

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner,

v.

STRATOSAUDIO, INC.,
Patent Owner.

IPR2021-00712
Patent 8,903,307 B2

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

ARBES, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Petitioner Volkswagen Group of America, Inc. filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 11 and 15–18 of U.S. Patent No. 8,903,307 B2 (Ex. 1001, “the ’307 patent”) pursuant to

35 U.S.C. § 311(a). On October 25, 2021, we instituted an *inter partes* review as to all challenged claims on all grounds of unpatentability asserted in the Petition. Paper 16 (“Decision on Institution” or “Dec. on Inst.”). Patent Owner StratosAudio, Inc. filed a Patent Owner Response (Paper 28, “PO Resp.”), Petitioner filed a Reply (Paper 33, “Reply”), and Patent Owner filed a Sur-Reply (Paper 37, “Sur-Reply”). A combined oral hearing with Case IPR2021-00716 was held on July 21, 2022, and a transcript of the hearing is included in the record (Paper 49, “Tr.”).

Mazda Motor of America, Inc., Subaru of America, Inc., and Volvo Car USA, LLC filed a motion for joinder and a petition in Case IPR2022-00205, which were granted, and, therefore, were joined as petitioners in this proceeding. Paper 36. We adjusted the time of pendency in this proceeding beyond one year after institution due to joinder. Paper 55.

The proceeding was terminated as to Mazda Motor of America, Inc. and Volvo Car USA, LLC. *See* Papers 48, 54. In an Order entered concurrently with this Decision, the proceeding also is terminated as to Subaru of America, Inc.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 11 and 15–18 of the ’307 patent are unpatentable.

B. Related Matters

The parties indicate that the ’307 patent is the subject of the following pending district court cases: *StratosAudio, Inc. v. Volkswagen Group of America, Inc.*, Case No. 2:22-cv-10524 (E.D. Mich.), and *StratosAudio, Inc. v. Hyundai Motor America*, Case No. 2:22-cv-01712 (C.D. Cal.). *See* Pet. 1;

Paper 5, 1; Paper 58, 1–2. Petitioner filed a petition challenging claims of a patent related to the '307 patent in Case IPR2021-00716 (instituted), and petitions challenging claims of other patents asserted in one or more of the district court cases in Cases IPR2021-00717 (denied), IPR2021-00718 (denied), IPR2021-00719 (denied), IPR2021-00720 (instituted), and IPR2021-00721 (instituted). Hyundai Motor America (“Hyundai”) filed a petition challenging claims 11–20 of the '307 patent in Case IPR2021-01305 (instituted, “the Hyundai IPR”)¹ and petitions challenging claims of other patents asserted in one or more of the district court cases in Cases IPR2021-01267 (instituted), IPR2021-01303 (instituted), and IPR2021-01371 (instituted). Various parties filed petitions and motions for joinder to certain of the instituted proceedings, which were granted, in Cases IPR2022-00203, IPR2022-00204, and IPR2022-00224.

C. The '307 Patent

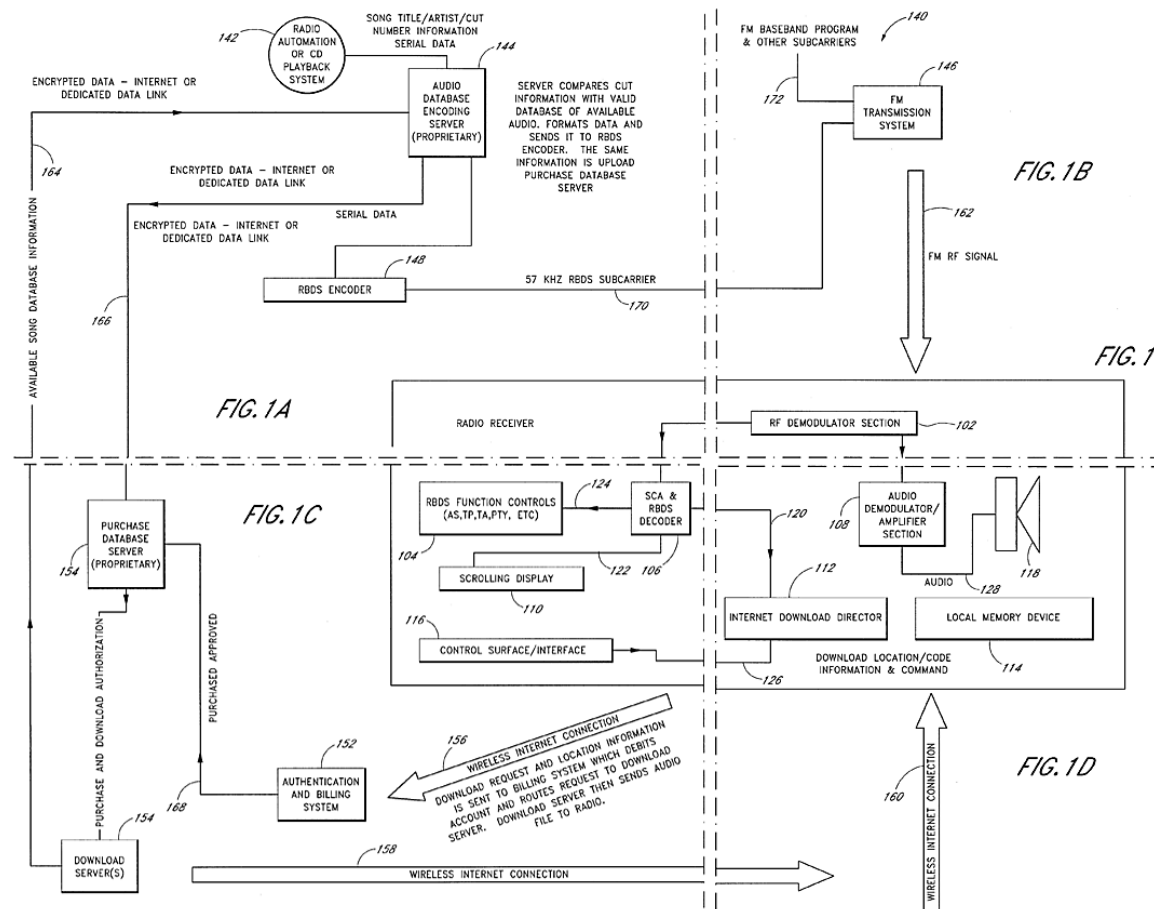
The '307 patent discloses “[a] broadcast response system [that] provides, e.g., a radio broadcast listener with the ability to obtain media content such as music or speech while listening to the radio.” Ex. 1001, code (57). “From the early days of FM broadcast transmission, stations have included ancillary signals such as background music or reading services for the blind along with a main carrier signal.” *Id.* at col. 1, ll. 29–31. “The most current and widely used data transmission standard is the United States Radio Broadcast Data Systems (‘RBDS’) standard” in which a system

¹ The Hyundai IPR involves different prior art from the references asserted in this proceeding. In a concurrently entered final written decision in the Hyundai IPR, we determine that Hyundai has shown by a preponderance of the evidence that claims 11–20 of the '307 patent are unpatentable.

“broadcast[s] a variety of program-related information,” such as station “call letters, station format, traffic alerts and scrolling text messages,” on a “subcarrier of a standard FM broadcast channel.” *Id.* at col. 1, ll. 35–56.

The ’307 patent states that “[b]roadcasters using the RBDS standard can distribute information to a large number of users,” but “the standard does not allow individual users to respond to the broadcast information.” *Id.* at col. 2, ll. 28–31. For example, a user listening to the radio may like a particular song that he or she would like to purchase, but “must write down or remember the identifying information and then go to a store or online retailer to purchase the media.” *Id.* at col. 2, ll. 32–39. The ’307 patent purportedly solves that problem by allowing the user to respond to the broadcast and purchase media content. *Id.* at col. 2, ll. 55–60.

The '307 patent includes Figures 1A–D, which are reproduced together below.



