Haartsen, Nokia, and Rydbeck.

6. Obviousness of Claim 12 over Ito, Haartsen, Nokia, Rydbeck, and Galensky

Claim 12 requires, among other things, a “buffer memory.” Ex. 1001, 21:10-12. Petitioner contends it would have been obvious to include a buffer memory in Ito’s phone in view of Galensky. Pet. 29, 35.

Galensky discloses a method for receiving and playing multimedia files streamed over a wireless communications network. Ex. 1009, Abstract. Galensky also discloses that “[t]o allow the wireless network provider to serve more subscribers and allow more users to access the system . . . it is advantageous to conserve bandwidth within the wireless network” by transmitting data at an initial higher rate and then lowering the transmission rate once an acceptable buffer is created in the buffer memory. *Id.* at 5:66–6:11.

Petitioner contends that one of ordinary skill in the art would have sought to add Galensky’s buffer memory in Ito’s phone to take advantage of Galensky’s method of conserving network resources. Pet. 17–18, 29. Patent Owner responds that one of ordinary skill in the art would not have been motivated to add buffer memory to Ito’s phone because neither the transmission of data from the PHS station to the acoustic receiver or the analog FM transmission from the acoustic receiver to the vehicle audio system in Ito requires buffering. PO Resp. 45. In support of this argument, Dr. Wolf testifies that a person of ordinary skill in the art “would understand that the transmission between the PHS base station and the acoustic receiver

device does not exhibit sufficiently variable data rates that would require a buffer." Ex. 2005 ¶ 189.

Dr. Wolf's assertion that Ito's transmission rate is not sufficiently variable to require a buffer memory is not persuasive because it addresses Ito's system individually and not as combined with Galensky. Specifically, Dr. Wolf does not explain why one of ordinary skill in the art would not have sought to add buffer memory to Ito's phone to facilitate the implementation of the variable transmission rate method *disclosed in Galensky*. Ex. 1025 ¶ 181.

Upon review of Petitioner's and Patent Owner's arguments, we credit the testimony of Dr. Quackenbush that one of ordinary skill in the art would have been motivated to add buffer memory to the device of Ito to obtain the benefits of transmission rate switching disclosed in Galensky. Ex. 1023 ¶¶ 98–100. Accordingly, we are persuaded that claim 12 would have been obvious over Ito, Haartsen, Nokia, Rydbeck, and Galensky.

7. Conclusion

Upon review of the record as a whole, including Patent Owner's arguments and the supporting testimony of Dr. Wolf, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 8, 11, 13, and 14 of the '641 patent would have been obvious under 35 U.S.C. §103 over Ito, Haartsen, Nokia, and Rydbeck and claim 12 would have been obvious over Ito, Haartsen, Nokia, Rydbeck, and Galensky.

D. Obviousness over Ohmura and Ahn (Claims 8 and 11) and Ohmura, Ahn, and Nokia (Claims 13 and 14)

Petitioner contends that claims 8 and 11 of the ’641 patent would have been obvious over Ohmura and Ahn and claims 13 and 14 would have been obvious over Ohmura, Ahn, and Nokia. Pet. 30–59.[16]

1. Priority

Ohmura was filed April 4, 2001 and issued on August 30, 2005. Pet. 27; Ex. 1203. Ahn was filed October 26, 2001 and published on October 28, 2004. Pet. 28; Ex. 1205. Patent Owner contends that Ohmura and Ahn are not prior art with respect to the ’641 patent because the ’641 patent[17] is entitled to the benefit of the March 28, 2000 filing date of U.S. Patent Application No. 09/537,812 (“the ’812 application”). PO Resp. 73.

To establish entitlement to the benefit of an earlier filed application, a patentee must demonstrate that “a person of ordinary skill in the art would recognize that the applicant possessed what is claimed in the later filed application as of the filing date of the earlier filed application.” *Noelle v. Lederman*, 355 F.3d 1343, 1348 (Fed. Cir. 2004). To make this showing, a patentee must demonstrate that “each application in the chain leading back to the earlier application” complies with the written description requirement of 35 U.S.C. § 112. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1571 (Fed. Cir. 1997).

