

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR AMERICA,
Petitioner,

v.

STRATOSAUDIO, INC.,
Patent Owner.

IPR2021-01371
Patent 8,200,203 B1

Before JUSTIN T. ARBES, HYUN J. JUNG, and KEVIN C. TROCK,
Administrative Patent Judges.

TROCK, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Hyundai Motor America (“Petitioner”) filed a Petition (Paper 2 (“Pet.” or “Petition”)) to institute an *inter partes* review of claims 43, 47, 48, 51–53, 61, and 62 (the “challenged claims”) of U.S. Patent No. 8,200,203 B1 (Ex. 1001, “the ’203 Patent”). StratosAudio, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and any response thereto shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and the other evidence of record, including the Preliminary Response of Patent Owner, we conclude that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in establishing at least one of the challenged claims of the ’203 Patent as unpatentable under the grounds presented in the Petition. Pursuant to § 314, we hereby institute an *inter partes* review as to the challenged claims of the ’203 Patent.

A. *Real Parties in Interest*

Petitioner identifies Hyundai Motor America and Hyundai Motor Company as real parties-in-interest. Pet. 2. Patent Owner identifies itself, StratosAudio, Inc., as the only real party in interest. Paper 5, 1.

B. *Related Matters*

The parties identify the following as related matters:

- *StratosAudio, Inc. v. Hyundai Motor America*, No. 6:20-cv-01125 (W.D. Tex.);
- *StratosAudio, Inc. v. Mazda Motor of America, Inc.*, No. 6:20-cv-01126 (W.D. Tex.);

- *StratosAudio, Inc. v. Subaru of America, Inc.*, No. 6:20-cv-01128 (W.D. Tex.);
- *StratosAudio, Inc. v. Volvo Cars of North America LLC*, No. 6:20-cv-01129 (W.D. Tex.);
- *StratosAudio, Inc. v. Volkswagen Group of America, Inc.*, No. 6:20-cv-01131 (W.D. Tex.).

Pet. 2; Paper 5, 1.

The parties also identify another petition that the '203 Patent is the subject of (IPR2021-00717), filed by a different petitioner (Volkswagen Group of America, Inc.), challenging claims 43, 47, 48, 51, 52, 56, and 62 of the '203 Patent.¹ Pet. 2; Paper 5, 1.

C. The '203 Patent

The '203 Patent relates to a system for broadcast response. Ex. 1001, 1:16–17. The '203 Patent explains that Radio Data System (“RDS”) encoders generate a subcarrier that is transmitted along with an FM station broadcast signal. *Id.* at 1:36–38. The RDS data signal includes data groups that have information, such as a country symbol, regional code, identification information for the transmitting station, and the current program or format being broadcast. *Id.* at 1:43–44, 1:50–61. Other information can identify a song or program, identify alternative frequencies where the same programming can be available, provide in-house station text messages, or Emergency Alert System messages. *Id.* at 1:62–2:5. The '203 Patent explains that users listening to radio or television may desire to respond to programming or store information about the broadcast, but a

¹ Institution was denied in this proceeding on November 12, 2021. *See* IPR2021-00717, Paper 12.

user's options for data storage and responses are limited. *Id.* at 2:16–22. The '203 Patent states that increased data capture and storage at the user's end, in combination with an improved system for transmitting data from the user, can lead to improved responses to polls, surveys, etc. *Id.* at 2:22–25.

Figure 1 of the '203 Patent is reproduced below.

FIG. 1

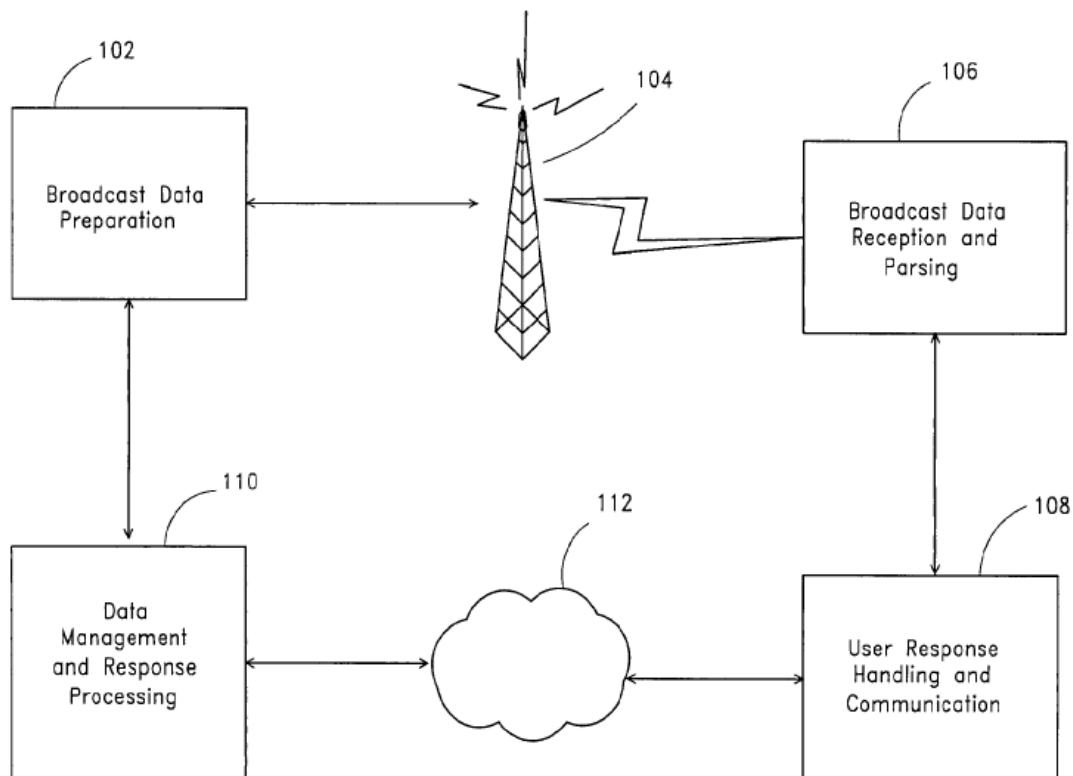


Figure 1, shown above, depicts a high-level overview of a broadcast response system. *Id.* at 3:50–51. As shown in Figure 1, broadcast data preparation module 102 communicates with broadcast system 104. *Id.* at 4:32–34. Data preparation module 102 prepares data for broadcast transmission. *Id.* at 4:34–35. The data may contain information pertaining to the main broadcast signal, such as the title of a song, name of an artist, ad identification, purchase price, purchase location, or a unique identifier. *Id.*

at 4:35–42. Broadcast system 104 in turn transmits the data using a subcarrier signal, such as in conformance with a standard. *Id.* at 4:47–51.

Broadcast reception module 106 receives the transmission from broadcast system 104 and extracts the transmitted data. *Id.* at 4:60–62. The extracted data may be used to display information to a user, such as a song's title or artist's name. *Id.* at 4:62–64. User response module 108 detects a response by the user, such as the user pressing a button in response to the data transmitted by broadcast system 104. *Id.* at 4:65–5:1. As depicted in Figure 1, user response module 108 is in communication with data management module 110, such as via network 112 (e.g., a wide-area network (WAN)). *Id.* at 5:9–12. Data management module 110 is also in communication with broadcast preparation module 102, which allows synchronization of the user's responses from user response module 108 with the data generated from broadcast data preparation module 102. *Id.* at 5:12–18.

According to an exemplary embodiment of the '203 Patent, a radio station using broadcast system 104 generates programming data in conjunction with a broadcast signal and communicates the programming data to broadcast data preparation module 102. *Id.* at 5:33–38. Broadcast data preparation module 102 can include a database that contains entries corresponding to the programming data. *Id.* at 5:38–40. Broadcast data preparation module 102 also functions to provide a unique identifier for the programming data to the radio station and may also provide additional information about the program to the radio station, which broadcasts the unique identifier and any other desired information via a RDS subcarrier. *Id.* at 5:43–48.

The '203 Patent explains that a radio using broadcast data reception module 106 extracts the unique identifier from the RDS subcarrier. *Id.* at 5:48–50. When a user presses a button that indicates a desire to obtain additional information about content corresponding to the broadcast, user response module 108 communicates the unique identifier and a user identifier to data management module 110. *Id.* at 5:50–55. The '203 Patent explains that data management module 110 looks up the unique identifier and user identifier in a database and uses this information to fulfill the order. *Id.* at 5:55–57.

D. Challenged Claims

Petitioner challenges claims 43, 47, 48, 51–53, 61, and 62. Claim 43 is the only independent claim challenged. Claim 43 is reproduced below:

- 43[pre] A device that enables a response to a data packet sent in combination with a unique broadcast event, the device comprising:
- 43[a][1] a receiver module that detects a unique broadcast event and extracts from at least a portion of the data packet content information corollary to the unique broadcast event,
- 43[a][2] wherein the content information is sourced from a database system that has at a minimum two entries wherein at least one element of a first entry matches at least one element of a second entry, and at least one element of the content information matches at least one element of the first entry;
- 43[b] memory for storing at least part of the content information;
- 43[c] a communication module for communicating the at least part of the content information to a user;

- 43[d] an input control that enables the selection of the at least part of the content information and enables the generation of a response; and
- 43[e] a transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet including at a minimum the at least part of the content information, to a response authentication system.

Ex. 1001, 25:11–34 (bracketed labelling designated by Petitioner; *see* Pet. 18–34).

E. Evidence

- (1) U.S. Patent No. 6,628,928 B1, issued September 30, 2003 (“Crosby”) (Ex. 1006);
- (2) U.S. Patent No. 6,925,489 B1, issued August 2, 2005 (“Curtin”) (Ex. 1010);
- (3) U.S. Patent No. 6,505,160 B1, issued January 7, 2003 (“Levy”) (Ex. 1013);
- (4) Declaration of Dr. Kevin C. Almeroth (Ex. 1002).

F. Prior Art and Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
43, 47, 48, 51–53, 61, 62	103(a)	Crosby
43, 47, 48, 51–53, 61, 62	103(a)	Crosby, Curtin
43, 47, 48, 51, 52, 61, 62	103(a)	Levy
43, 47, 48, 51, 52, 61, 62	103(a)	Levy, Curtin

Pet. 4

II. ANALYSIS

A. Discretionary Denial

Patent Owner argues that we should exercise our discretion to deny institution under 35 U.S.C. § 314(a) because “Patent Owner has addressed

fundamental substantive shortcomings in all grounds in the Petition, including Petitioner’s reliance on an expert declaration that should be given no weight.” Prelim. Resp. 23–24 (citing *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016)). Because we determine that there is a reasonable likelihood that Petitioner would prevail in challenging at least one claim of the ’203 Patent as unpatentable under the grounds presented in the Petition, we decline to exercise our discretion to deny institution.

B. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that “[o]ne of ordinary skill in the art would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and at least two years of experience in the communications- or broadcast-related industries, or the equivalent, with additional education substituting for experience and vice versa.” Pet. 10 (citing Ex. 1002 ¶¶ 40–42). Patent Owner does not dispute this level of skill. *See generally* Prelim. Resp.