Figures 1A–D depict radio station 140, radio receiver 100, and various other devices. *Id.* at col. 4, ll. 22–25. Radio automation or CD playback system 142 “extract[s] information about songs or a radio program” from various sources and provides playlist information to Automatic Purchase System (APS) server 144, which matches the extracted information with information in a database of audio files available to download. *Id.* at col. 5, ll. 41–52. If such a file is available, APS server 144 provides download information to RBDS/RDS encoder 148. *Id.* at col. 5, ll. 52–55. RBDS/RDS encoder 148 then “transmits the RBDS/RDS information using the 57 khz RBDS/RDS subcarrier 170 to the FM transmission system 146. The RBDS/RDS

subcarrier signal 170 is mixed by the FM transmission system 146 with the FM baseband program signal 172 and any other subcarriers.” *Id.* at col. 5, ll. 57–62. “The FM transmission system 146 then transmits an FM [radio frequency (RF)] signal 162 which is received by the radio receiver 100.” *Id.* at col. 5, ll. 62–63.

The ’307 patent describes various types of information that can be provided to the radio user using the data subcarrier signal, such as a song title, artist, album name, purchase price of the song, and IP address for the location where the digital version of the song is stored. *Id.* at col. 3, ll. 39–45, col. 5, ll. 4–13, 48–49. A “reference number” representing the information stored in a lookup table accessed by APS server 144 “can also be employed for ease of implementation.” *Id.* at col. 3, ll. 42–48.

RF demodulator section 102 “splits the [received FM RF signal] into an audio signal and a data signal.” *Id.* at col. 4, ll. 39–43. Audio demodulator amplifier section 108 receives the audio signal and converts it to audio signal 128 that can be output on speaker 118. *Id.* at col. 4, ll. 35–38, 53–54. RBDS/RDS decoder 106 receives the data signal and processes it to display information to the user on scrolling display 110. *Id.* at col. 4, ll. 39–47, col. 4, l. 66–col. 5, l. 3.

The ’307 patent further describes a process whereby “a user can place an order to download a song using the control interface 116” of radio receiver 100. *Id.* at col. 5, ll. 14–15. Radio receiver 100 provides a signal to authentication and billing system 152 (e.g., over wireless Internet connection 156) and, when the purchase is approved, download server 154 provides the requested material to radio receiver 100 (e.g., over wireless Internet connection 158). *Id.* at col. 5, ll. 15–40. The ’307 patent discloses that “[i]n one embodiment, activity of each sale using the [disclosed] system is

tracked for the purposes of aggregating data or ‘Data Mining’ for sale to interested parties such as trade publications and record companies.” *Id.* at col. 3, ll. 52–55.

D. Illustrative Claim

Challenged claim 11 of the ’307 patent is independent. Claims 15–18 each depend directly from claim 11. Claim 11 recites (with letter designations used in the Petition to refer to the various limitations):

11. A system for correlating media content identifying data with at least one broadcast segment received by a communication device, the system comprising:

[a] a receiver configured to receive a broadcast stream comprising the at least one broadcast segment and associated media content, [b] the receiver further configured to receive a data stream associated with the broadcast stream, the data stream comprising, at a minimum, the media content identifying data, wherein the media content identifying data comprises at least one element;

[c] at least one computer processor configured to extract the media content identifying data from the data stream, associating each media content identifying data element with at least one of a plurality of media content;

[d] an electronic memory of the communication device configured to store, at a minimum, media content identifying data elements into identifying data aggregates, each identifying data aggregate associated with at least one of the plurality of media content and the at least one broadcast segment, [e] wherein the at least one broadcast segment is corollary to the at least one of the plurality of media content; and

[f] an output configured to present at least a portion of the data elements stored in the electronic memory of the communication device to provide selective outputting using an interface of at least one of the following: the media content identifying data, the media content, the corollary broadcast

segment, a temporal position of the corollary broadcast segment of the broadcast stream.

E. Evidence

The pending grounds of unpatentability in the instant *inter partes* review are based on the following prior art:

U.S. Patent No. 6,317,784 B1, filed Sept. 29, 1998, issued Nov. 13, 2001 (Ex. 1005, “Mackintosh”); and

U.S. Patent No. 5,579,537, issued Nov. 26, 1996 (Ex. 1004, “Takahisa”).

Petitioner filed a declaration from Vijay Madisetti, Ph.D. (Ex. 1003) with its Petition and a reply declaration from Dr. Madisetti (Ex. 1018) with its Reply. Patent Owner filed a declaration from John C. Hart, Ph.D. (Ex. 2019) with its Response. Also submitted as evidence are transcripts of the depositions of Dr. Madisetti (Ex. 2021) and Dr. Hart (Ex. 1019).

F. Asserted Grounds

This *inter partes* review involves the following grounds of unpatentability (Pet. 3):

Claim(s) Challenged	35 U.S.C. § ²	Reference/Basis
11, 15–18	103(a)	Mackintosh
11, 15, 16, 18	102(b)	Takahisa
17	103(a)	Takahisa

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the challenged claims of the ’307 patent have an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103. *See* Pet. 3; PO Resp. 16.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art for a challenged patent, we look to “1) the types of problems encountered in the art; 2) the prior art solutions to those problems; 3) the rapidity with which innovations are made; 4) the sophistication of the technology; and 5) the educational level of active workers in the field.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666–667 (Fed. Cir. 2000). “Not all such factors may be present in every case, and one or more of them may predominate.” *Id.* at 667.

Petitioner argues that at the time of the ’307 patent (September 2000), a person of ordinary skill in the art would have had “a B.S. in computer science or electrical engineering (or a related field), and approximately three years of experience working in the communications- or Internet-related industries, or, alternatively, an advanced degree (such as a master’s degree) in computer science or electrical engineering (or a related field).” Pet. 7 (citing Ex. 1003 ¶ 44); *see* Ex. 1003 ¶ 29. Patent Owner applies the same definition of the level of ordinary skill in the art. PO Resp. 16 (citing Ex. 2019 ¶¶ 58–59). Based on the full record developed during trial, including our review of the ’307 patent and the types of problems and solutions described in the ’307 patent and cited prior art, we agree with Petitioner’s proposed definition of the level of ordinary skill in the art and apply it for purposes of this Decision. *See, e.g.*, Ex. 1001, col. 1, l. 28–col. 2, l. 51 (describing in the “Background” section of the ’307 patent various FM broadcast and other communication methods).

B. Claim Interpretation

We interpret the claims of the challenged patent

using the same claim construction standard that would be used to construe the [claims] in a civil action under 35 U.S.C. 282(b), including construing the [claims] in accordance with the ordinary and customary meaning of such [claims] 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) (2020). “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 given their plain and ordinary 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). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own 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).³

1. Preamble of Claim 11

In the Decision on Institution, we determined based on the record at the time that the preamble of claim 11 is limiting because the body of the

³ The claim interpretations adopted herein are identical to those set forth in the concurrently entered final written decision in the Hyundai IPR, with one exception—we need not interpret “broadcast stream” in that proceeding.

claim refers to the preamble for antecedent basis for the terms “media content identifying data,” “at least one broadcast segment,” and “communication device.” *See* Dec. on Inst. 27 n.5; *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) (“When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.”). Patent Owner agrees, and Petitioner does not argue otherwise in its Petition or Reply. *See* Pet. 49 (arguing that “[r]egardless of whether the preamble is limiting, it is disclosed by Mackintosh”); PO Resp. 33–34. Based on the full trial record, we determine that the preamble of claim 11 is limiting.

2. “Broadcast Stream”

Petitioner argues that “broadcast stream” should be interpreted to mean

“any media conveyance methodology that conveys information in the form of a signal,” including, for example, data, information, or programming distributed over AM/FM radio, digital radio, the Internet, satellite, cable, analog television, digital television, or the like.

Pet. 8. Patent Owner does not object to Petitioner’s proposed interpretation.

PO Resp. 17. We adopt Petitioner’s proposed interpretation, which is consistent with the Specification of the ’307 patent. *See* Pet. 8–10 (citing Ex. 1001, col. 1, l. 29–col. 2, l. 51, col. 4, ll. 16–21, col. 10, l. 56–col. 11, l. 20).