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[16] Citations to the Petition in section II.D are to the Petition filed in IPR2014-01184.

[17] The ’641 patent issued from U.S. Patent Application No. 13/673,391 (“the ’391 application”), which has a filing date of November 9, 2012. Ex. 1201.

a. Board Determination of Priority Issues

As a preliminary matter, Patent Owner asserts that the Board is prohibited from determining issues of priority because such an inquiry "necessarily implicates a challenge to the written description of the challenged claims," which may not be resolved in an *inter partes* review proceeding. PO Resp. 73–74 (citing 35 U.S.C. § 311(b); 37 C.F.R. § 21.104(b)(2)). We do not agree.

In analogous reexamination proceedings—which are likewise limited to grounds of unpatentability based on prior art patents and publications—the Federal Circuit has determined that a priority analysis is not only permissible but a "critical legal tool." *See In re NTP, Inc.*, 654 F.3d 1268, 1277 (Fed. Cir. 2011); 35 U.S.C. § 311 (limiting review in *inter partes* reviews to "prior art consisting of patents or printed publications"). Patent Owner provides no reasoned argument as to why *inter partes* review proceedings should be treated differently from reexamination proceedings on the question of whether the Board may reach issues of priority. Thus, we are not persuaded that we are prohibited from determining whether an involved patent is entitled to the benefit date of an earlier filed application when resolving whether a reference is prior art.

b. Written Description Support

Petitioner contends that claims 8, 11, 13, and 14 are not entitled to a priority date earlier than January 16, 2008, the filing date of the great-grandparent of the '641 patent, because there is no written description support in earlier priority applications for the following limitation of claim 8:

> A portable electronic device having . . . a wireless communication module communicatively coupled to the

> processor and operable to communicate a streaming audio signal that represents a playing of the song to a recipient device via a localized communications signaling network *in response to a selection of a selectable menu item presented on a recipient device display . . . .*

Ex. 1201, 20:34–40 (emphases added); Pet. 10.

Patent Owner contends that both the ’812 application and the ’641 patent Specification demonstrate that the inventors were in possession of a method of communicating information to an electronic device that could be used to generate a selectable menu item.[18] PO Resp. 84–90, 97–98 (citing Ex. 2005 ¶¶ 287, 289–291). In support of this argument, Patent Owner directs our attention to the following passage in the ’812 application:

> FIG. 4 illustrates a graphical user interface (GUI) for displaying selectable audio information according to one aspect of the present invention. The GUI may be operable with a computer system, cellular device, PDA, or other electronic devices or systems operable to display the GUI of FIG. 4. The GUI, shown generally at 400, may be displayed using a conventional web browser 402 such as Microsoft®. Internet Explorer, a WAP browser, or other browsers operable to display the audio information. Browser 402 includes browser functions, shown collectively at 403, for navigating a network such as the Internet or an intranet. Homepage 401 may be displayed using browser

[18] Patent Owner asserts that the Examiner resolved the issue of written description support during prosecution and notes that the Board previously found a similar claim limitation was entitled to a priority date of March 28, 2000. PO Resp. 102–105. As noted by Petitioner, however, Patent Owner directs our attention to no discussion or reasoned analysis by the Examiner related to the limitations of claim 8 at issue here. Reply 41. Moreover, in a different reexamination proceeding, the Board found that a similar claim limitation did not have adequate written description support in the original application. *See* Reexamination 95/001,281 (Decision on Rehearing 12/30/2015). Thus, we are not persuaded that the question of written description support for claim 8 has been resolved by the Office.

> 402 and may include several functions, features, information, etc. related to audio information. Home page 401 may be developed using several different types of programming (i.e., HTML, XML, Java, etc.) used to developing a network location or website.

PO Resp. 98 (quoting Ex. 1218, 616:9–26). According to Patent Owner, this disclosure "makes clear that a graphical user interface can be present on a variety of electronic devices," including the recipient device described in claim 8. PO Resp. 98 (citing Ex. 2005 ¶¶ 287, 290).