Based on the record presented, including our review of the ’203 Patent and the types of problems and solutions described in the ’203 Patent and cited prior art, we adopt Petitioner’s assessment of the level of ordinary skill in the art and apply it for purposes of this Decision.² To the extent the

² In IPR2021-00717, we preliminarily adopted the petitioner’s proposed

parties disagree as to the level of ordinary skill in the art, the parties may address the issue in their papers during trial and explain, for example, how a different definition would impact the obviousness analysis of the challenged claims.

C. Claim Construction

We interpret the challenged claims using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2021). “In determining the meaning of [a] disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006).

Claim terms are generally given their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315. “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own

definition of “at least a B.S. in computer science, electrical engineering, or a related field, and three years of experience working in the communications- or Internet-related industries,” where “[m]ore education or skill might make up for less experience, and vice versa.” IPR2021-00717, Paper 12 at 14. The descriptions are very similar.

lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner states that “[a]t this time, Petitioner does not believe that any term requires explicit construction to resolve the issues presented in this Petition.” Pet. 11 (citing Ex. 1002 ¶¶ 32–33). Patent Owner does not suggest any particular claim construction for any particular claim term. *See generally* Prelim. Resp. As the parties do not identify any particular controversy regarding interpretation of the challenged claims, for purposes of this Decision, we do not find it necessary to expressly construe any particular claim term.³

D. Patentability Challenges

As indicated above, Petitioner presents four grounds challenging the patentability of particular claims of the ’203 Patent under 35 U.S.C. § 103(a). Petitioner challenges (1) claims 43, 47, 48, 51–53, 61, and 62 as obvious over Crosby; (2) claims 43, 47, 48, 51–53, 61, and 62 as obvious over Crosby and Curtin; (3) claims 43, 47, 48, 51, 52, 61, and 62 as obvious

³ In IPR2021-00717, we preliminarily disagreed with the petitioner’s assertion that the “sourced from a database system” language in limitation 43[a][2] should be given no patentable weight. IPR2021-00717, Paper 12 at 16–21. Petitioner in this proceeding does not argue that limitation 43[a][2] is not entitled to patentable weight.

over Levy; and (4) claims 43, 47, 48, 51, 52, 61, and 62 as obvious over Levy and Curin. Pet. 4.

1. Principles of Law on Obviousness

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

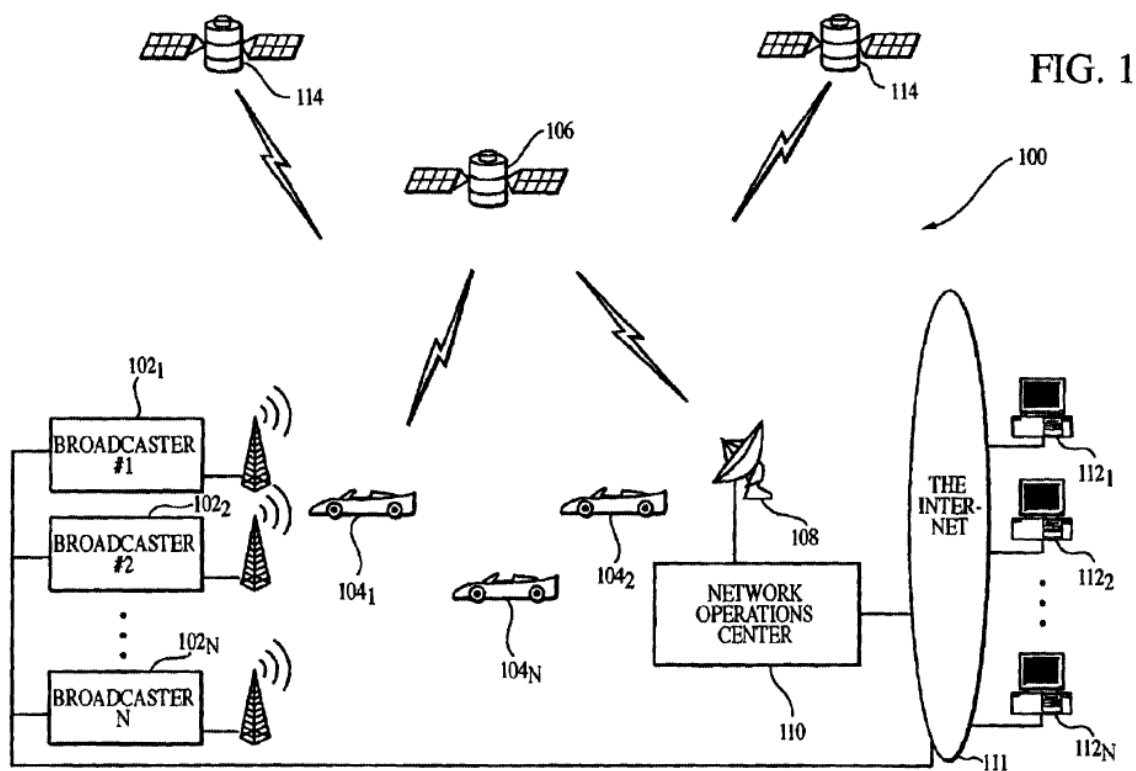
The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

2. Relevant Prior Art

a) Crosby (Ex. 1006)

Crosby is a U.S. Patent that issued September 30, 2003 and was filed December 10, 1999, prior to the earliest priority date of the '203 Patent. Ex. 1001, codes (22), (60), (63); Ex. 1006, codes (22), (45). Petitioner asserts that Crosby is prior art under pre-AIA 35 U.S.C. § 102(e). Pet. 11.

Crosby relates to interactive radio systems for use with broadcast radio. Ex. 1006, 1:9–11. For example, a radio broadcast is received by a user's (or subscriber's) mobile unit and the user interacts with the broadcast by “select[ing] various advertisements, musical selections or the like while listening to the radio.” *Id.* at 3:12–18, 3:59–61. Figure 1 is an illustration showing components of an exemplary interactive radio system and is reproduced below. *Id.* at 5:20–24.



As shown in Figure 1, “signals broadcast by land-based radio broadcasters 102 are received by interactive radio mobile units or mobile stations mounted within vehicles 104, with each mobile unit operated by a subscriber or other user.” *Id.* at 5:66–6:3. “While listening to a radio broadcast, the subscribers transmit commands . . . from the mobile units via a communications satellite 106 to an interactive radio network ground station 108, which forwards the commands to an interactive radio network operations center 110.” *Id.* at 6:4–9. Then “[i]n response to commands received from the subscribers, the network operations center provides information feedback to the subscribers via the Internet 111, with the information being received at individual subscriber computers 112.” *Id.* at 6:9–19.

Components of the user’s mobile unit, for receiving broadcasts, accepting user interaction, and transmitting that interaction, are shown in Figure 2, reproduced below. *Id.* at 5:26–28.

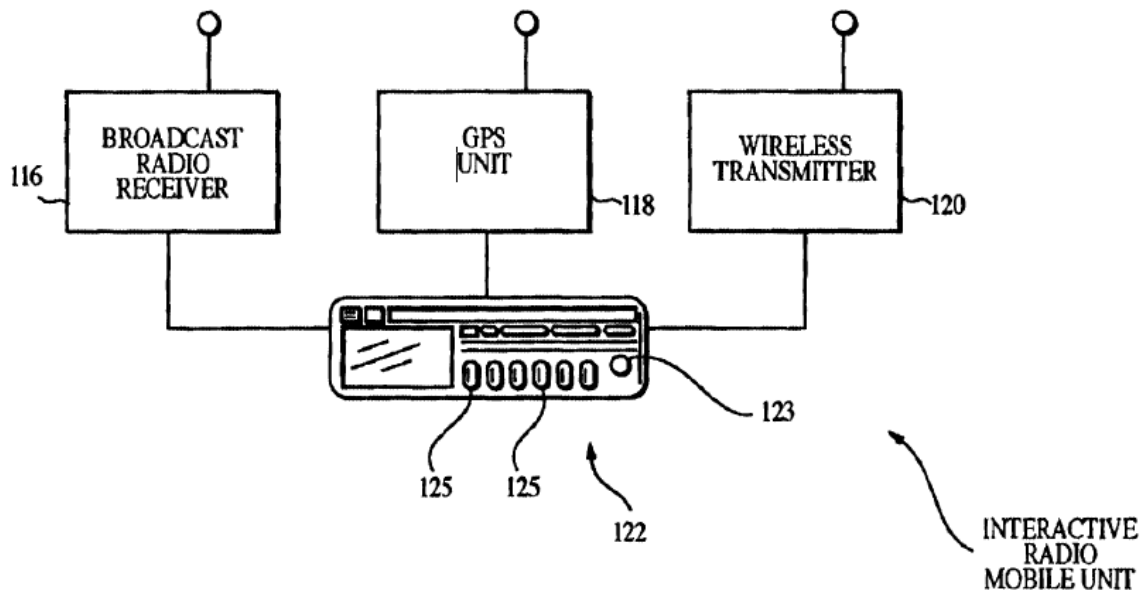


FIG. 2

The mobile unit shown in Figure 2 includes radio receiver 116 for receiving broadcast transmissions. *Id.* at 6:66, 7:6–9. In one embodiment, the mobile unit can receive “conventional” AM or FM radio broadcasts. *Id.* at 11:43–45. The user may then interact with the broadcast through the mobile unit’s interface 122. *Id.* at 6:67–7:6. For example, the user may request additional information on a musical selection, advertisement, or charity; purchase the musical selection or advertised item; or participate in an opinion poll. *Id.* at 7:62–8:47. From the user’s interaction with the received broadcast, the mobile unit “generates various interactive radio signals” to transmit, via wireless transmitter 120, to network operations center 110. *Id.* at 6:67, 7:23–26, 9:42–43.

In the embodiment using conventional radio broadcasts, the generated interactive signal includes “the geographical location of the mobile unit[,] . . . the carrier frequency of the broadcaster, and the date and time the broadcast was received.” *Id.* at 11:37–44; *see id.* at 7:30–37. The network operations center then, using the information transmitted by the mobile unit, “determines the identity of the broadcaster based upon the carrier frequency of the broadcast and the geographical location of the mobile unit.” *Id.* at 7:37–44, 11:37–39. In particular, the network operations center uses a broadcaster identification database to look up the broadcaster. *Id.* at 8:65–9:10, 9:48–53; *see id.* Fig. 4. Then, using the determined broadcaster identity, the “network operations center then determines the specific program segment selected by the subscriber based upon the identity of the broadcaster and the date and time of the broadcast.” *Id.* at 7:41–44.

In particular, the network operations center uses a program segment identification database to look up the selected program segment. *Id.* at 9:56–61; *see id.* Fig. 5; *see also id.* at 7:37–44. The databases used may be

“access databases maintained by the broadcasters containing play-lists or other program information,” (*id.* at 4:58–64) such as “date[s] and time[s] of various program segments” to “identif[y] the particular program segment selected by the subscriber,” and the network operations center “downloads information pertinent to the program segment and provides that information” to the subscriber in a web page or email. *Id.* at 3:44–58, 7:37–50, 9:14–19, 10:20–24, Fig. 5 (depicting database 202 with broadcaster ID, program segment ID, and date and time fields).