3. “Broadcast Segment”

In the Decision on Institution, based on the record at the time, we agreed with and adopted Petitioner’s proposed interpretation of “broadcast segment” as “a distinguishable piece or portion of a broadcast stream, such as an individual song, speech, or video.” *See* Dec. on Inst. 20–23; Pet. 10. Patent Owner argues that “broadcast segment” instead should be interpreted to mean “a discretely identifiable portion of programming as broadcasted.” PO Resp. 17–20.

As an initial matter, we note—and the parties agree—that there is little difference between the parties’ proposed interpretations. Petitioner’s proposed interpretation uses the term “distinguishable,” whereas Patent Owner uses “discretely identifiable.” *See* Pet. 10; PO Resp. 17. According to Petitioner, however, there is no difference between “distinguishable” and “identifiable,” as the terms are “largely interchangeable.” Tr. 11:10–19, 78:15–20. Similarly, Petitioner’s proposed interpretation uses the phrase “portion of a broadcast stream,” whereas Patent Owner uses “portion of programming as broadcasted.” *See* Pet. 10; PO Resp. 17. Petitioner agrees that “of a broadcast stream” and “as broadcasted” are “one and the same.” Tr. 79:21–80:7.

The dispute between the parties appears to be in the *application* of the prior art when using Patent Owner’s proposed interpretation. *See id.* at 10:5–9 (arguing that “[i]t is when [Patent Owner] begin[s] to apply [its] construction that the differences become apparent and [Patent Owner is] essentially cobbling on additional limitations to that construction”), 80:8–25. Petitioner contends that Patent Owner’s arguments import four additional requirements that are not supported by the claim language or Specification of the ’307 patent:

- (1) each broadcast segment must be “discretely identifiable relative to all other ‘broadcast segments’ transmitted” and “contextually unique to all others”;
- (2) “a broadcast segment can occur once and only once”;
- (3) each broadcast segment “must have a temporal component”; and
- (4) broadcast segments must differentiate between different instances of the same song being broadcast multiple times in a day.

Reply 2–3 (citations omitted). None of these, however, are part of Patent Owner’s proposed interpretation. To the extent relevant, we discuss them below in our analysis of Petitioner’s obviousness ground based on Mackintosh. *See infra* Section II.D.2.b.

After reviewing the full trial record, we are persuaded that the phrasing of Patent Owner’s proposed interpretation is correct, primarily because of its use of “as broadcasted.”

First, by its plain language, a “broadcast segment” is a “segment” of a “broadcast.” *See* Tr. 10:24–11:1, 17:20–18:5 (Petitioner agreeing that a “broadcast segment” is “a segment of the broadcast” and is, for example, “distinguishable from the very next segment and the segment after that”); Ex. 2021, 22:20–23:7 (Dr. Madisetti agreeing that the ’307 patent “clearly describe[s] an example of a distinguishable piece or portion of the work *as streamed* as an individual song” (emphasis added)). Petitioner’s proposed interpretation is that a “broadcast segment” is a piece or portion “of a broadcast stream,” but that is already part of the claim—limitation 11[a] recites “a broadcast stream *comprising* the at least one broadcast segment” (emphasis added). *See* Pet. 10. Patent Owner’s proposed interpretation more clearly specifies that a “broadcast segment” is a portion of programming “as broadcasted.” *See* PO Resp. 17. To illustrate, although a

song can be an example of a “broadcast segment,” the “broadcast segment” is not the song in the abstract, but rather the portion of the broadcast that is the song. In other words, “[a]n individual song’ as broadcasted may serve as one example of a ‘broadcast segment’ *because* the broadcast of the song constitutes a discretely identifiable portion of broadcasting as broadcasted.” *See id.* at 19 (emphasis added); Sur-Reply 9. We are persuaded that the language of claim 11 supports Patent Owner’s proposed interpretation.

Second, although the Specification of the ’307 patent only uses the term “broadcast segment” twice, it provides some support for Patent Owner’s view that a “broadcast segment” is a portion of programming “as broadcasted.” The Specification discloses:

[R]adio station 140, using either a standard radio automation system for tracking of *music content which is being broadcast*, or a data-enabled audio player, *broadcasts audio material* and synchronously sends RBDS/RDS or similar data to an APS server 144 that assigns a unique identifier to each specific *broadcast segment* or song.

The APS server 144 compares the *broadcast segment* identifier with a database 150 of audio available for purchase. If the *broadcasted audio* is available, the APS server 144 incorporates station call letter information, and an audio download location such as IP address and a file name into a data stream that is inserted into a radio station’s broadcast using RBDS/RDS or similar technology. The information identifying the audio selected by the listener or user is routed to the APS Data Server and passed on to the location where a digital version of the audio content is stored and available for transfer to the end user. The user’s radio receiver 100 receives and recognizes the encoded RBDS/RDS or other data and presents it on the radio display 110 notifying the user that the audio is available for purchase.

Ex. 1001, col. 5, l. 64–col. 6, l. 16 (emphasis added). Thus, in the exemplary embodiment described above, the “broadcast segment” is a portion of the audio content being broadcasted.⁴ *See id.*

Based on the full trial record, we interpret “broadcast segment” to mean “a discretely identifiable portion of programming as broadcasted.”

4. “Media Content”

In the Decision on Institution, based on the record at the time, we agreed with and adopted Petitioner’s proposed interpretation of “media content” as “any form of media content that, when translated from the signal-form in which it is transmitted, is discernible to humans.” Dec. on Inst. 23. Patent Owner does not object to that interpretation, which we adopt based on the full trial record. *See* PO Resp. 20.

5. “Receiver Configured to Receive a Broadcast Stream Comprising the At Least One Broadcast Segment and Associated Media Content”

In the Decision on Institution, based on the record at the time, we noted that Petitioner’s proposed interpretations of “broadcast segment” and “media content”

read the claim language as encompassing the same underlying content (e.g., a song) in two different forms—the “broadcast segment” being a distinguishable piece or portion of the broadcast stream itself, which is in signal-form, and the “media content” being the content after it has been translated from signal-form into a form that is discernible to humans.

⁴ The “broadcast segment” described in the Specification also has an assigned “unique identifier” as part of the broadcast. Ex. 1001, col. 5, l. 64–col. 6, l. 2. Patent Owner points to that disclosure as support for dependent claim 16, which recites “data that enables a unique identification of the least one broadcast segment.” PO Resp. 55–56.

Dec. on Inst. 22–23. We stated that Petitioner’s reading appeared to be consistent with the Specification, but encouraged the parties to address in their papers the interpretation of the full “receiver” limitation in claim 11. *Id.* Patent Owner argues that a person of ordinary skill in the art “would understand the clause consistent with the Board’s finding, with the qualification” that we should adopt Patent Owner’s proposed interpretation of “broadcast segment.” PO Resp. 20–22. Petitioner “agrees with the Board’s interpretation but disagrees with” Patent Owner’s proposed interpretation of “broadcast segment.” Reply 7–8. Based on the full trial record, we maintain our earlier determination for the “receiver” limitation and adopt Patent Owner’s proposed interpretation of “broadcast segment” for the reasons explained above. *See supra* Section II.B.3.

6. “Associate” Terms

Claim 11 recites “a broadcast stream comprising the at least one broadcast segment and *associated* media content,” receiver that “receive[s] a data stream *associated* with the broadcast stream,” computer processor that “extract[s] the media content identifying data from the data stream, *associating* each media content identifying data element with at least one of a plurality of media content,” and “each identifying data aggregate *associated* with at least one of the plurality of media content and the at least one broadcast segment” (emphasis added). Claim 18 recites “an input configured to detect a selection *associated* with the presentation of the stored data” (emphasis added). We refer to these as the “associate” terms.