Patent Owner further asserts that the '812 application disclosure demonstrates that the GUI discussed above allows the user to select menu items:

> Homepage 401 may also include several tabs for efficiently navigating homepage 401. Library tab 405 may be provided to allow a user to browse available audio information that may be presented by title, genre, artist, decade, culture, etc. Store tab 407 may also be provided for locating items available for purchase such as CDs, PDA devices, MP3 players, wireless communication hardware, interfaces, software or other types of products that may be purchased while on-line. Chat tab 408 may also be provided allowing a user to chat with other users of home page 401. For example, a guest musical artist may be available to chat with visitors of home page 401 via a chat page associated with chat tab 408. Home page 401 may also include contest tab 409 for displaying current contests, prizes, and/or winners.

PO Resp. 99 (quoting Ex. 1218, 617:13–27).

As a whole, Patent Owner contends "these disclosures support the fact that the inventors possessed the invention of communicating information in response to a selection of a selectable menu item presented on a graphical menu." PO Resp. 100.

We agree that the disclosures of the '812 application as a whole demonstrate that the inventors were in possession of communicating a

selectable graphical menu to an electronic device and delivering information to this electronic device in response to the selection of a menu item on the electronic device. *See* Ex. 1001, 4:33–49, 5:42–45. The question, however, is whether the patentee was in possession of transmitting a streaming audio signal *from a portable electronic device* to a recipient device in response to the selection of a selectable menu item *displayed on the recipient device*, as set forth in claim 8. Ex. 1201, 20:29–45. Upon review of the disclosures recited by Patent Owner and the testimony of Dr. Wolf, we agree with Petitioner that this functionality is not expressly disclosed in the ’812 application or the ’641 patent Specification. The recited applications indicate, instead, that the selectable menu information and streaming audio are transmitted from a digital engine and coupled storage device to an electronic device and not from a portable electronic device *to a recipient device* in response to a selectable menu item displayed on *the recipient device*. *See, e.g.*, 1001, 4:33–63, Fig. 1.

Ipsis verbis disclosure is not necessary, however, to satisfy the written description requirement of section 112. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1570 (Fed. Cir. 1996). Thus, we must also determine whether, despite the lack of express disclosure, one of ordinary skill in the art would have understood that Patent Owner was in possession of the invention set forth in claim 8. *Id.* In conducting this analysis, we are cognizant that “a description which renders obvious a claimed invention is not sufficient to satisfy the written description requirement of that invention.” *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 1567 (Fed. Cir. 1997).

Dr. Wolf recites the same disclosures as Patent Owner and concludes that one of ordinary skill in the art would understand that the ’812

application demonstrates possession of an invention wherein a radio dial transmitted to a recipient device could be used to cause the transmission of selected information to the recipient device. Ex. 2005 ¶¶ 287, 290. Dr. Wolf does not address, however, the specific configuration set forth in claim 8 of the ’641 patent. In particular, Dr. Wolf does not explain why one of ordinary skill in the art would understand from the recited disclosures that the patentee was possession of a method of streaming a song from a *portable electronic device* to a recipient device in response to the selection of a selectable menu item “presented on a recipient device display.”

In contrast, Dr. Quackenbush analyzes the disclosures of the ’641 patent in detail and concludes that one of ordinary skill in the art, upon review of the priority disclosures as a whole, would not understand the patentee to be in possession of the invention set forth in claim 8. Ex. 1025 ¶¶ 189–207. Specifically, Dr. Quackenbush concludes that the disclosures of the ’812 application and the ’641 Specification focus on the transmission of data from a storage device and digital engine to an electronic device, and not from a portable electronic device to a recipient device, in response to a selection of a selectable menu item presented on a recipient device display. Ex. 1025 ¶¶ 193–203.

Upon careful review of both Dr. Wolf’s and Dr. Quackenbush’s testimony, we credit the testimony of Dr. Quackenbush that one of ordinary skill in the art would not understand the patentee to be in possession of a method of streaming a song from a *portable electronic device* to a recipient device in response to the selection of a selectable menu item “presented on a recipient device” prior to November 9, 2012. Accordingly, we find that Ohmura and Ahn are prior art with respect to claim 8 of the ’641 patent.