Figure 7 of Crosby is reproduced below.

Figure 7 depicts an exemplary web page screen 216. The screen contains two main sections, each with a table of information and interactive buttons.

The top section features a table with the following headers: SONG TITLE AND CD TITLE, PERFORMER, RECORD LABEL, BROADCASTER & DATE AND TIME, PRICE, and LINKS. To the left of this table are two buttons: LISTEN and ORDER. The table has three data rows, with the middle row containing three vertical dots, indicating more rows. Below the table is a single empty row.

The bottom section features a table with the following headers: AD TITLE, VENDOR, PRODUCTS, BROADCASTER & DATE AND TIME, PRICES, and LINKS. To the left of this table are two buttons: MORE INFO and ORDER. The table has three data rows, with the middle row containing three vertical dots, indicating more rows. Below the table is a single empty row.

The entire screen is enclosed in a rounded rectangular border, with the number 216 at the bottom right corner.

FIG. 7

Figure 7 depicts exemplary web page screen 216 where “information pertaining to various songs selected by the subscriber [is] provided including the title of the song, the name of the performer of the song, the radio station broadcasting the song and the date and time of day of the broadcast.” *Id.* at 10:30–35. The web page also provides “a hyperlink to permit the subscriber to immediately download a digital version of a portion of the song for

verifying that the song identified in the list was indeed the song listened to by the subscriber” and “links to e-commerce sites permitting the subscriber to purchase the CD in which the song appears or perhaps to create a customized CD containing the song or a customized digital music file.” *Id.* at 10:36–43.

In another embodiment, the mobile unit receives and interacts with digital radio broadcasts rather than conventional AM/FM radio broadcasts. *Id.* at 11:43–45. In that case, “digital radio signals are preferably encoded with signals identifying the broadcaster and the specific program segment being transmitted,” which can be displayed to the user on the mobile unit’s display. *Id.* at 11:45–48, 11:55–58. As such, as opposed to the broadcaster identifying technique described above for conventional AM/FM radio broadcasts, “the system need not identify the broadcaster based upon the carrier frequency and geographical location.” *Id.* at 11:44–50. “Rather, the network operations center directly accesses the program segment and vendor information databases based upon the program segment identified by the digital radio signals to retrieve information associated with the program segment selected by the subscriber.” *Id.* at 11:50–54.

In still yet another embodiment, the mobile unit receives and interacts with satellite radio broadcasts. *Id.* at 12:27–39. In that case, “a satellite broadcaster will transmit multiple radio channels using a single carrier frequency with digital information encoded therein identifying the different channels.” *Id.* at 12:31–34. As with the AM/FM radio and digital radio embodiments, the satellite radio system determines the identity of the particular broadcaster. *Id.* at 12:34–39. In this case, the system does so “based upon both the carrier frequency and the digital information identifying the broadcast channel.” *Id.* at 12:36–39. In one manner of doing

so, “the mobile unit may be configured to extract the digital information from the received signal along with the carrier frequency for forwarding to the network operation center.” *Id.* at 12:40–43. In another manner, “the mobile unit generates a broadcast attribute signal which includes a portion of the received satellite broadcast signal such that the network operation center can extract the channel identification information and determine the identity of the particular channel.” *Id.* at 12:43–48.

Whether the broadcast is conventional, digital, or satellite, after the network operations center identifies the program segment the user interacts with, the network operations center responds to the particular interaction. *See id.* at 10:7–29. For example, if the interaction requests information about the program segment, such information can be emailed to the user. *Id.* at 10:20–24.

b) Curtin (Ex. 1010)

Curtin is a U.S. Patent that issued August 2, 2005 and was filed November 22, 1999, prior to the earliest priority date of the ’203 Patent. Ex. 1001, code (22), (60), (63); Ex. 1010, code (22), (45). Petitioner asserts that Curtin is prior art under pre-AIA 35 U.S.C. § 102(e). Pet. 13.

Curtin relates to a system which “allows a user to provide a simple input, e.g., a push of a single button, to indicate that a particular broadcasted piece of music is of interest.” Ex. 1010, 4:43–45. For example, a user can “identify and purchase music or [can note] other information associated with a particular broadcast.” *Id.* at 1:10–12, 2:28–33.

In one embodiment, a digital audio broadcasting (DAB) signal is broadcast as “a hybrid in-band on-channel (HIBOC) FM signal having [a conventional] analog FM host and one or more digital sidebands.” *Id.* at 3:28–36. “The digital audio information [transmitted in the digital sidebands

of the DAB signal] may correspond to, e.g., a particular song or other piece of music broadcast by the system.” *Id.* at 3:48–50.

Figure 1 of Curtin is reproduced below.⁴

FIG. 1

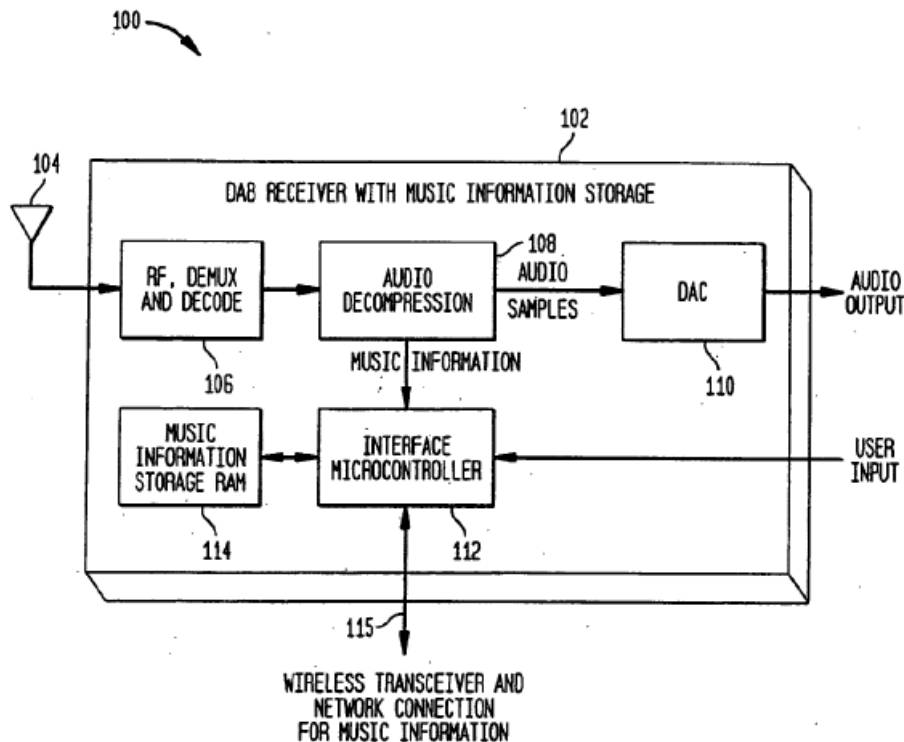


Figure 1 depicts DAB receiver 102 (e.g., in an automobile) comprising receiving antenna 104, radio frequency (RF) demultiplex and decode element 106, audio decompression element 108, digital-to-analog converter (DAC) 110, random access memory (RAM) 114, interface microcontroller 112, and network connection 115. *Id.* at 3:25–4:42.

The DAB signal is received by a user’s receiver. *Id.* at 3:24–28. A digital audio bitstream is generated from the received DAB signal and the receiver generates an audio output from the received DAB signal broadcast.

⁴ Figures 1–4 of Curtin were corrected in a Certificate of Correction dated September 27, 2005. Ex. 1010.

Id. at 3:51–63. Additionally, the user’s receiver “also extracts from the encoded digital bitstream music information that uniquely identifies a particular piece of music or other audio information by artist, title, album, label, source, date, time, etc.” *Id.* at 3:64–4:1. That is, “identification information is extracted from a current broadcast of a piece of music or other type of information of interest to a user” and that “identification information includes sufficient information to identify at least one deliverable information item associated with the current broadcast.” *Id.* at 2:34–42.

Figure 2 of Curtin is reproduced below.

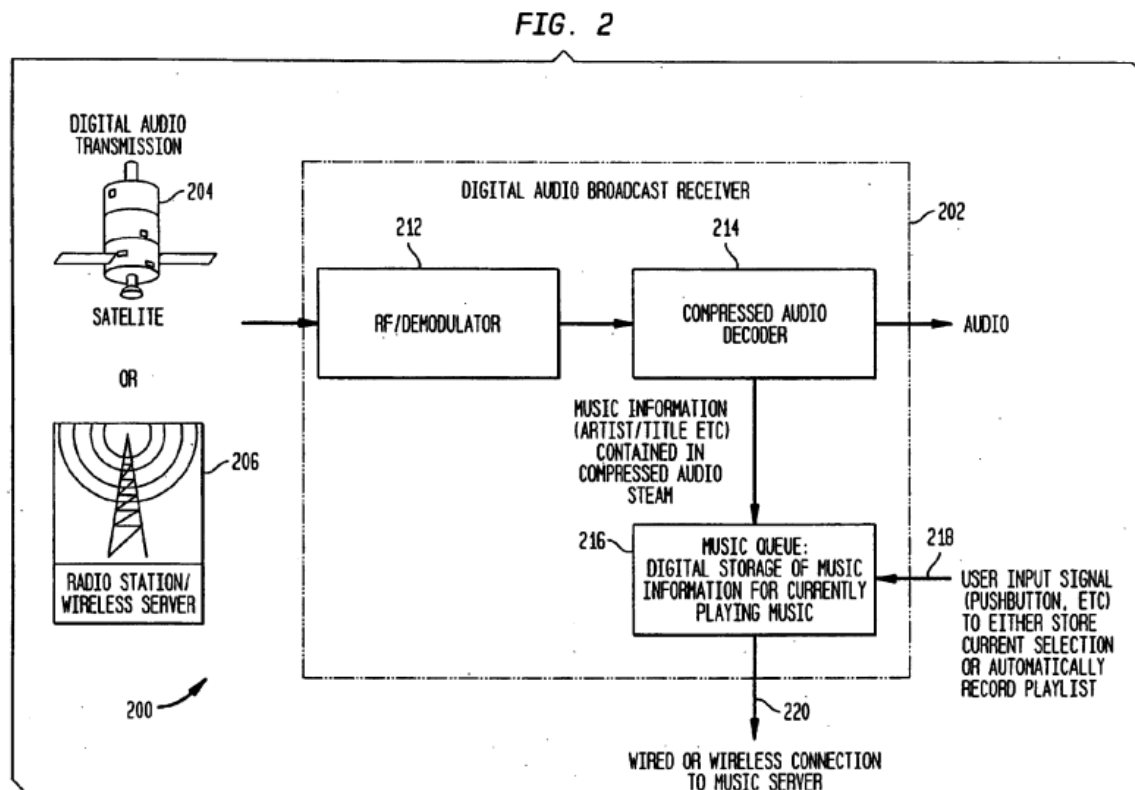


Figure 2 depicts an alternate embodiment of DAB receiver 202, which receives a DAB signal from satellite-based transmitter 204 or terrestrial transmitter 206 (e.g., a radio station). *Id.* at 5:13–20. The DAB signal may be “a hybrid in-band on-channel (HIBOC) FM signal having an analog FM host and one or more digital sidebands” for transmitting “digital audio

information.” *Id.* at 3:31–36. “The digital audio information may correspond to, e.g., a particular song or other piece of music broadcast by the system.” *Id.* at 3:48–50.