After our Decision on Institution, the district court issued a Claim Construction Order construing the terms “associated,” “associating,” and “associating each media content identifying data element with at least one of

a plurality of media content” to each have their “[p]lain and ordinary meaning.” Ex. 3003, 1–2. During the district court proceedings, Patent Owner proposed the “[p]lain and ordinary meaning” construction, whereas Petitioner argued that the terms were indefinite. Ex. 3001, 1–2.

In this proceeding, Patent Owner argues in its Response that the “associate” terms “are used in their ordinary manner in the context of the ’307 patent to mean an implemented link between two or more items (such as data, broadcast segments, and media content)” where the link is “formal,” “intentional,” and “implemented” by the system of claim 11. PO Resp. 22–23 (citing Ex. 2019 ¶¶ 71–72). According to Patent Owner, this is different than a merely “conceptual” link; the term “related,” for example, also is used in the Specification of the ’307 patent and does not necessarily require “a connection that is implemented in a system.” *Id.* (citing Ex. 1001, col. 1, ll. 26, 38–42, col. 8, ll. 7–12, col. 11, ll. 13–17, 27–30). Petitioner disagrees, arguing that the terms “refer to two concepts that were conceptually connected without the need for a system to store a link” and citing other portions of the Specification that use the term “associated.” Reply 8–9 (citing Ex. 1001, col. 7, ll. 27–33, col. 8, ll. 12–14; Ex. 1018 ¶¶ 39–41).

We agree with Petitioner. Patent Owner does not point to—and we do not find—any language in the claims requiring that the recited associations be implemented in a particular way, such as by the system storing a link. Rather, each limitation merely recites that one item is “associate[d]” with another: “broadcast segment” with “media content,” “data stream” with “broadcast stream,” “each media content identifying data element” with “at least one of a plurality of media content,” “each identifying data aggregate” with “at least one of the plurality of media content and the at

least one broadcast segment,” and “selection” with “the presentation of the stored data.”

Nor does the Specification define or use the term “associated” in a manner indicating that the term should be limited to require a formal link implemented by the disclosed system. To the contrary, in every instance, the Specification uses the term “associated” broadly to refer to two items related to each other in some manner; for example, consistent with the language of claim 11, the Specification explains how a broadcast may have an “associated” data stream providing information about what is being played. *See, e.g.*, Ex. 1001, col. 6, ll. 31–33 (“storage server 154 at a source location . . . uploads the requested audio to the routing address *associated* with the user’s cell phone account identifier”), col. 7, ll. 27–33 (“[a]utomotive radios equipped with the APS module 202 and *associated* technologies . . . send a purchase request (or interactive response) complete with [other information] accompanying the *associated* broadcast”), col. 8, ll. 7–14 (“The user can also receive offers or hyperlinks posted on a personal web site *Associated* books, magazine articles, merchandise and event information can also be posted for the user to purchase using the APS.”), col. 12, ll. 13–20 (“television adapters equipped with the APS module 302 and *associated* technologies can use a wireless interface 318 to send a purchase request (or interactive response) complete with [other information] derived from the RBDS/RDS data string accompanying the *associated* broadcast”) (emphasis added). The mere fact that the Specification also uses “related” in other contexts does not demonstrate that the patentee intended for there to be a meaningful difference between “related” and “associated.”

We interpret the “associate” terms to not require a formal link implemented by the system of claim 11 as Patent Owner argues, and

conclude that no further interpretation is necessary to decide the issues presented during trial. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“Because we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy,’ we need not construe [a particular claim limitation] where the construction is not ‘material to the . . . dispute.’” (citation omitted)).

7. “Corollary”

In the Decision on Institution, we encouraged the parties to address in their papers the interpretation of the term “corollary” in claim 11. Dec. on Inst. 23. Patent Owner argues that the term means “correlated,” and Petitioner does not object. *See* PO Resp. 23; Reply 9. We conclude that no interpretation of the term is necessary to decide the issues presented during trial. *See Nidec*, 868 F.3d at 1017.

C. Legal Standards

To prevail in its challenges to the patentability of claims 11 and 15–18 of the ’307 patent, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); *see also In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016) (“Where, as here, the only question presented is whether due consideration

of the four *Graham* factors renders a claim or claims obvious, no burden shifts from the patent challenger to the patentee.”).

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “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.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a) (2006)). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, objective indicia of nonobviousness, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”⁵ *Id.* When conducting an obviousness analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (citation omitted).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the

⁵ The trial record does not include any evidence of objective indicia of nonobviousness.

prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”). Also, “[t]hough less common, in appropriate circumstances, a patent can be obvious in light of a single prior art reference if it would have been obvious to modify that reference to arrive at the patented invention.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

“Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed invention.’” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citation omitted). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’” (citation omitted)); *Magnum Oil*, 829 F.3d at 1380 (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

D. Obviousness Ground Based on Mackintosh (Claims 11 and 15–18)

1. Mackintosh

Mackintosh discloses a “media player for playing broadcast material” where “supplemental materials can be provided to a user in a coordinated fashion with the broadcast materials being delivered.” Ex. 1005, code (57), col. 2, ll. 42–47. “[T]he broadcast material is delivered to the user in segments such as, for example, tracks of music, advertisements, and promotional materials in a radio broadcast.” *Id.* at col. 2, ll. 50–54. “Supplemental materials can include, for example, images, video clips, audio clips, data, or other materials that may be provided to the user in conjunction with the broadcast materials,” and “can also include advertising information that is provided to the user during particular segments of the broadcast material . . . such that the value of the advertising is enhanced.” *Id.* at col. 2, ll. 59–67, col. 10, l. 64–col. 11, l. 40.

Mackintosh describes an exemplary embodiment in which radio broadcast materials are broadcast over the Internet. *Id.* at col. 3, ll. 1–3. For example, “the radio broadcast materials can include a plurality of tracks” streamed to the user, such as “music tracks, advertising tracks, DJ voice or introduction tracks, [and] promotional tracks.” *Id.* at col. 3, ll. 3–9. “[T]he tracks are provided along with program data that can indicate, for example, an identification of the track, the type of track, and other pertinent or relevant information regarding the particular track being broadcast at that time.” *Id.* at col. 3, ll. 9–13.

Figure 1 of Mackintosh is reproduced below.

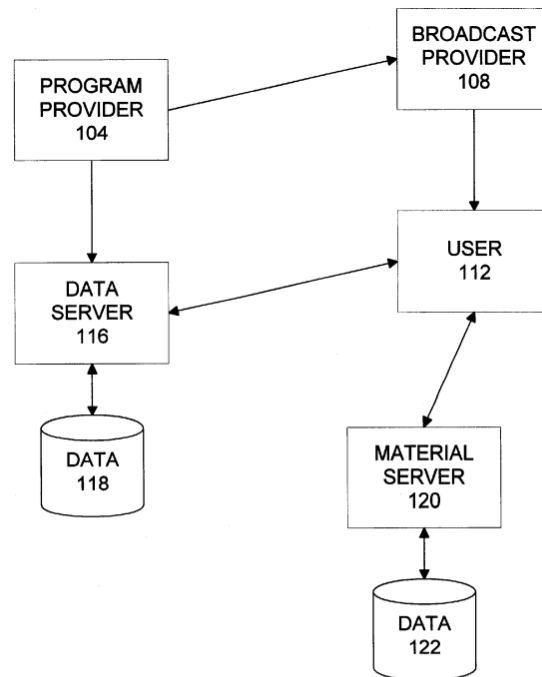
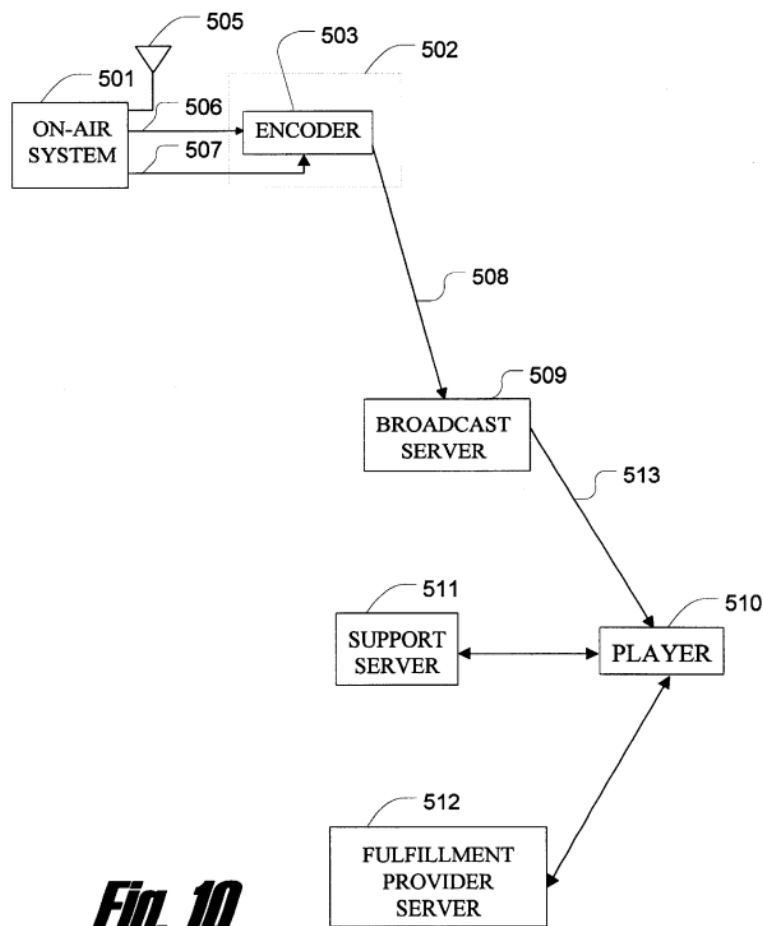