And, because claims 11, 13, and 14 each depend from claim 8, we likewise find that Ohmura and Ahn are prior art with respect to claims 11, 13, and 14.

2. Obviousness of Claims 8, 11, 13, and 14 – Ohmura, Ahn, and Nokia

a. Ohmura

Ohmura is directed to a system for distributing musical content in a vehicle. Ex. 1203, 1:11–13. The Ohmura system is composed of an audio apparatus mounted in a vehicle that communicates with one or more portable audio apparatuses containing stored music. *Id.* at 3:49–51, 3:64–4:1, 8:19–27. Using a displayed selectable menu, a user may select music from any of the available portable devices, which is then communicated wirelessly using a short-distance data communication system, such as Bluetooth, to the audio apparatus and played in real-time through the vehicle's speakers. *Id.* at 9:39–42, 13:21–27, 20:59–67, Fig. 6.

b. Ahn

Ahn discloses the transmission of music data using Bluetooth. Ex. 1205, Abstract. In the Ahn system, music data may be streamed from a cellular phone to the car's audio equipment using "an asynchronous call path." *Id.* ¶¶ 26, 34, 36.

c. Analysis

Petitioner provides detailed analysis showing where the limitations of claims 8 and 11 (Ohmura and Ahn) and claims 13 and 14 (Ohmura, Ahn, and Nokia) are disclosed in Ohmura, Ahn, and Nokia. Pet. 49–52, 54–59. Petitioner also provides persuasive analysis as to why one of ordinary skill in the art would have sought to combine the various features of Ohmura and Ahn. *Id.* at 30–33, 51, 52, 54, 55, 58, 59.

Patent Owner asserts that one of ordinary skill in the art would not have sought to combine the features of Ohmura and Ahn because Ohmura is limited to use with a car audio apparatus and adding wireless telephone capabilities in that limited setting would increase costs yet provide "very limited benefit." PO Resp. 111. Patent Owner also asserts that using Ahn's method of transmitting data over an asynchronous channel would not provide any benefit in the Ohmura device because the Bluetooth standard teaches away from using the asynchronous channel for "audio traffic." *Id.* (citing Ex. 2005 ¶ 299). Patent Owner further asserts that Dr. Quackenbush provides no evidence to support his conclusion that one of ordinary skill in the art would have found the combination of Ohmura and Ahn routine, especially given Ohmura's teaching that wirelessly downloading music entails high costs. *Id.* at 112 (citing 2005 ¶ 296).

Petitioner responds that the device of Ohmura "is not constrained for use within a car" and, in any event, claims 8, 11, 13, and 14 do not require that the portable device be in the form of a wireless telephone. Reply 47. Dr. Quackenbush also testifies that, contrary to Dr. Wolf's testimony, the Bluetooth standard does not teach away from using the asynchronous channel to communicate music data. Ex. 1025 ¶¶ 212–213, 215.

As noted by Petitioner, claims 8, 11, 13, and 14 do not require a wireless telephone device. Accordingly, we are not persuaded by Patent Owner's argument that the limited value and increased costs involved in adding this feature are relevant to the combination of Ohmura and Ahn with respect to claims 8, 11, 13, and 14. Even if this functionality were required, however, Ahn discloses the benefit of using wireless telephone capability to allow for telephone calls using a car's audio apparatus. Ex. 1205 ¶¶ 60, 64.

That this benefit might be limited to the time period one is inside of a car does not teach away from or otherwise counsel against implementing this functionality in the device of Ohmura.

With respect to Dr. Wolf's testimony that the Bluetooth standard teaches away from using the asynchronous channel for audio traffic, we note that Dr. Wolf provides no citation or argument in paragraph 299 of her declaration to support this assertion. In contrast, Dr. Quackenbush provides evidence demonstrating that the asynchronous channel of Bluetooth is customarily used for data, including data representing a song. Ex. 1025 ¶ 215; Ex. 2038, 85:5–12, 88:9–15. Thus, we are not persuaded that the Bluetooth standard would teach away from using an asynchronous channel to stream audio to another device.