RF/demodulator block 212 “processes [the] received DAB signal and delivers a compressed digital audio bit stream” to decoder 214, which “extracts music information, e.g., artist, title, etc., from the compressed digital audio bit stream” and plays the received audio. *Id.* at 5:29–32, 5:36–40. The extracted music information “uniquely identifies a particular piece of music or other audio information by artist, title, album, label, source, date, time, etc.” and “may be incorporated in the encoded audio bitstream using conventional techniques.” *Id.* at 2:35–46, 3:64–4:2. “[W]hen a user hears a particular song or other piece of music of interest, . . . the user can push a button or otherwise enter a command or other instruction to direct [the DAB receiver] to store extracted music information for the current audio output in” RAM or a removable memory device, such as a Personal Computer Memory Card International Association (PCMCIA) card. *Id.* at 4:5–14, 4:54–61. Alternatively, the input signal may put the receiver in a “mode in which music information for all possible broadcast music selections is automatically extracted and stored as long as the system remains in that mode.” *Id.* at 5:40–46.

“At a later point in time” when the user is able to establish a wired or wireless network connection, “the extracted music information is transmitted over [a] network connection [] to a music server which is capable of delivering the corresponding music.” *Id.* at 4:20–26, 5:3–5, 5:46–51. For example, the removable memory device storing the extracted music information may be inserted into a personal computer (PC) having such a connection. *Id.* at 4:61–5:2. The music server then “uses the extracted

music information to determine what the user might like to purchase, and presents this information, as well as appropriate ordering instructions, to the user via the network connection.” *Id.* at 6:13–16. “[T]he user places an order for the corresponding music track, album, CD, etc. with the music server,” “[t]he music server then processes the order,” and “the user . . . receives the ordered product, e.g., receives a CD or MP3 file via download for later playback.” *Id.* at 6:16–21. Thus, Curtin’s system purportedly “eliminates the need for the user to write down or otherwise remember easily-forgotten information such as the radio station or time of the broadcast” when the user hears a song of interest. *Id.* at 4:48–53.

When the “user hears a particular song or other piece of music of interest being output by a speaker associated with the receiver 102, the user can push a button or otherwise enter a command or other instruction to direct the interface microcontroller 112 to store extracted music information for the current audio output in the RAM 114.” *Id.* at 4:8–14; 5:3, 5:40–43. The stored extracted music information is later transmitted by the receiver to a server for further processing, e.g., to a server that responds with “detailed information about the corresponding music selections and instructions to the user regarding how to make [a] purchase.” *Id.* at 4:19–25, 5:3–8.

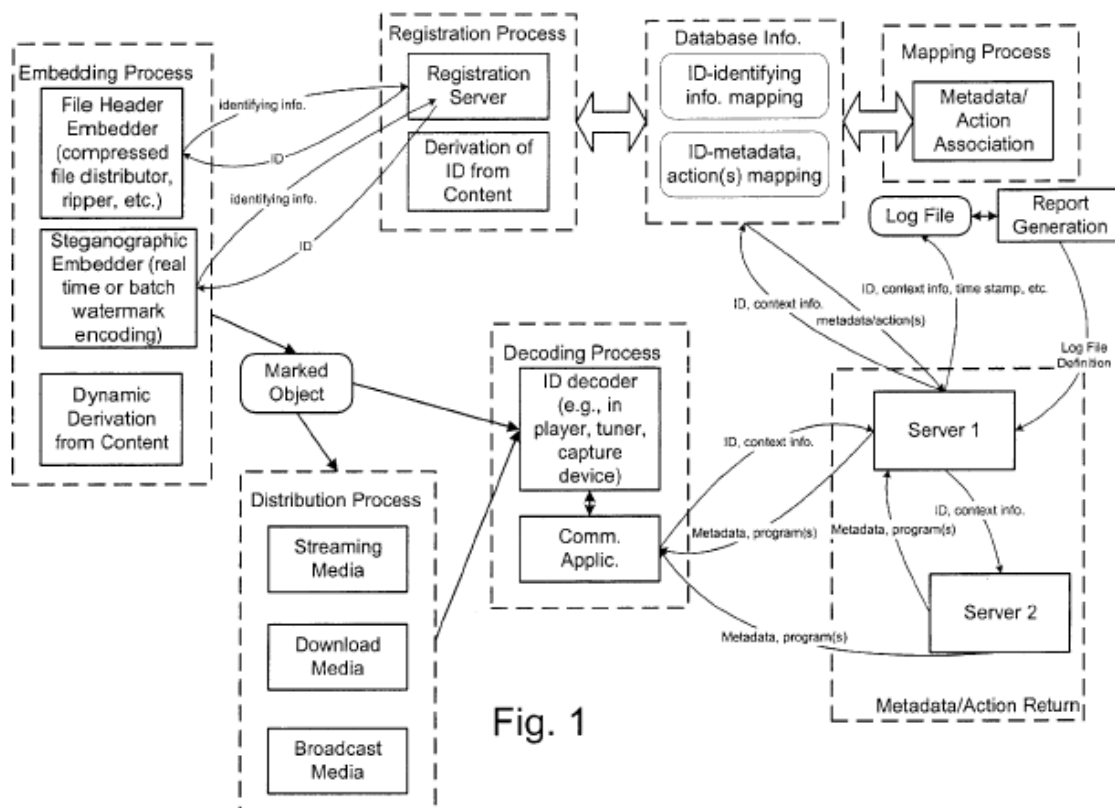
c) Levy (Ex. 1013)

Levy is a U.S. Patent that issued January 7, 2003 and was filed May 2, 2000, prior to the earliest priority date of the ’203 Patent. Ex. 1001, code (22), (60), (63); Ex. 1006, code (22), (45). Petitioner asserts that Levy is prior art under pre-AIA 35 U.S.C. § 102(e). Pet. 14.

Levy relates to linking media objects, such as audio objects, to metadata and actions by using an “identifier” so that, e.g., “a fan of a particular type of music or artist to get more information about the music

and to buy more music.” Ex. 1013, 2:5–7, 2:56–59. For example, where the audio object is a song, the song is linked, via the identifier, to metadata such as “the title, artist, lyrics, copyright owner, sound recording owner, information about buying or sampling opportunities and URLs to this type of data as well as web sites and other programs and devices.” *Id.* at 2:49–53. The song may also be linked to actions, via the identifier, that may include “programmatic processes for electronically establishing a license, transferring content (either streaming or download), sending an email, recording marketing data about a transaction, etc.” *Id.* at 2:53–56, 4:50–52.

Figure 1 of Levy is shown below.



Levy’s Figure 1, above, is a diagram illustrating examples of media object linking processes and systems. Levy explains that, in this configuration, “an identifier links audio objects to metadata via an electronic network, such as the Internet, a wireless network, or a broadcast network.”

Id. at 3:50–53. As depicted in Figure 1, “an embedding process may be used to encode an identifier in an audio object or its container.” *Id.* at 3:53–55. “In some cases, an embedding process encodes the identifier in the audio file (e.g., a tag in a file header or footer), in the audio signal (a digital watermark), or in the physical packaging.” *Id.* at 3:54–61.

An identifier “may identify the media object in which it is embedded, or entities, things or actions other than that particular media object.” *Id.* at 3:24–26. For example, an identifier may be “an object ID that identifies an audio object,” a “distributor ID that identifies the distributor of the audio object,” “a broadcaster ID that identifies the broadcaster of the audio object,” etc. *Id.* at 3:26–45, 10:38–42. Further, an object ID may “include[] fields that identify the object and its distributor.” *Id.* at 7:47–48. A registration process associates the identifier with the audio object and stores a database record of that association. *Id.* at 4:2–4. Once registered, the identifier is associated with corresponding metadata and actions. *Id.* at 4:14–19. The association, through the identifier, between the audio object and metadata/actions creates a “linked object.” *Id.* at 4:20–21. The linked object is then distributed to a user by, e.g., a broadcast or stream. *Id.* at 4:22, 4:26–33.

When a user receives the linked object, the identifier is extracted in order to provide the user with additional information about or to provide actions for the object. *Id.* at 4:33–34; 9:36–39. In one example, the additional information about or actions for the object are triggered by some user input. In particular, while the user is playing a song embedded with an identifier, the user may request to buy the song or get more information about the song. *Id.* at 12:42–46, 12:51–52. The user makes such a request with a “fetch” input button or command. *Id.* at 12:59–62. Then, the

extracted identifier and context information about the current song (e.g., attributes about the user, the user's playback device, or the user's playback session) are forwarded to a server for corresponding processing. *Id.* at 12:62–65, 13:10–12; *see id.* at 4:45–48, 4:65–67.

E. Obviousness over Crosby and Curtin

Petitioner asserts claims 43, 47, 48, 51–53, 61, and 62 would have been obvious over Crosby or over the combined teachings of Crosby and Curtin under 35 U.S.C. § 103(a). Pet. 17–41.

1. Independent Claim 43

a) 43[pre] A device that enables a response to a data packet sent in combination with a unique broadcast event, the device comprising:

For the preamble, Petitioner relies on Crosby's "mobile unit," that includes "a broadcast receiver for receiving broadcast transmissions" and "a wireless transmitter for transmitting wireless signals to the system." Pet. 19 (citing Ex. 1006, 2:65–3:2). Petitioner argues that Crosby's "system also includes means, responsive to receipt of the broadcast attribute signal, for providing information to the user associated with the mobile unit via the Internet." Pet. 19 (citing Ex. 1006, 3:6–8). Petitioner argues that "Crosby discloses that an advantage of its system is this 'interactive capability.'" Pet. 19 (citing Ex. 1006, 8:48–53).

Patent Owner does not respond specifically to Petitioner's arguments or evidence with respect to Crosby's teaching of what is recited by the preamble of claim 43. *See generally* Prelim. Resp.

Based on the record before us, we are persuaded that Petitioner has shown sufficiently for purposes of institution that Crosby's mobile unit system amounts to a *device that enables a response to a data packet sent in*

combination with a unique broadcast event, as recited in the preamble of independent claim 43.⁵

- b) 43[a][1] *a receiver module that detects a unique broadcast event and extracts from at least a portion of the data packet content information corollary to the unique broadcast event*,

For this limitation, Petitioner points to “Crosby’s ‘interactive radio system employing land-based broadcast radio stations’ that can provide ‘interactive feedback to subscribers via the Internet.’” Pet. 20 (citing Ex. 1006, Fig. 1). Petitioner argues that in Crosby, “the digital radio signals are preferably encoded with signals *identifying the broadcaster* and the *specific program segment* being transmitted.” Pet. 21 (citing Ex. 1006, 11:44–48 (emphasis added by Petitioner)). Petitioner argues that a person of ordinary skill in the art “would have understood Crosby’s instance of a ‘specific program segment’ and ‘signals identifying the broadcaster’ as a unique broadcast event as claimed.” Pet. 21 (citing Ex. 1002 ¶ 78).