Fig. 1

Figure 1 depicts “an example architecture for providing supplemental materials in coordination with broadcast materials.” *Id.* at col. 5, ll. 7–10. Program provider 104 “provide[s] its broadcast materials directly to a user’s user equipment 112 or, alternatively, via a broadcast provider 108.” *Id.* at col. 5, ll. 18–20. “[P]rogram provider 104 provides information pertaining to the broadcast materials,” such as “event codes identifying the item being broadcast,” to data server 116. *Id.* at col. 5, ll. 38–40, 61–67. “[D]ata server 116 utilizes the data received from program provider 104 to retrieve supplemental materials related to the broadcast materials and to provide those supplemental materials to user equipment 112 in coordination with the broadcast materials.” *Id.* at col. 5, ll. 52–56. Alternatively, data server 116 uses the data received from program provider 104 to retrieve “locational or other identification information about the supplemental information” and

provides that information to user equipment 112, which uses the information to access and retrieve the supplemental information itself from material server 120. *Id.* at col. 6, ll. 5–19.

Figures 10–12 of Mackintosh depict “[a] more specific example implementation” involving the broadcast of “a predetermined audio stream comprising a predetermined sequence of songs interspersed with one or more audio advertisements.” *Id.* at col. 21, ll. 3–9. Figure 10 of Mackintosh is reproduced below.



As shown in Figure 10, on-air system 501 provides audio information

in digital form over signal line 506 to encoder 503. Concurrently, the on-air system also provides over signal line 507 data in the form of identifying indicia or codes such as cut codes. The codes are indicators of the audio information concurrently being transmitted over signal line 506. Advantageously, each song or advertisement comprising the audio information being concurrently transmitted over signal line 506 comprises a distinct segment. A cut code corresponding to and uniquely identifying a segment from the standpoint of the radio station is transmitted over signal line 507 concurrently with the transmission of the corresponding segment over signal line 506.

Id. at col. 21, ll. 11–25. Encoder 503 “merge[s] the cut codes provided over signal line 507 with the audio information provided over signal line 506 to provide a merged data stream over signal line 508” to broadcast server 509, which provides the merged data stream to player 510 over the Internet. *Id.* at col. 21, ll. 31–39, 47–51. Player 510, executing on a client computer, plays the audio component of the merged data stream on speakers. *Id.* at col. 21, ll. 60–64. Player 510 also “detect[s] the presence of a cut code in the merged stream, and responsive to detecting the presence of a cut code identifying a song, signal[s]” support server 511. *Id.* at col. 22, ll. 1–4. Support server 511 accesses various database tables to retrieve information about the song being broadcast (e.g., “artist name, album name, song name, image, and provider link”) and provides the information to player 510, which displays it. *Id.* at col. 22, ll. 11–60.

Figure 12 of Mackintosh is reproduced below.

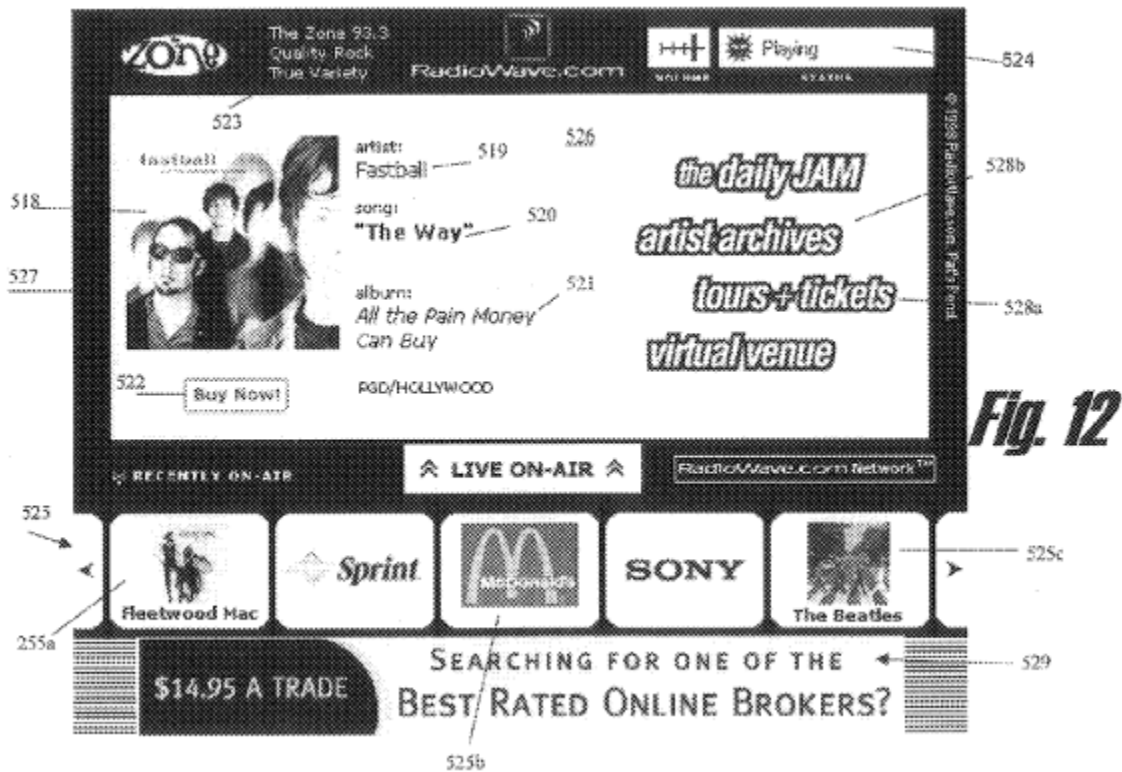


Figure 12 is an exemplary display shown on player 510 comprising various parts. *Id.* at col. 22, ll. 61–62. Web-based component 526 displays album cover image 518, artist name 519, song name 520, and album name 521. *Id.* at col. 22, ll. 61–67. History component 525 displays “information about the audio segments that have been played by the player in the recent past, . . . with the most recent information beginning at the left, and the less recent information being arranged towards the right.” *Id.* at col. 23, ll. 7–13. “[T]he information . . . displayed is the image associated with the segment”: from left to right, “image 525a from a Fleetwood Mac album cover, . . . indicating that a song from this album was most recently played,” followed by images for advertisements of Sprint, McDonalds, and Sony, followed by “image 525c for a Beatles album cover, . . . indicating that a song from this album was played.” *Id.* at col. 23, ll. 13–24. “As audio information is

played, this history information is updated.” *Id.* at col. 23, ll. 24–25. Finally, the display includes “Buy Now” button 522, which allows the user to click and navigate to a fulfillment provider server (e.g., www.amazon.com) using the received provider link (e.g., a Uniform Resource Locator (URL)) to purchase an “album containing the song being played or related albums.” *Id.* at col. 23, ll. 26–44.