With respect to Patent Owner's arguments that there is no evidence that the combination of Ohmura and Ahn would be routine, we note that—except for the increased costs involved with downloading audio from a network location[19]— Dr. Wolf provides no evidence to refute Dr. Quackenbush's testimony that a person of ordinary skill would have had no difficulty in combining the disclosed features of Ohmura and Ahn. *See Orthopedic Equip.*, 702 F.2d at 1013; *see also* 1205 ¶ 14 (disclosing the benefits of downloading music data from a music-data-providing service). As such, we do not find Patent Owner's arguments persuasive.

CD quality listening experience

Patent Owner contends that there is no evidence that Ohmura or Ahn

[19] We note that claim 8 does not require connection to a music distribution service, only a connection between a portable electronic device and a recipient device.

could stream audio at a communication rate that provides for a CD quality listening experience. PO Resp. 115 (citing Ex. 2005 ¶ 303). According to Patent Owner, Ohmura only discloses saving music from a CD in compressed form, which does not provide for a CD quality listening experience, and one of ordinary skill in the art would not have considered storing CD-quality audio in the portable apparatuses of Ohmura because this "would have been prohibitively expensive in the time frame of the invention." *Id.* (citing Ex. 2005 ¶ 304).

Petitioner responds that the '641 patent repeatedly refers to compressed audio formats, such as MP3s, and implies that these compressed formats allow for the enjoyment of "CD quality sound." Reply 49 (citing Ex. 1001, 2:18–21 (noting that the disclosed embodiments of the '641 patent allow for CD quality sound), 4:53–55 ("For example, the information could be several songs or titles configured as an audio file and formatted in a digital format such as an MP3 file, wave file, etc."), 9:15–19). Petitioner also asserts that Ohmura teaches reading "music pre-stored in a storage medium such as CD" and communicating this information in uncompressed format, which one of ordinary skill in the art would understand could have been transmitted using Bluetooth at a rate that provides for a CD quality listening experience. *Id.* at 50 (citing Ex. 1203, 25:41–44, 26:33–48, 25:1–5, 25:47–56, Figs. 2, 16; Ex. 1025 ¶ 225).

As noted previously, Patent Owner's arguments rely upon proposed claim constructions we do not adopt. Moreover, even if we were to find that "streaming audio" required the immediate playback of audio data, we are persuaded that CD audio stored in a compressed format, such as MP3s, could be streamed using Bluetooth at a rate that provides for a "CD quality

listening experience." Reply 50 (citing Ex. 1223 ¶ 126; Ex. 1025 ¶¶ 222, 227).

Accordingly, we are persuaded that claim 11 would have been obvious over Ohmura and Ahn.

simultaneously communicate and receive data

Claim 13 depends from claim 8 and requires, *inter alia*:

> a different wireless communication module located within the enclosure and operable to receive a collection of data representing a media, wherein the wireless communication module communicatively coupled to the processor is further operable to wirelessly communicate a signal representing the media to the recipient device while the different wireless communication module is receiving the collection of data representing the media.

Ex. 1001, 21:17–25.

Patent Owner contends that Ohmura and Ahn both disclose transmitting and communicating data, but "neither disclose the ability to communicate and receive data simultaneously or at the same time." PO Resp. 116 (citing Ex. 2005 ¶¶ 306–309). Petitioner responds that the term "while" does not require communicating or receiving data "simultaneously or at the same time" and even if such a temporal requirement existed, Ohmura and Ahn disclose transmitting and receiving audio at the same time. Reply 51.

Ahn discloses that the music-data-providing server may transmit either streaming or non-streaming music data to the mobile station via a wireless transmitting and receiving unit. Ex. 1205 ¶ 36, Fig. 2. The system of Ahn decompresses these signals differently according to the data type. *Id.* ¶ 38. For example, if the data are in the form of "streaming music data,"

these data are transmitted to the "car kit" using Bluetooth and reproduced before the song is completely received. *Id.* ¶ 37.