Petitioner also argues that Crosby “discloses that its system uses ‘encoded signals providing program segment identification information or the like.’” Pet. 21 (citing Ex. 1006, 8:53–55). Petitioner points out that in Crosby, “[t]he program segment information provided within the broadcast radio signal may be displayed using the graphic display to the subscriber.” Pet. 21 (citing Ex. 1006 11:56–57). “Crosby further explains,” Petitioner argues, “that it ‘determines the identity of the particular broadcaster based upon both the carrier frequency and the digital information identifying the broadcast channel.’” Pet. 21 (citing Ex. 1006, 12:37–39). Petitioner points

⁵ The issue of whether the preamble is limiting need not be resolved at this stage of the proceeding because Petitioner shows sufficiently for purposes of institution that the recitation in the preamble is satisfied by the prior art.

out that Crosby’s “mobile unit will ‘extract the digital information from the received signal along with the carrier frequency for forwarding to the network operation center.’” Pet. 21 (citing Ex. 1006, 12:41–43). Petitioner argues a person of ordinary skill in the art “would have recognized that the extracted information identifying [an] individual program segment is ‘content information corollary to the unique broadcast event.’” Pet. 21 (citing Ex. 1002 ¶ 79).

Petitioner further argues that “[t]o the extent that Crosby alone does not disclose or teach this element, it would have been obvious to a [person of ordinary skill in the art] to include in Crosby’s system still further content information corollary to the unique broadcast event.” Pet. 22 (citing Ex. 1002 ¶ 80). “This would have included,” Petitioner argues, “transmitting [the] ‘date and time associated with the current broadcast’ as taught by Curtin.” Pet. 22 (citing Ex. 1010, 2:45).

Petitioner argues that a person of ordinary skill in the art “would have been motivated to include Curtin’s additional information corollary to the broadcast, such as date and time information, to further uniquely identify the particular broadcast instance of any given song and allow for additional functionality and benefits.” Pet. 22–23. Petitioner also argues that a person of ordinary skill in the art “would have understood that including additional unique broadcast information, such as date and time and other information taught by Curtin, would have better allowed particular content distributors and broadcasters to be compensated for the precise broadcast instance of any given program material purchased using the Crosby system.” Pet. 23 (citing Ex. 1002 ¶ 82).

“Additionally,” Petitioner argues, a person of ordinary skill in the art “would have had a reasonable expectation of success in implementing these

features from Curtin into Crosby’s system.” Pet. 23 (citing Ex. 1002 ¶ 83). A person of ordinary skill in the art, Petitioner argues, “would have seen no impediment to also receiving and processing additional information as disclosed by Curtin.” *Id.* Petitioner argues that “Curtin itself explains how to receive and process such data. And the techniques used are well-known and predictable operations that were easy and predictable to implement using routine hardware and software.” *Id.*

Patent Owner argues that Petitioner “fails to demonstrate how [Crosby’s] ‘broadcast radio receiver’ *extracts from at least a portion of the data packet content information corollary to the unique broadcast event.*” Prelim. Resp. 4. Patent Owner also argues that Petitioner “nowhere explains how [Crosby’s] broadcaster identification or program segment information is corollary to a *unique broadcast event.*” *Id.*

The test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Accordingly, one “cannot show non-obviousness by attacking references individually where . . . the rejections are based on combinations of references.” *Boundary Solns. Inc. v. Corelogic, Inc.*, 711 F. App’x 627, 631–632 (Fed. Cir. 2017) (quoting *In re Keller*, 642 F.2d at 425).

Here, Petitioner argues that the combined teachings of Crosby and Curtin teach the recited limitation, relying specifically on alleged content information in Curtin (i.e., date and time of a particular broadcast). Pet. 22–23. Patent Owner, however, does not address Petitioner’s proposed combination of Crosby and Curtin, but instead, only criticizes the teachings of Crosby. *See* Prelim. Resp. 4–6, 13.

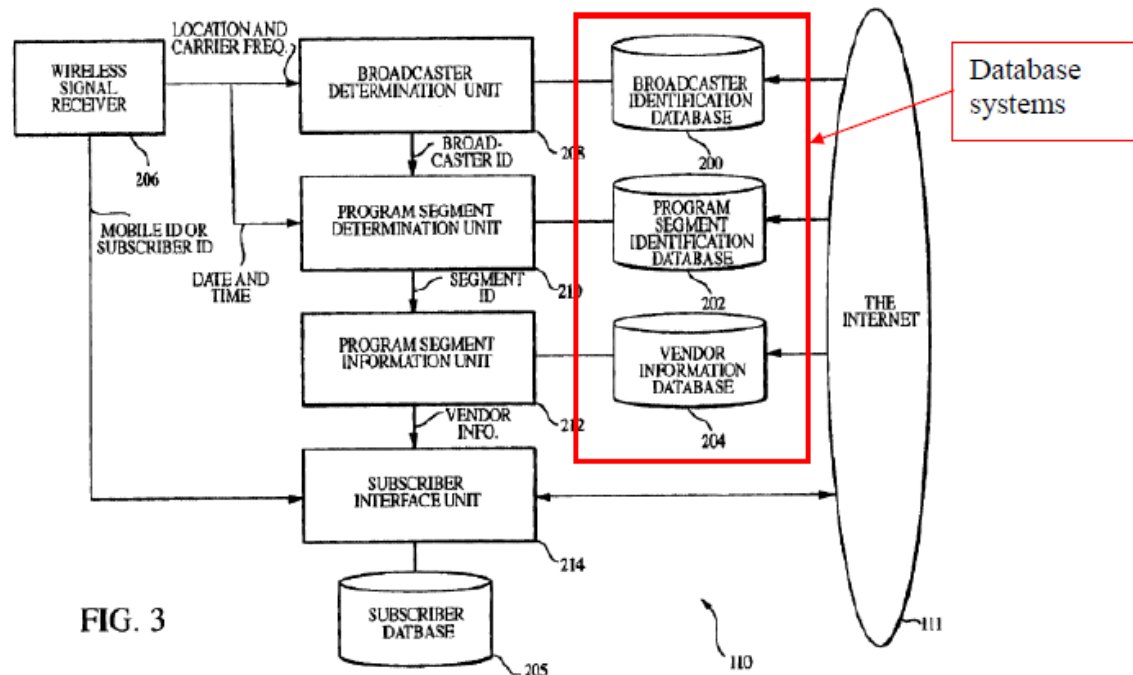
Petitioner indicates that Crosby teaches “an interactive broadcast system . . . for use with a mobile unit having a broadcast receiver for receiving broadcast transmissions from broadcasters or other broadcast program originators.” Ex. 1006, 2:64–67; *see* Pet. 18–21. Crosby explains that “[t]he broadcast receiver is a radio, such as an AM/FM automobile radio or a mobile satellite radio.” *Id.* at 3:13–14. Crosby also explains that “the digital radio signals are preferably encoded with signals identifying the broadcaster and the specific program segment being transmitted.” Ex. 1006, 11:44–48. Petitioner argues that it would have been beneficial to include Curtin’s transmission of the date and time associated with the current broadcast as part of the coding used to identify the broadcaster and the program signal. Pet. 22–23. Crosby further explains that “the mobile unit may be configured to extract the digital information from the received signal along with the carrier frequency for forwarding to the network operation center.” Ex. 1006, 12:40–43. Dr. Ameroth’s testimony supports this understanding. *See* Ex. 1002 ¶¶ 77–83.

Based on this preliminary record, Petitioner has demonstrated sufficiently that the combination of Crosby and Curtin teaches the recited “*receiver module that detects a unique broadcast event and extracts from at least a portion of the data packet content information corollary to the unique broadcast event*” of limitation 43[a][1]. Petitioner has also shown sufficiently that a person of ordinary skill in the art would have been motivated to combine Crosby and Curtin in the proposed manner.

- c) 43[a][2] wherein the content information is sourced from a database system that has at a minimum two entries wherein at least one element of a first entry matches at least one element

of a second entry, and at least one element of the content information matches at least one element of the first entry

For this limitation, Petitioner argues that Crosby teaches “a ‘network operations center’ [that] includes a database system of content information.” Pet. 24. “These include,” Petitioner argues, “the databases of Fig. 4, which ‘illustrates a broadcaster identification database,’ Fig. 5, which ‘illustrates a broadcast program segment identification database,’ and Fig. 6, which ‘illustrates a vendor information database.’” *Id.* (citing Ex. 1006, 5:31–39). Petitioner points out that in Crosby, “[t]he information stored within the broadcaster identification database [Fig. 4] and within the program segment identification database [Fig. 5] are received via the Internet from the broadcasters.” Pet. 24 (quoting Ex. 1006, 9:26–29). “Further,” Petitioner argues, “[t]he information provided within the vendor identification database [Fig. 6] may be provided either by the broadcasters or by individual vendors.” Pet. 24 (quoting Ex. 1006, 9:29–31). Petitioner points out that “[e]ach of these databases are housed in the ‘network operation center’ of Fig[ure] 3.” Pet. 24. Crosby’s Figure 3, annotated by Petitioner, is shown below.



Crosby’s Figure 3, annotated by Petitioner shown above, is a block diagram illustrating pertinent components of a network operations center of Crosby’s system, including broadcast identification database 200, program segments identification database 202, and vendor information database 204.

Petitioner argues that Crosby’s “program segment identification database may be the same database[] from which the content information is sourced.” Pet. 26. “Specifically,” Petitioner argues, “[i]nsofar as providing program information is concerned, the system may either receive information from various broadcasters for storage in dedicated databases maintained by the system *or the system may merely access databases maintained by the broadcasters containing play-lists or other program information.*” *Id.* at 26–27 (quoting Ex. 1006, 4:58–64 (emphasis added by Petitioner)). “From these disclosures,” Petitioner argues, a person of ordinary skill in the art “would have understood that Crosby’s program segment database for each broadcaster may be hosted by the broadcaster

itself and accessed by the network operations center or hosted at the network operations center and kept synchronized with the broadcaster's own program segment database over the internet connection.” Pet. 27 (citing Ex. 1006, Fig. 1; Ex. 1002 ¶ 85). A person of ordinary skill in the art, Petitioner argues, “would have also recognized that each broadcaster would maintain such a database locally and use it to access the content information for broadcast.” Pet. 27.

Petitioner also argues that Crosby's Figures 4 and 5, annotated by Petitioner shown below, show that “there are several entries wherein at least one element of a first entry matches at least one element of a second entry.” Pet. 27.