Mackintosh discloses computer system 702 for implementing the disclosed invention, comprising processor 704, main memory 708, secondary memory 710, and communications interface 724 for communicating signals to and from other devices. *Id.* at col. 24, l. 10–col. 25, l. 4, Fig. 13.

2. *Claim 11*

Petitioner argues that claim 11 is unpatentable over Mackintosh under 35 U.S.C. § 103(a), relying on the testimony of Dr. Madisetti as support. Pet. 48–64 (citing Ex. 1003). Patent Owner makes various arguments in response, relying on the testimony of Dr. Hart. PO Resp. 45–55 (citing Ex. 2019); Sur-Reply 15–19.

a) Petitioner’s Arguments

Petitioner argues that Mackintosh, “through its various examples,” teaches all of the limitations of claim 11 and it would have been obvious to combine the reference’s disclosures to achieve the system of claim 11. Pet. 48–64.

With respect to the preamble of claim 11, Petitioner contends that Mackintosh discloses a system for correlating “media content identifying data” (i.e., supplemental materials, including artist name, album name, song

name, image, and provider link) with a “broadcast segment” (i.e., a broadcasted music track or advertising track) received by a “communication device” (i.e., the user’s computer with a communications interface). *Id.* at 49–52. Petitioner argues that Mackintosh’s system correlates media content identifying data with a broadcast segment by “displaying the information that is associated with the particular music track that is being played by the user.” *Id.* at 52.

With respect to limitation 11[a], Petitioner contends that Mackintosh discloses a “receiver” (i.e., computer system 702 on which the software player operates) configured to receive a “broadcast stream” (i.e., broadcast containing a stream of songs and advertisements) comprising “at least one broadcast segment and associated media content.” *Id.* at 52–54. Petitioner argues that “each song or advertisement (in its signal form) is a distinguishable portion of the broadcast stream, and, when translated from signal-form by the computer and software player residing thereon, each song or advertisement is discernible to humans.”⁶ *Id.* at 53–54.

With respect to limitation 11[b], Petitioner argues that computer system 702 on which the software player operates is configured to receive a “data stream” (i.e., stream of data received from data server 116 containing the supplemental materials) comprising the “media content identifying data compris[ing] at least one element” (i.e., at least one of the supplemental

⁶ Petitioner’s arguments are premised on its proposed interpretations of “broadcast stream,” “media content,” the “receiver” limitation, and the “associate” terms, which we agree with for the reasons explained above. *See* Pet. 53–54, 58–60; Reply 7–9; *supra* Sections II.B.2, II.B.4–6. We address the parties’ arguments regarding the “broadcast segment” of claim 11 below. *See infra* Section II.D.2.b.(1).

materials, such as artist name, album name, song name, image, or provider link). *Id.* at 54–55.

With respect to limitation 11[c], Petitioner contends that Mackintosh discloses a “computer processor” (i.e., processor 704 of computer system 702, which a person of ordinary skill in the art would have understood to be “a more specific implementation of the generic ‘user equipment 112’” shown in Figure 1) configured to extract the artist name, album name, song name, image, and provider link for a song from the received stream of data, associating each piece of information with media content. *Id.* at 56–57. According to Petitioner, the fact that Mackintosh displays the information on a display panel “as the user listens to the songs/advertisements” shows that the system is performing the recited “associating.” *Id.* at 57.

With respect to limitation 11[d], Petitioner argues that Mackintosh discloses an “electronic memory” (i.e., main memory 708 and secondary memory 710 of computer system 702, which a person of ordinary skill in the art would have understood to be “a more specific implementation of the generic ‘user equipment 112’”) configured to store the supplemental materials (i.e., artist name, album name, song name, image, and provider link) for a song. *Id.* at 58–60. Petitioner asserts, with supporting testimony from Dr. Madisetti and citations to various disclosures in Mackintosh, that a person of ordinary skill in the art “would have understood that each element of the ‘supplemental materials’ is aggregated into an ‘identifying data aggregate’ for that particular song and broadcast segment to which it relates, and that the identifying data aggregates are saved in the computer’s main memory.” *Id.* at 59–60. Specifically, because Mackintosh discloses a “history bar” showing information about previously played songs and allows the user to “go back via the history bar” and view such information, an

ordinarily skilled artisan would have understood from Mackintosh's disclosures that "previously played songs/broadcast segments are aggregated into a history aggregate—an aggregate of song aggregates." *Id.* (quoting Ex. 1005, col. 16, ll. 9–32; citing Ex. 1003 ¶¶ 219–224).

With respect to limitation 11[e], Petitioner argues that at least one "broadcast segment" (i.e., a distinguishable portion of the broadcast, such as a song or advertisement, broadcasted in signal-form) in Mackintosh is "corollary" to a "media content" (i.e., the media of a song or advertisement translated from signal-form to an audible form discernible to humans). *Id.* at 60–61.

With respect to limitation 11[f], Petitioner contends that Mackintosh discloses an "output" (i.e., player 510) configured to display the artist name, album name, song name, image, and provider link (visually represented by "Buy Now" button 522) for a song that were received and stored in memory. *Id.* at 61–63. Petitioner argues that player 510 thus "present[s] at least a portion of the data elements stored in the electronic memory of the communication device to provide selective outputting using an interface of . . . the media content identifying data," as recited in claim 11. *Id.* at 62–63.

In arguing that Mackintosh teaches the limitations of claim 11, Petitioner relies on various disclosures pertaining to the exemplary architecture shown in Figure 1 (depicting user equipment 112) and the software "player" on a user's computer described in connection with subsequent figures. *Id.* at 48–64. Specifically, Petitioner contends that a person of ordinary skill in the art "would have found it obvious to implement the transmission architecture depicted in Mackintosh's [F]igure 1 through 'computer system 702' operating 'player 510,' (or through 'user terminal 212' operating 'player interface 304'), as Mackintosh teaches that each

embodiment is an example of its system” and “the features of Mackintosh’s invention are additive and compatible with each other.” *Id.* at 48–49, 63 (citing Ex. 1005, col. 8, ll. 18–32, col. 12, ll. 18–33, col. 21, ll. 3–9, col. 24, ll. 10–14, col. 24, ll. 5–9, col. 25, 39–49). Petitioner argues that a person of ordinary skill in the art would have been motivated to combine the relied upon disclosures, with a reasonable expectation of success, because doing so “would have been nothing more than routine design and implementation” and using the Figure 1 architecture would have eliminated “any inefficiency or delay in sending the event code (a/k/a cut code) first to the user.” *Id.* at 63–64 (citing Ex. 1003 ¶¶ 234–238).

We are persuaded by Petitioner’s analysis, as explained above and supported by the testimony of Dr. Madisetti, and notwithstanding Patent Owner’s arguments to the contrary, which we address below.

b) Patent Owner’s Arguments

Patent Owner makes various arguments disputing Petitioner’s contentions regarding the preamble of claim 11, limitation 11[d], and the combination of cited disclosures in Mackintosh. *See* PO Resp. 45–55; Sur-Reply 15–19.