Given that Ahn has two communication units (a wireless transmitting and receiving unit and a Bluetooth communication unit) and reproduction of the streaming audio signal through the car kit is initiated before the music data are completely received, we are persuaded by Dr. Quackenbush's testimony that one of ordinary skill in the art would have recognized that Ahn discloses a portable device that can receive and communicate data at the same time using two different wireless communication modules. Ex. 1223 ¶¶ 136–138; Ex. 1025 ¶¶ 231–233; *see also* Ex. 1205, claims 14 and 17 (disclosing that music data may be output in real-time "while" the music data are received from the music-data-providing server).

internal battery and means for recharging the internal battery

As noted previously, claim 14 requires "an internal battery and means for recharging the internal battery." Ex. 1001, 21:26–27.

Petitioner argues that Nokia discloses both a rechargeable battery and a means for recharging this battery, in the form of an interface operable to communicate data via a first conductive path and receive power via a second conductive path. Pet. 35–36, 59. Petitioner further argues that one of ordinary skill in the art would have sought to use Nokia's battery and interface in the Ohmura device because the utility of rechargeable batteries and multifunction interfaces in portable devices was well understood. Pet. 32, 35, 41; Ex. 1223 ¶¶ 49–50, 52–57.

Patent Owner argues Petitioner has failed to carry its burden to identify corresponding structure for this means-plus-function claim term and, regardless, Petitioner provides no reasoned motivation for one of

ordinary skill in the art to add Nokia's rechargeable battery and interface in the device of Ohmura and Ahn. PO Resp. 118–122. According to Patent Owner, there are no disclosed issues with the power systems of Ohmura and Ahn and, even if one sought to modify these power systems, one of ordinary skill in the art could not implement Nokia's battery and interface without access to Nokia's proprietary documents. *Id.* at 120–121. In support of Patent Owner's arguments, Dr. Wolf testifies that implementing the Nokia interface and battery in Ohmura's device "may" require a license from Nokia and undue experimentation to modify the internal components due to potential voltage incompatibilities. Ex. 2005 ¶ 312.

In response, Petitioner contends there is no evidence that a license from Nokia or a change in voltage would be required to implement Nokia's interface and battery in the device of Ohmura and Ahn. Reply 52–53 (citing Ex. 1025 ¶¶ 234–237). Dr. Quackenbush also reiterates his testimony that one of ordinary skill in the art would have understood how to implement a rechargeable battery and multifunction interface in the device of Ohmura. Ex. 1025 ¶¶ 234–237.

As noted previously, at a minimum, the "means for recharging the internal battery" in the '641 patent includes an interface capable of delivering power and communicating data. Petitioner provides persuasive evidence that Nokia discloses both a rechargeable battery and an interface that provides both power and data. Petitioner also provides a reasoned rationale for adding the battery and interface of Nokia in the device of Ohmura and Ahn. Ex. 1223 ¶¶ 57, 140. Patent Owner's and Dr. Wolf's questions as to whether a license from Nokia might be required to implement the disclosed battery and interface do not call into question the

obviousness of the combination. *See Orthopedic Equip.*, 702 F.2d at 1013 (evidence that businessmen might not make the combination for business reasons does not render a combination nonobvious). Nor does Dr. Wolf's listing of hypothetical issues that might interfere with combining the two references sufficiently refute the testimony of Dr. Quackenbush that one of ordinary skill in the art would have had a reasonable expectation of success in combining these references.

d. Conclusion

Based on the foregoing, we find that Petitioner has demonstrated by a preponderance of the evidence that claims 8 and 11 would have been obvious over Ohmura and Ahn and that claims 13 and 14 would have been obvious over Ohmura, Ahn, and Nokia.

III. CONCLUSION

Having carefully reviewed the arguments and evidence presented by Petitioner and Patent Owner, as well as the supporting testimony of Dr. Quackenbush and Dr. Wolf, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claims 1–3 and 5–14 of the '641 patent would have been obvious over the prior art of record.

IV. SCOPE OF REPLY EVIDENCE

Patent Owner contends that Petitioner's Reply "improperly supplements arguments that could and should have been presented in the Petition." Paper 26. According to Patent Owner, to rely on evidence or argument in the Reply, Petitioner must demonstrate that these arguments and evidence were either presented in the Petition or explain why they could not have been made at that time. *Id.* at 1.