BROADCASTER ID	CARRIER FREQ.	LOCATION	RANGE
BROADCAST #1			
BROADCAST #2			
	.		
BROADCASTER N			

200

BROADCASTER IDENTIFICATION DATABASE

FIG. 4

BROADCASTER ID	PROG. SEG. ID	DATE AND TIME
	SEGMENT #1	
	SEGMENT #2	
	.	
	SEGMENT N	

202

PROGRAM SEGMENT IDENTIFICATION DATABASE

FIG. 5

Crosby's Figures 4 and 5, annotated by Petitioner shown above, illustrate a broadcaster identification database and a broadcast program segment identification database, respectively. Petitioner points out that "in both Fig[ures] 4 and 5 there are 'Broadcaster ID' entries 'Broadcast #1' through 'Broadcast N' (annotated in blue). In Fig[ure] 5 there are 'Prog. Seg. ID' elements 'Segment #1' through 'Segment N' (annotated in green) corresponding to 'Broadcaster ID' elements." Pet. 27 (citing Ex. 1002 ¶ 86). Petitioner notes that "at least one element of the at least two entries match in Crosby's Fig[ure] 5." *Id.* Petitioner also indicates that "the 'program segment identification database' includes entries for 'Broadcast ID,' 'Prog. Seg. ID,' and 'Date and Time.'" *Id.*

Petitioner argues that a person of ordinary skill in the art "would have recognized that a single broadcaster (e.g., Broadcaster #1") broadcasts many program segments (e.g., one song after another)." Pet. 27–28 (citing Ex. 1006, 4:58–66 (broadcaster database contains "play-lists"); Ex. 1002 ¶ 87). "Accordingly," Petitioner argues, a person of ordinary skill in the art "would have understood that if, for example, Segment 1 and Segment 2 were broadcast by the same Broadcaster . . . then the 'Broadcaster ID' element would match between the first and second entry." *Id.* at 28. "Moreover," Petitioner argues, "at least one element of the content information matches at least one element of the first entry." *Id.* "For example," Petitioner argues, "each 'Prog. Seg. ID' element matches content information. The 'Date and Time' of the broadcast is also content information." *Id.*

Patent Owner argues that "Petitioner fails to show how Crosby teaches or suggests that *the content information* in the *data packet* received by the *receiver is sourced from a database system*." Prelim. Resp. 6. Patent Owner also argues that "Petitioner has merely shown that the program

segment identification database (as part of the network operations center) may receive information from broadcasters. But Petitioner has not demonstrated that the *content information* received with the unique broadcast event *is sourced from a database system.*” *Id.* at 7.

Here, Petitioner points out that Crosby’s system uses “encoded signals providing program segment identification information or the like.” Pet. 21 (quoting Ex. 1006, 8:53–55). Petitioner also points out that Crosby teaches that “the digital radio signals are preferably encoded with signals *identifying the broadcaster and the specific program segment* being transmitted.” Pet. 21 (quoting Ex. 1006, 11:44–48). Petitioner points to Crosby’s Figure 3, which illustrates components of Crosby’s network operations center, including broadcast identification database 200, also shown in Figure 4, and program segments identification database 202, also shown in Figure 5. Pet. 24–26. Petitioner argues that Crosby’s “program segment identification database may be the same database[] from which the content information is sourced.” *Id.* at 26.

Based on the current record, Petitioner has shown sufficiently that the information which Crosby uses to “encode[] signals providing program segment identification information or the like,” which “*identify[] the broadcaster and the specific program segment* being transmitted,” is stored in and sourced from Crosby’s network operations center, including Crosby’s broadcast identification database 200, which stores the broadcaster ID and the carrier frequency, and Crosby’s program segments identification database 202, which stores the broadcaster ID, the program segment ID, the date, and the time. *See* Pet. 21 (citing Ex. 1006, 8:53–55, 11:44–48). Petitioner has also shown sufficiently on this record that Crosby’s “mobile unit may be configured to extract the digital information from the received

signal along with the carrier frequency for forwarding to the network operation center.” Pet. 21, 24–26 (citing Ex. 1006, 12: 41–43, Figs. 3–5).

Based on this preliminary record, Petitioner has demonstrated sufficiently that Crosby teaches the recited “*wherein the content information is sourced from a database system that has at a minimum two entries wherein at least one element of a first entry matches at least one element of a second entry, and at least one element of the content information matches at least one element of the first entry*” of limitation 43[a][2].

d) 43[b] memory for storing at least part of the content information;

For this limitation, Petitioner argues that Crosby teaches an “interactive radio mobile unit” that has “memory for storing a user identifier value.” Pet. 29 (citing Ex. 1006, 18:29 (claim 34)). Petitioner argues that a person of ordinary skill in the art “would have implemented the memory of Claim 34 [of Crosby] such that additional content information would be stored.” Pet. 29. Petitioner also argues that a person of ordinary skill in the art

would have stored, for example the Broadcaster ID or Program Segment ID, on the device so that the user could identify and purchase desired programming. It would have required little more than adding additional entries to the stored information to ensure proper linkage of user ID to identified program material to be purchased upon connecting with the network operations center.

Id. (citing Ex. 1002 ¶ 89).

Petitioner argues that a person of ordinary skill in the art “would have been motivated to do so, because this is the purpose of the Crosby system.” Pet. 29 (citing Ex. 1006, Abstract (“a vast amount of information may be provided to the subscriber facilitating the purchase of goods or services or the like.”)).

Petitioner also argues that “[t]o the extent that Crosby alone does not disclose or teach this element, it would have been obvious to [a person of ordinary skill in the art] to modify Crosby’s device to include storing the other extracted content information, based on Curtin’s teaching of using memory to store extracted ‘identification information’ of interest for retrieval at a later time.” Pet. 29 (citing Ex. 1010, 5:40–47; Ex. 1002 ¶ 90). Petitioner points out that “Curtin teaches storing the data in memory so that the user does not have to ‘write down or otherwise remember easily-forgotten information such as the radio station or time of the broadcast,” and that the “extracted music information [is] stored in the RAM 114 or in a memory card or other storage device.” Pet. 29–30 (citing Ex. 1010, 4:51–53, 5:3–4). Petitioner also argues that a person of ordinary skill in the art “would have been motivated to implement the memory storage of Curtin in the event a mobile connection was unavailable or to incurring mobile data charges,” and that “Curtin is an example of well-known use of storage memory.” Pet. 30 (citing Ex. 1002 ¶ 91).

Patent Owner argues that “Crosby lacks any mention of memory in the specification.” Prelim. Resp. 8. Patent Owner also argues that “Petitioner has not shown how memory that stores ‘user identifier information’ teaches or suggests the claim limitation requiring memory for storing at least part of the content information.” *Id.* Patent Owner does not address Petitioner’s proposed combination of Crosby and Curtin. *See* Prelim. Resp. 8–9, 13.

Here, Petitioner argues that a person of ordinary skill in the art “would have implemented the memory of Claim 34 [of Crosby] such that additional content information would be stored.” Pet. 29. Petitioner argues that a person of ordinary skill in the art “would have stored, for example the

Broadcaster ID or Program Segment ID, on the device so that the user could identify and purchase desired programming.” *Id.* Petitioner also argues it would have been obvious to a person of ordinary skill in the art to modify Crosby’s device based on Curtin’s teaching of using memory to store extracted identification information of interest. Pet. 29 (citing Ex. 1010, 5:40–47; Ex. 1002 ¶ 90). Specifically, pushing a button on Curtin’s receiver causes “the storage of the music information for a current selection” in memory (e.g., RAM), such that the user does not have to “write down or otherwise remember easily-forgotten information such as the radio station or time of the broadcast.” Ex. 1010, 4:48–53, 5:3–5, 5:40–47.

Based on this preliminary record, Petitioner has demonstrated sufficiently that the combination of Crosby and Curtin teaches the recited “*memory for storing at least part of the content information*” of limitation 43[b]. Petitioner has also shown sufficiently that a person of ordinary skill in the art would have been motivated to combine Crosby and Curtin in the proposed manner.

e) 43[c] a communication module for communicating the at least part of the content information to a user;

For this limitation, Petitioner directs us to Crosby’s “mobile unit,” which may be provided with a display. Pet. 30 (quoting Ex. 1006, 4:42–45 (“a graphic display is provided in some mobile units”)). Petitioner points to Crosby’s explanation that, “if the mobile unit is provided with a graphic display, the program segment information *provided within the broadcast radio signal may be displayed* using the graphic display to the subscriber.” Pet. 31 (quoting Ex. 1006, 11:55–57 (emphasis added by Petitioner)).

Patent Owner does not respond to Petitioner's arguments or evidence with respect to Crosby's teaching of what is recited by this limitation. *See generally* Prelim. Resp.

Based on this preliminary record, Petitioner has demonstrated sufficiently that Crosby teaches the recited “*communication module for communicating the at least part of the content information to a user*” of limitation 43[c].

f) 43[d] an input control that enables the selection of the at least part of the content information and enables the generation of a response

For this limitation, Petitioner argues that in Crosby, “when the user ‘wishes to obtain additional information pertaining to the program segment,’ Crosby provides an ‘interactive radio button causing the system to ultimately provide the additional information via the Internet to the subscriber for subsequent browsing.’” Pet. 31–32 (quoting Ex. 1006, 11:58–63).

Petitioner argues that “Crosby’s mobile unit also has ‘multiple buttons or other input mechanisms for receiving various commands from the subscriber’ that ‘transmits to the network operation center a subscriber command signal.’” Pet. 32 (quoting Ex. 1006, 2:60–64). Crosby’s system, Petitioner points out, “includes a broadcast attribute signal, wherein ‘[t]he broadcast attribute signal identifies at least one attribute of a broadcast transmission selected by a user of the mobile unit.’” Pet. 32 (quoting Ex. 1006, 3:4–6). “This will generate,” Petitioner argues, “a response transmitted to the network operation center, which will then forward additional information to the user over the Internet. ‘The information provided via the Internet is selected based upon the content of the broadcast transmission selected by 10 the user.’” Pet. 32 (quoting Ex. 1006, 3:9–11).

Patent Owner argues that “[n]one of these features in Crosby *enables the selection of the at least part of the content information.*” Prelim. Resp. 9 (emphasis by Patent Owner). With respect to Crosby’s “broadcast attribute signal,” Patent Owner argues, “Petitioner does not explain and Crosby does not suggest an input for selecting any aspect of the broadcast attribute signal. Additionally, Petitioner nowhere explains how the broadcast attribute signal corresponds, if at all, to the *content information* specified in the challenged claim.” *Id.* at 10.

Based on the current record, Patent Owner’s arguments are unavailing. As Petitioner notes, Crosby’s mobile unit “may be provided with multiple buttons or other input mechanisms for receiving various commands from the subscriber.” Ex. 1006, 12:60–63. Crosby also explains that the “broadcast attribute signal” transmitted by the wireless communication device “identifies the date and time of a program segment *selected by the subscriber,*” and that the “broadcast attribute signal identifies at least one attribute of a broadcast transmission *selected by a user of the mobile unit.*” Ex. 1006, 3:4–6, 3:30–33 (emphases added). This explanation suggests, at a minimum, that the subscriber or user *selects* the program segment or broadcast transmission through use of the “one or more input buttons or other input devices” of Crosby’s mobile unit. Ex. 1006, 6:65–7:4. Moreover, as discussed in Section II.E.1.b, above, Petitioner includes Curtin’s broadcast date and time information as part of the content information, and Crosby’s explanation that such information is included in the broadcast attribute signal suggests the selection of such content information by the user or subscriber through the use of Crosby’s input buttons or other input devices.