(1) Preamble of Claim 11

Claim 11 recites “[a] system for correlating media content identifying data with at least one broadcast segment received by a communication device.” Ex. 1001, col. 15, ll. 30–32. Patent Owner acknowledges that Mackintosh “uses the term ‘segments’ in connection with songs, commercials, [and] promotions,” and uses “segments” “interchangeably with ‘tracks,’” but argues that Mackintosh does not teach correlation with a

“broadcast segment” because the term “segment” in Mackintosh means “simply a portion of programming,” not “a discretely identifiable portion of programming *as broadcasted*.” PO Resp. 45–46 (emphasis added) (citing Ex. 1005, col. 9, ll. 8–18 (referring to “segments that may air on the radio”); Ex. 2019 ¶ 124); Sur-Reply 15–16. According to Patent Owner, if any correlation occurs in Mackintosh, it happens when Mackintosh provides supplemental materials to the user with the broadcast materials, such that the correlation is between “media content identifying data” and “the media content itself (a song),” not between “media content identifying data” and a “broadcast segment” as recited in the claim. PO Resp. 46 (citing Ex. 2019 ¶ 125).

As explained above, we adopt Patent Owner’s proposed interpretation of “broadcast segment” as “a discretely identifiable portion of programming as broadcasted.” *See supra* Section II.B.3. We are persuaded, however, that Mackintosh teaches the preamble of claim 11 under that interpretation.

Mackintosh repeatedly refers to songs and advertisements as “segments” *of a broadcast* transmitted to a user. Mackintosh discloses that “broadcast material is delivered to the user in segments such as, for example, tracks of music, advertisements, and promotional materials in a radio broadcast,” where “supplemental materials can be coordinated with the individual segments (e.g., tracks) such that supplemental materials relating to the segments can be provided as the segments are being provided to the user.” Ex. 1005, col. 2, ll. 50–58. “[E]ach song or advertisement comprising the audio information being concurrently transmitted over signal line 506 [shown in Figure 10 above] comprises *a distinct segment*.” *Id.* at col. 21, ll. 18–21 (emphasis added); *see also id.* at col. 3, ll. 3–5 (“radio broadcast materials can include a plurality of tracks that can be streamed to

a user via the Internet”), col. 21, ll. 4–9 (the broadcaster “broadcasts a predetermined audio stream comprising a predetermined sequence of songs interspersed with one or more audio advertisements”).

The “cut code” (or “event code”)⁷ in Mackintosh is what makes each segment distinct from the other segments of the broadcast and what allows each segment to be uniquely identified. Mackintosh discloses that “[a] cut code *corresponding to and uniquely identifying a segment* from the standpoint of the radio station is transmitted over signal line 507 concurrently with the transmission of the corresponding segment over signal line 506.” *Id.* at col. 21, ll. 21–25 (emphasis added); *see also id.* at col. 3, ll. 9–13 (“tracks are provided along with program data that can indicate . . . an identification of the track . . . being broadcast *at that time*” (emphasis added)), col. 5, ll. 61–67 (similarly describing “event codes identifying the item being broadcast” and “indicating, for example, a current song being played, an advertising spot being played, or other material *in the stream of broadcast materials being broadcast*” (emphasis added)), col. 9, ll. 44–48 (similarly describing a “segment ID, analogous to the cut code, or cut

⁷ Mackintosh primarily uses the term “cut code,” but uses “event code” in a similar manner when describing embodiments shown in Figures 1 and 5. *See* Ex. 1005, col. 5, ll. 61–67 (“[D]ata from program provider 104 can include *event codes* identifying the item being broadcast to user equipment 112. *Event codes* can be codes indicating, for example, a current song being played, an advertising spot being played, or other material in the stream of broadcast materials being broadcast by program provider 104.”), col. 8, ll. 42–48 (“[T]he materials provided to broadcast Internet service provider 208 can include the actual radio broadcast from radio station 204 as well as *event codes* indicating current tracks in that broadcast, current advertising in that broadcast, or other data associated with the real time broadcast.”) (emphasis added). Unless discussing those embodiments in particular, we refer to the terms together herein.

number, and identifying the segment”), col. 21, ll. 14–18 (“identifying indicia or codes such as cut codes . . . are indicators of the audio information concurrently being transmitted over signal line 506”), claims 1 (“a segment code identifying the corresponding audio program segment”), 5 (“the segment code comprises a cut code”).

Thus, we agree with Petitioner that a broadcasted music track or advertising track in Mackintosh constitutes a “broadcast segment” because it is a discretely identifiable portion of the broadcast transmitted to the user, and Mackintosh correlates each broadcasted music track or advertising track with its associated supplemental materials (i.e., “media content identifying data”) when it retrieves and displays the supplemental materials to the user. *See* Pet. 49–52; Reply 19–20. We credit the testimony of Dr. Madisetti in that regard, as his analysis is consistent with the disclosures of Mackintosh referenced above. *See* Ex. 1003 ¶¶ 188–197; Ex. 1018 ¶¶ 71–76.

For the foregoing reasons, we find that Mackintosh teaches the preamble of claim 11.

(2) Limitation 11[d]

Limitation 11[d] recites “an electronic memory of the communication device configured to store, at a minimum, media content identifying data elements into identifying data aggregates, each identifying data aggregate associated with at least one of the plurality of media content and the at least one broadcast segment.” Ex. 1001, col. 15, ll. 44–49. As explained above, Petitioner argues that Mackintosh aggregates “each element of the ‘supplemental materials’” (i.e., artist name, album name, song name, image, and provider link) for a particular song that is broadcasted into an “identifying data aggregate” and stores the identifying data aggregate in

memory, relying in particular on Mackintosh's description of the history bar. *See* Pet. 58–60; *supra* Section II.D.2.a.

Patent Owner responds that Mackintosh does not teach storing “identifying data aggregates” where each is associated with “at least one broadcast segment.” PO Resp. 47–50 (citing Ex. 2019 ¶¶ 126–132); Sur-Reply 17–18. According to Patent Owner, the supplemental materials relied upon by Petitioner “are not associated with a specific broadcast segment.” PO Resp. 48. “For example, if the same song were broadcast twice in a session, all of the supplemental material for the first transmission/segment would be identical to the supplemental material for the second segment.” *Id.* Patent Owner further contends that “the supplemental material provided in Mackintosh's history bar merely identifies the song or advertisement, and not the broadcast segment,” and “[t]here is no showing that if the same song appeared twice in two different places in this history bar, the supplemental material for the first appearance would be identical to the supplemental material for the second appearance.” *Id.* at 49–50.

We agree with Petitioner, however, that Mackintosh teaches supplemental materials (i.e., artist name, album name, song name, image, and provider link) for a particular song that is broadcasted to the user being aggregated together and stored in memory. Mackintosh discloses a history bar that “display[s] a history of the segments or tracks of the broadcast material that were broadcast to the listener or other listeners” and “[a]llows the listener or user to retrieve supplemental information about or pertaining to a previous segment that had been broadcast.” Ex. 1005, col. 3, ll. 38–50.

Figure 7 (history window 306) and Figure 12 (history component 525) depict an exemplary history bar, shown below, with a “history” of “the most recent tracks contained within the broadcast material” in “chronological order.” *Id.* at col. 15, l. 56–col. 16, l. 18, col. 23, ll. 7–25.



The history bar of Figures 7 and 12 above shows that the last five tracks broadcasted to the user were a Fleetwood Mac song, a Sprint advertisement, a McDonalds advertisement, a Sony advertisement, and a Beatles song, with the Fleetwood Mac song being “the one that was most recently on air.” *Id.* at col. 16, ll. 11–18, col. 23, ll. 15–25. The history bar is updated to display images for the five most recent tracks as new songs and advertisements are broadcasted. *Id.* at col. 16, ll. 1–8, col. 23, ll. 24–25.

Importantly, the user can scroll through selections in the history bar (in chronological order) to retrieve information for previously broadcasted tracks. *Id.* at col. 3, ll. 60–63 (the history bar “allow[s] the user to in effect go back in time to obtain information about a segment that was played in the past”), col. 16, ll. 1–8 (the history bar “provide[s] a means for a listener to easily go back and retrieve information on past tracks”). Mackintosh discloses:

If, for example, the listener wanted to obtain additional information about the Beatles selection that was being played, the user may simply click on the Beatles window and that information can be displayed on data window 302. . . .