A. Claim Construction Arguments

Patent Owner contends that Petitioner presents new claim constructions arguments with respect to the means-plus-function limitation "means for recharging the internal battery." *Id.* at 2. On this point, however, we did not adopt Petitioner's claim construction arguments in the Reply. Thus, Patent Owner's argument is moot.

Patent Owner also argues that Petitioner provided new arguments and evidence with respect to the construction of a "communication rate that provides for a CD quality listening experience." Paper 26, 2. On this point, we note that Petitioner did not change its proposed construction of this term in its Reply. *See* -01182 Pet. 11–12 (citing Ex. 1101, 2:18–21, 9:57–67); Reply 6–7. Moreover, Petitioner cannot anticipate every claim construction argument that Patent Owner may make in its response and is entitled to provide argument and evidence in its Reply to refute arguments and evidence in Patent Owner's Response. 37 C.F.R. §42.23(b).

B. Priority Arguments

Patent Owner asserts that Petitioner presents new arguments and evidence in its Reply related to priority. Paper 26, 3–4. According to Patent Owner, Petitioner asserted three challenges to the appropriate priority date for the '641 patent, which did not include an argument that "a recipient device cannot be a portable electronic device." Paper 26, 3 (citing Reply 43). We do not agree. The Petition reasonably distinguishes between actions taken by the portable electronic device, for example "electronic device 300," and a different recipient device. *See* -01184 Pet. 19 ("It does not, however, disclose that a recipient device receives information from a *portable device* to generate a graphical menu on the recipient device or that

audio content is sent from the *portable device* to the recipient device in response to the selection of a menu item on the recipient device.") (emphases added).

Patent Owner also argues that Petitioner provided arguments and evidence in its Reply regarding prior Office proceedings that could have been raised in the Petition. Paper 26, 3–4. We have reviewed these arguments and the supporting evidence of Dr. Quackenbush identified by Patent Owner and find that they reasonably respond to arguments raised by Patent Owner in its response. As such, we are not persuaded that these arguments or the evidence supporting these arguments are improper.

C. Additional Arguments and Evidence

Patent Owner argues that Petitioner provides many additional new arguments as well as evidence supporting these arguments in its Reply. Paper 26, 4. Patent Owner also objects that Petitioner often uses additional citations to exhibits filed with the Petition to support its arguments in Reply. *Id.* at 4–5.

Again, Petitioner cannot anticipate or seek to refute every possible argument that will be made by Patent Owner in its Petition. Moreover, Patent Owner had sufficient opportunity through cross-examination and motions for observations on cross-examination to address the evidence submitted by Petitioner in its Reply. *See Belden v. Berk-Tek LLC*, 805 F.3d 1064, 1082 (Fed. Cir. 2015). Accordingly, we are not persuaded that Petitioner's arguments and evidence submitted in the Reply are improper or should otherwise be ignored.

D. Conclusion

Upon review of Patent Owner's identifications and the arguments and evidence submitted in Petitioner's Reply, we find that Petitioner's arguments and supporting evidence reasonably respond to arguments and evidence present by Patent Owner in its response. Accordingly, we do not strike or disregard this evidence.

V. ORDER

It is

ORDERED that claims 1–3 and 5–14 of U.S. Patent 8,532,641 B2 are *unpatentable*;

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

FURTHER ORDERED that both parties may file their oral argument demonstratives as an exhibit in IPR2014-01181.

PETITIONER:

J. Steven Baughman
ROPES & GRAY LLP
steven.baughman@ropesgray.com

Gabrielle E. Higgins
ROPES & GRAY LLP
gabrielle.higgins@ropesgray.com

PATENT OWNER:

Ryan M. Schultz
ROBINS, KAPLAN, MILLER & CIRESI LLP
rmschultz@rkmc.com

Thomas R. DeSimone
ROBINS, KAPLAN, MILLER & CIRESI LLP
trdesimone@rkmc.com