Based on this preliminary record, Petitioner has demonstrated sufficiently that the combination of Crosby and Curtin teaches the recited “*input control that enables the selection of the at least part of the content information and enables the generation of a response*” of limitation 43[d].

- g) 43[e] *a transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet including at a minimum the at least part of the content information, to a response authentication system.*

For this limitation, Petitioner points to Crosby’s wireless transmitter, which “sends a response packet identifying the program segment identification to the network operations center.” Pet. 32–33 (citing Ex. 1006, 11:50–54 (“[T]he network operations center directly accesses the program segment and vendor information databases based upon the *program segment identified by the digital radio signals* to retrieve information associated with the program segment selected by the subscriber.” (emphasis added by Petitioner)). Petitioner argues that a person of ordinary skill in the art “would have understood that the wireless transmission of such content information using a cellular or satellite-based system would have been packetized.” Pet. 33 (citing Ex. 1002 ¶ 95). Petitioner argues that Crosby’s “response packet is sent to a response authentication system,” because a person of ordinary skill in the art “would have understood that [Crosby’s] network operations center includes an authentication system.” Pet. 33 (citing Ex. 1002 ¶ 96).

Patent Owner argues Petitioner fails to show that Crosby teaches or suggests this limitation for the same reasons Patent Owner articulates for limitation 43[d], above. *See* Prelim. Resp. 11.

Based on this preliminary record, Petitioner has demonstrated sufficiently that Crosby teaches the recited “*transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet including at a minimum the at least part of the content information, to a response authentication system*” of limitation 43[e].

2. *Dependent Claims 47, 48, 51–53, 61, and 62*

Petitioner argues that Crosby and Curtin teach the recited limitations of dependent claims 47, 48, 51–53, 61, and 62. *See* Pet. 35 (claim 47), 36–37 (claim 48), 37 (claim 51), 37–38 (claim 52), 38–39 (claim 53), 39–40 (claim 61), 40–41 (claim 62).

Patent Owner contests Petitioner’s assertions and argues, among other things, that because Petitioner has not shown that independent claim 43 would have been obvious, Petitioner cannot show that the dependent claims would have been obvious. *See* Prelim. Resp. 12–13.

Patent Owner also disputes Petitioner’s arguments regarding Crosby with respect to dependent claims 48 and 61. *Id.* at 11–12. Patent Owner, however, does not address Petitioner’s arguments regarding the combined teachings of Crosby and Curtin, which we find persuasive based on the current record. *See* Pet. 36–37 (citing support from both Crosby and Curtin for Petitioner’s assertion that a person of ordinary skill in the art “would have recognized that it would have been obvious to include, in the ‘response packet,’ all the information that was originally received in the ‘data packet’”), 39–40 (explaining why it would have been obvious, based on the teachings of Curtin, to “include in Crosby’s system additional content information to identify the specific instance of a broadcast event, like the system in Curtin”).

We have considered the evidence and arguments presented in the Petition and the Preliminary Response, as well as the testimony of Petitioner's declarant, Dr. Almeroth. Based on the current record before us, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combination of Crosby and Curtin teaches the recited limitations of dependent claims 47, 48, 51–53, 61, and 62. We are also persuaded that Petitioner has demonstrated that a person of ordinary skill in the art would have had reason to combine the teachings of Crosby and Curtin in the manner described in the Petition.

3. Conclusion on Obviousness over Crosby and Curtin

Finally, we note that Patent Owner argues that the Board should give “no weight” to Dr. Almeroth's testimony because “the Declaration is a near verbatim copy of the attorney argument in the Petition.” Prelim. Resp. 19–23. We disagree. Based on the current record, including our preliminary review of Dr. Almeroth's background, his testimony, and the support he cites for that testimony, Dr. Almeroth appears qualified to provide credible testimony on this subject matter and to the extent Dr. Almeroth provides credible testimony that has probative value, we may credit it. We are also able to assess what weight to give Dr. Almeroth's testimony to the extent Dr. Almeroth's declaration and the Petition may be duplicative in nature.

Based on the current record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claims 43, 47, 48, 51–53, 61, and 62 under 35 U.S.C. § 103(a) as obvious over Crosby and Curtin.

F. Obviousness over Levy and Curtin

Petitioner asserts claims 43, 47, 48, 51, 52, 61, and 62 would have been obvious over Levy or over the combined teachings of Levy and Curtin

under 35 U.S.C. § 103(a). Pet. 41–59. We address particular claim limitations contested by Patent Owner below.

1. Independent Claim 43

- a) 43[a][1] a receiver module that detects a unique broadcast event and extracts from at least a portion of the data packet content information corollary to the unique broadcast event*

For this limitation, Petitioner directs us to Levy’s teaching of “a ‘digital receiver’ that ‘receives the broadcast data’ and ‘extracts the identifier,’ among other things.” Pet. 43–44 (citing Ex. 1013, 9:35–39). Petitioner points out that in Levy, “[d]ecoding of the identifier may be performed at the digital receiver’ and . . . the ‘decoding process extracts the identifier and uses it to access associated data or actions.’” Pet. 44 (citing Ex. 1013, 4:33–34, 9:35–36). According to Petitioner, Levy also teaches “a ‘decoding device’ that ‘extracts the identifier from the [media] object and uses it to retrieve related data or actions.’” Pet. 44 (citing Ex. 1013, 2:46–53). Petitioner argues that “[t]he decoded data, including title, artist, etc., is ‘content information corollary to the unique broadcast event.’” Pet. 44 (citing Ex. 1002 ¶ 115).

Petitioner also argues that “[t]o the extent that Levy alone does not disclose or teach this element, it would have been obvious to [a person of ordinary skill in the art] to include in Levy’s system still further content information corollary to the unique broadcast event.” Pet. 45 (citing Ex. 1002 ¶ 117). “This would have included,” Petitioner argues, “transmitting ‘date and time associated with the current broadcast’ as taught by Curtin.” Pet. 45 (citing Ex. 1010, 2:45).

Petitioner argues that a person of ordinary skill in the art “would have been motivated to include Curtin’s additional information corollary to the

broadcast, such as date and time information, to further uniquely identify the particular broadcast instance of any given song and enable additional functionality.” Pet. 46 (citing Ex. 1002 ¶ 119). Petitioner also argues that a person of ordinary skill in the art “would have understood that including additional broadcast information, such as date and time and other information taught by Curtin, would have better allowed to track precisely particular broadcast instances of any given song and allow content distributors to be compensated accordingly.” Pet. 46–47 (citing Ex. 1002 ¶ 119).

Patent Owner argues that “Petitioner fails to demonstrate that Levy teaches or suggests a *data packet*,” or show “how Levy teaches *a portion of the data packet content information corollary to the unique broadcast event*. Prelim. Resp. 13–14. Patent Owner, however, does not describe, identify, provide examples of, or define the recited “data packet” with respect to the ’203 Patent. In order to understand Patent Owner’s argument, a better understanding of the recited “data packet” is needed.

Petitioner explains that

[t]he ’203 Patent discloses a “broadcast response system” where the broadcast includes “content information” which is communicated to the user, who can then provide a response to be transmitted. [Ex. 1001] 6:1-5. In particular, the system in the ’203 Patent transmits “a unique broadcast event” such as a particular instance of playing a song, along with an ancillary “data packet” which contains “information pertaining to the main broadcast signal,” such as “the title of a song or name of an artist may be broadcast in concert with a music piece.” *Id.* 4:35-39.

Pet. 5–6.

Petitioner goes on to explain that

[a]s described in Claim 43, the combined device is straightforward. In plain terms, the ’203 Patent discloses a

system that can respond to a transmission of a broadcast (“a unique broadcast event”), such as a particular instance of playing a song, together with information such as song title, artist name, station or broadcast ID, date, time, etc. (“data packet content information corollary to the unique broadcast event”), where this information is taken from databases with one or more matching entries, stored and communicated to the user so that the user can respond, and then transmitting that response.

Id. at 7.

Figure 1 of the '203 Patent is set out below.

FIG. 1

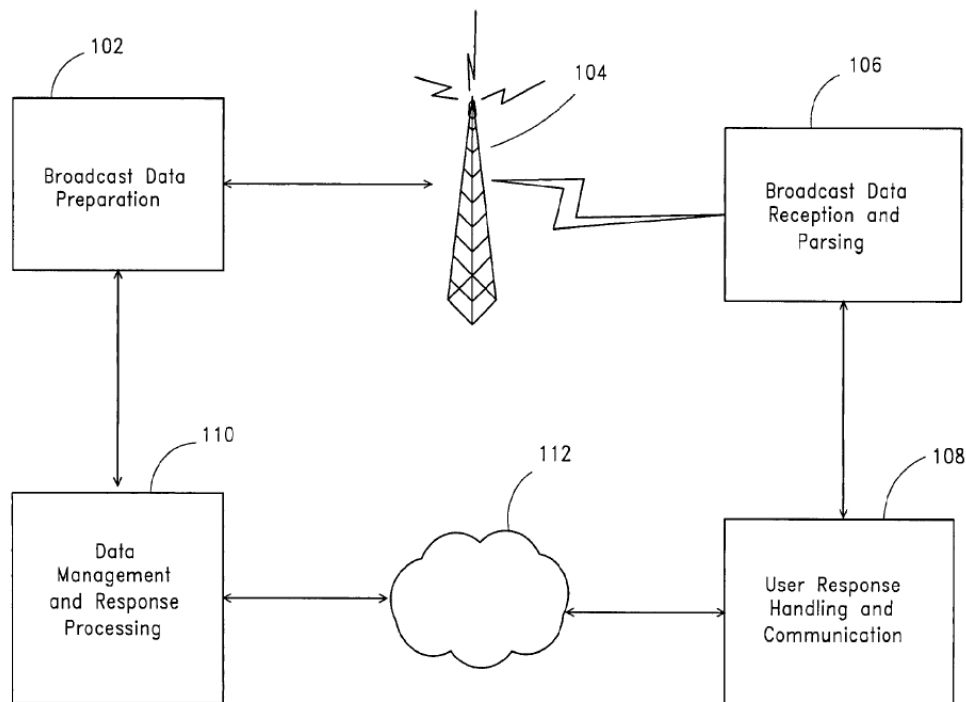


Figure 1 of the '203 Patent, shown above, illustrates a high-level overview of a broadcast response system. With respect to Figure 1, the '203 Patent explains that

broadcast data preparation module 102 is in communication with a broadcast system 104. *The broadcast data preparation module 102 prepares data for broadcast transmission. In one embodiment, the prepared data contains information pertaining to the main broadcast signal. For example, data containing the*

title of a song or name of an artist may be broadcast in concert with a music piece. Ads may also be identified in a similar fashion. Other information pertaining to the main broadcast signal may include data such as a purchase price, a purchase location or a unique identifier. The prepared data, however, is not required to pertain to the main broadcast signal.

. . . A broadcast reception module 106 receives broadcast transmissions from the broadcast system 104 and extracts the transmitted data. The extracted data may then be used, for example, to display information such as the title of the song or name of the artist to a user.

Ex. 1001, 4:32–43, 4:60–64 (emphases added).

Based on this information, we are persuaded on this record that a person of ordinary skill in the art reading the '203 Patent would understand that when broadcast data preparation module 102 “prepares data” for broadcast transmission, where such data contains information pertaining to the main broadcast signal, such as the “title of a song,” “name of an artist,” “purchase price,” “purchase location,” or “unique identifier,” such data preparation may include creation of a “*data packet*.” Moreover, such a data packet may include “*content information*” related to the broadcast transmission, such as the “title of a song,” “name of an artist,” “purchase price,” “purchase location,” or a “unique identifier.” This understanding is consistent with Petitioner’s description of the '203 Patent’s broadcast response system and is also consistent with Petitioner’s explanation of its understanding of claim 43 set forth above.

Thus, based on the current record, we credit Petitioner’s argument that Levy’s “decoded data, including title, artist, etc., is ‘content information corollary to the unique broadcast event,’” which is extracted from Levy’s “media object,” i.e. a “*data packet*.” Pet. 44 (citing Ex. 1001, 2:46–53, 4:33–34, 9:35–36; Ex. 1002 ¶ 115). We also note that once again, Patent

Owner has not responded to Petitioner's proposed combination of prior art, in this case, the combined teachings of Levy and Curtin.

Based on this preliminary record, Petitioner has demonstrated sufficiently that the combination of Levy and Curtin teaches the recited *“receiver module that detects a unique broadcast event and extracts from at least a portion of the data packet content information corollary to the unique broadcast event”* of limitation 43[a][1]. Petitioner has also shown sufficiently that a person of ordinary skill in the art would have been motivated to combine Levy and Curtin in the proposed manner.

b) 43[a][2] wherein the content information is sourced from a database system that has at a minimum two entries wherein at least one element of a first entry matches at least one element of a second entry, and at least one element of the content information matches at least one element of the first entry

For this limitation, Petitioner argues that a person of ordinary skill in the art

would have considered Levy's content information to include the object ID, “OID.” Ex-1002, ¶121. The OID may also include, for example, the distributor or broadcaster ID and other “context information” sourced from a database system. Ex-1013, 10:52-55 (“To identify the object, context information such as the play time captured at the tuner is used along with the radio station ID extracted from the received audio signal to identify the audio object.”). Levy discloses that its “server may be implemented as a database management program that manages identifiers and corresponding audio objects.”

Pet. 48 (citing Ex. 1013, 10:26–29; *see also* Fig. 1).

Petitioner points out that in Levy,

“the embedding process interacts with a registration process to get an identifier” where the “[t]he embedding process provides information about the object (e.g., a title and artist name, an ISRC, name of distributor, etc.)” and in response, “the

registration process provides an identifier and stores a database record of the association between identifier and the object or other information used in decoding to identify the object, such as its distributor or broadcaster.”

Pet. 49 (citing Ex. 1013, 3:65–4:6).

Patent Owner argues that “Petitioner fails to demonstrate that Levy teaches or suggests *a database system that has at a minimum two entries.*” Prelim. Resp. 16. Patent Owner also argues that “Petitioner does not identify a database within Levy” that acts as a source for Levy’s “object ID, distributor ID, and broadcaster ID.” *Id.*

Based on the current record, Patent Owner’s argument is unavailing. Petitioner points out that Levy’s “server may be implemented as a database management program that manages identifiers and corresponding audio objects.” Pet. 48 (citing Ex. 1013, 10:26–29, Fig. 1).

Based on this preliminary record, Petitioner has demonstrated sufficiently that Levy teaches the recited “*wherein the content information is sourced from a database system that has at a minimum two entries wherein at least one element of a first entry matches at least one element of a second entry, and at least one element of the content information matches at least one element of the first entry*” of limitation 43[a][2].

c) 43[d] *an input control that enables the selection of the at least part of the content information and enables the generation of a response*

For this limitation, Petitioner argues that “Levy’s device has an input control that enables the selection of the at least part of the content information and enables the generation of a response,” in particular a “button or voice recognition” input to “buy or get more information about a song.” Pet. 51–52 (citing Ex. 1013, 2:56–59, 6:37–42, 9:35–39, 12:25–26,

12:45–48). Patent Owner argues that “Petitioner does not explain how pushing a button (or implementing voice recognition) to retrieve information or buying opportunities *enables the selection of the at least part of the content information.*” Prelim. Resp. 17.

Based on the current record, Patent Owner’s arguments are unavailing. As Petitioner notes, Levy’s receiver displays a user interface, such as a window with “user options,” one of which is get more information about a particular song. Ex. 1013, 6:37–42, 12:24–26. The receiver “receives the broadcast data, extracts the identifier, and either automatically, or *at the user’s direction*, forwards the identifier to a server to look up the associated metadata or action.” *Id.* at 9:35–39 (emphasis added). This explanation suggests, at a minimum, that the user *selects* the song through user input at Levy’s receiver. Moreover, as discussed in Section II.F.1.a, above, Petitioner again includes Curtin’s broadcast date and time information as part of the content information that would be extracted, displayed, and selected.

Based on this preliminary record, Petitioner has demonstrated sufficiently that the combination of Levy and Curtin teaches the recited “*input control that enables the selection of the at least part of the content information and enables the generation of a response*” of limitation 43[d].

d) 43[e] *a transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet including at a minimum the at least part of the content information, to a response authentication system.*

For this limitation, Petitioner argues that

Levy’s device has a transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet includes at least part of the content

information, to a response authentication system. Levy discloses a transmitter, for example a “wire or wireless connection using standard . . . protocols like TCP/IP, HTTP” for transmitting a response packet generated from the input control. Ex-1013, 5:64-66. A [person of ordinary skill in the art] would have understood that TCP/IP and HTTP communications use packetized data. *Id.* 4:43-45, 5:51-6:2; Ex-1002, ¶126. Levy discloses that if the user selected a prompt to “click for more information or buying opportunities,” the user selection and identifiers are forwarded to the server. Ex-1013, 12:24-29 (“If the user selects these options, the plug-in forwards the user selections and identifier to the communication application, which forwards them to the server.”). Levy also discloses that when “a user activates the link to purchase products,” “the distributor name is logged with the purchase and that distributor is credited with royalties associated with the transaction.” *Id.* 7:48-52; *see also id.* 9:35-39, 4:22, 4:40-45, 5:61-66, 6:37-42, 12:48-50, 14:6-9. The response packet thus includes at least part of the content identifying information, including the media object ID and distributor ID.

This packet is sent to a response authentication system (such as “server (e.g., server 1, FIG. 1)” and servers linked to the media object to provide licensing or purchasing opportunities to “perform[] an electronic transaction.”). Ex-1013, 12:26-29, 4:43-45, 6:43-59, 13:50-67. A [person of ordinary skill in the art] would also have understood that TCP/IP and HTTP networks authenticate data packets. Ex-1002, ¶127. Additionally, crediting the user for these purchases may involve “credit cards, digital money, etc.” Ex-1013, 13:57-59. A [person of ordinary skill in the art] would have understood that such financial transactions would have also included an authentication system to ensure that the financial transactions occur properly.

Pet. 52–54 (citing Ex. 1002 ¶ 127).

Patent Owner argues that “Petitioner fails to demonstrate that Levy teaches or suggests transmitting a response packet *to a response authentication system*,” because “Petitioner fails to explain how the servers linked to licensing and purchasing, the TCP/IP and HTTP networks, or the

financial institutions, serve as a *response authentication system*.” Prelim. Resp. 17–18.

Patent Owner’s argument is unavailing. Based on the current record, we credit Petitioner’s argument that in Levy, “crediting the user for these purchases may involve ‘credit cards, digital money, etc.,’” and that a person of ordinary skill in the art “would have understood that such financial transactions would have also included an authentication system to ensure that the financial transactions occur properly.” Pet. 54 (citing Ex. 1013, 13:57–59; Ex. 1002 ¶ 127); *see* Ex. 1002 ¶ 127 (citing Ex. 1022, 7:15–22).

Based on this preliminary record, Petitioner has demonstrated sufficiently that Levy teaches the recited “*a transmitter that transmits a response packet corresponding to the response generated using the input control, the response packet including at a minimum the at least part of the content information, to a response authentication system*” of limitation 43[e].

2. *Dependent Claims 47, 48, 51, 52, 61, and 62*

Petitioner argues that Levy and Curtin teach the recited limitations of dependent claims 47, 48, 51, 52, 61, and 62. *See* Pet. 54–55 (claim 47), 55–56 (claim 48), 56–57 (claim 51), 57 (claim 52), 57–58 (claim 61), 59 (claim 62).

Patent Owner contests Petitioner’s assertions and argues, among other things, that because Petitioner has not shown that independent claim 43 would have been obvious, Petitioner cannot show that the dependent claims would have been obvious. *See* Prelim. Resp. 18–19.

We have considered the evidence and arguments presented in the Petition and the Preliminary Response, as well as the testimony of Petitioner’s declarant, Dr. Almeroth. Based on the current record before us,

we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combination of Levy and Curtin teaches the recited limitations of dependent claims 47, 48, 51, 52, 61, and 62. We are also persuaded that Petitioner has demonstrated that a person of ordinary skill in the art would have had reason to combine the teachings of Levy and Curtin in the manner described in the Petition.

3. *Conclusion on Obviousness over Levy and Curtin*

Based on the current record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claims 43, 47, 48, 51, 52, 61, and 62 under 35 U.S.C. § 103(a) as obvious over Levy and Curtin.

G. *Obviousness over Crosby Alone and Levy Alone*

Petitioner also asserts claims 43, 47, 48, 51–53, 61, and 62 would have been obvious over Crosby alone, and claims 43, 47, 48, 51, 52, 61, and 62 would have been obvious over Levy alone, under 35 U.S.C. § 103(a). Pet. 17–59. Given our determination that Petitioner has demonstrated a reasonable likelihood of prevailing on the asserted grounds based on combinations with Curtin, as explained above, we institute a trial on all of Petitioner’s asserted grounds.

III. CONCLUSION

For the foregoing reasons, we are persuaded that the Petition demonstrates a reasonable likelihood of prevailing in showing the unpatentability of at least one of the challenged claims of the ’203 Patent. Because Petitioner has satisfied the threshold for institution as to at least one claim, we institute *inter partes* review on all claims and all grounds raised in the Petition. See *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60

(2018) (holding that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition).

IV. ORDER

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '203 Patent is instituted with respect to all challenged claims and all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '203 Patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

FOR PETITIONER:

Ryan Yagura
Nicholas J. Whilt
Clarence A. Rowland
Caitlin Hogan
O'MELVENY & MYERS LLP
ryagura@omm.com
nwhilt@omm.com
crowland@omm.com
chogan@omm.com

FOR PATENT OWNER:

John Scheibeler
Jonathan Lamberson
Ashley T. Brzezinski
WHITE & CASE LLP
jscheibeler@whitecase.com
jonathan.lamberson@whitecase.com
ashley.brzezinski@whitecase.com