. . . [W]ith the history information pulled up, in one embodiment, the user can access all of the information that he or she could have accessed via the various buttons and selections when the selection was originally being played. Thus, even if the user did

not take the opportunity to check on concert information or album information or to order an album when the song was originally played, the user can go back via the history bar and take the opportunity to do so at this time.

Id. at col. 16, ll. 18–32, col. 16, l. 65–col. 17, l. 36 (describing the advantages of allowing the user to “go back and retrieve information pertaining to” a previously broadcasted song or advertisement). Mackintosh further teaches that all of the supplemental materials for a previously broadcasted track are stored in memory, such that when a particular track is selected by the user, the aggregated supplemental materials for that track would be retrieved from memory and displayed. *See id.* at col. 3, ll. 51–54 (“any . . . supplemental information that was retrieved during initial playing of the subject track can be saved locally, for example in a circular type buffer”), col. 16, ll. 25–28 (the user can access “all” of the information displayed when the track was initially played), 38–41 (“all of the information previously retrieved when [a] track was initially played can be stored locally such that the information does not have to be re-retrieved when a history selection is made”), col. 20, l. 65–col. 21, l. 1 (“all of the supplemental materials previously retrieved for [a] track can be stored locally and associated with the item in the history window”), col. 24, ll. 30–35.

We disagree with Patent Owner’s view that if a song were played twice during a session, the supplemental materials for the two occurrences would be identical (and, therefore, they are not associated with a particular “broadcast segment”). *See* PO Resp. 48–50. As Petitioner and Dr. Madisetti correctly point out, Mackintosh describes the use of cut codes to organize the history bar into a chronological order of tracks, and a cut code “correspond[s] to and uniquely identif[ies] a segment.” *See* Ex. 1005,

col. 15, ll. 56–67, col. 21, ll. 18–25; Reply 22–23; Ex. 1018 ¶¶ 83–84. Further, although Mackintosh does not describe a scenario in which tracks (e.g., the McDonalds advertisement shown in Figures 7 and 12) are played multiple times, a person of ordinary skill in the art would have understood the reference’s disclosure to mean that (1) the image would be displayed multiple times in the history bar corresponding to when it was played in relation to the other tracks, and (2) each occurrence would have its own supplemental materials that could be retrieved from memory when selected by the user. *See* Ex. 1018 ¶¶ 85–86. Mackintosh repeatedly describes the history bar as presenting a “chronological order” of previously broadcasted tracks, and that chronology would be inaccurate if Patent Owner’s view were correct. *See* Ex. 1005, col. 3, ll. 38–64, col. 15, ll. 56–67, col. 16, ll. 11–16, col. 23, ll. 7–10; Sur-Reply 18 (acknowledging that “Mackintosh’s history bar display shows the order in which the ‘supplemental materials’ were received”).

Patent Owner also argues that, as described in the Specification of the ’307 patent, media content identifying data elements for a particular “broadcast segment” are aggregated together for the purpose of “data mining” and selling such information to “interested parties such as trade publications and record companies.” PO Resp. 18, 49 (citing Ex. 2019 ¶¶ 52–56, 130); Sur-Reply 6–8. According to Patent Owner, though, “Mackintosh does not seek to address this objective and therefore has no need to aggregate data associated with discretely identifiable portions of programming as broadcasted.” PO Resp. 49. We disagree. Patent Owner describes such data mining as a mere “purpose” or “objective” of data aggregation. *Id.* at 18, 49; Sur-Reply 6. There is no *requirement* in the language of claim 11, or our interpretation of “broadcast segment,” that the

aggregation recited in limitation 11[d] be used for data mining and selling information to interested parties. Indeed, the portions of the Specification relied upon by Patent Owner do not even use the term “broadcast segment,” and refer to aggregation of “sale” information (i.e., when the user purchases a song), which is not recited in claim 11. *See* Ex. 1001, col. 3, ll. 10–16, 52–55, col. 9, ll. 34–37; Ex. 1018 ¶ 26. Further, even if data mining were relevant, Mackintosh describes a similar objective to the ’307 patent. Mackintosh discloses that “supplemental materials,” including “advertising information,” can be “provided to the user during particular segments of the broadcast material,” where the information is “coordinated with the particular segments of the broadcast material such that the value of the advertising is enhanced.” Ex. 1005, col. 2, ll. 59–67. In other words, there is financial value in the correlation between the particular broadcast segments and associated supplemental materials in Mackintosh.

For the foregoing reasons, we find that Mackintosh teaches limitation 11[d].

(3) Obviousness Arguments

Patent Owner makes a number of arguments disputing Petitioner’s reasoning regarding the combined disclosures of Mackintosh. PO Resp. 50–55. First, Patent Owner asserts that Petitioner’s position is that it would have been obvious to combine “any” two embodiments of Mackintosh, and “[o]ne counter-example” is that the embodiments of Figures 1 and 3 are incompatible. *Id.* at 50–51 (citing Ex. 2019 ¶ 134). We disagree. As explained above, Petitioner points to specific disclosures in Mackintosh and explains how and why an ordinary skilled artisan would have combined those disclosures, and does not rely on Figure 3 at all. *See* Pet. 48–49,

63–64; Reply 24; *supra* Section II.D.2.a. We rely only on the specific embodiments cited by Petitioner in evaluating whether Petitioner has met its burden.

Second, Patent Owner argues that Petitioner fails to show why a person of ordinary skill in the art would have understood that the alleged “data stream comprising . . . media content identifying data” in Mackintosh (i.e., the stream of data with the supplemental materials) “would come from ‘data server 116’ in Petitioner’s proposed modification combining [Figures 1 and 10] when Mackintosh clearly teaches that ‘signal line 507’ [in Figure 10] already includes the media content identifying data necessary to embody Mackintosh’s invention.” PO Resp. 51–53 (citing Ex. 1005, col. 21, ll. 13–18; Ex. 2019 ¶¶ 135–138); Sur-Reply 18.

Patent Owner, however, mischaracterizes Petitioner’s arguments. Petitioner’s theory is premised on a person of ordinary skill in the art *starting* with the exemplary architecture of Figure 1 and using Mackintosh’s exemplary computer system operating the software “player” as the receiving user’s computer in that architecture. *See* Pet. 48–49, 63–64; Reply 23. In the architecture of Figure 1, program provider 104 provides “event codes” (also referred to as “cut codes”) identifying what is currently being broadcasted to data server 116. Ex. 1005, col. 5, ll. 38–43, 61–67, col. 6, ll. 36–44. Data server 116 uses the information sent by program provider 104 to retrieve the supplemental materials, which it provides to user equipment 112. *Id.* at col. 5, l. 52–col. 6, l. 4, col. 6, ll. 56–59. User equipment 112 has a “player” to play the broadcast and supplemental materials to the user. *Id.* at col. 7, ll. 41–45. Mackintosh later discloses, when focusing on the software “player” for purposes of Figures 10–12, that on-air system 501 provides to player 510—via encoder 503 and broadcast

server 509—audio information (using signal line 506) and “identifying indicia or codes such as cut codes” (using signal line 507), which “are indicators of the audio information concurrently being transmitted.” *Id.* at col. 21, ll. 11–18, 47–48, 60–64. “[E]ach song or advertisement comprising the audio information being concurrently transmitted . . . comprises a distinct segment,” and a cut code “correspond[s] to and uniquely identif[ies] a segment from the standpoint of the radio station.” *Id.* at col. 21, ll. 18–25. Player 510 “detect[s] the presence of a cut code in the merged stream, and responsive to detecting the presence of a cut code identifying a song, signal[s]” server 511 to retrieve supplemental materials for the broadcasted song. *Id.* at col. 22, ll. 1–60. Thus, in Mackintosh, data server 116 receives and uses “cut codes” (or “event codes”), and a “more specific example implementation” of Mackintosh’s invention described later in the reference transmits such codes to a user’s computer for retrieving supplemental materials. *See id.* at col. 5, l. 52–col. 6, l. 4, col. 6, ll. 56–59, col. 21, ll. 3–18.

We agree with Petitioner that based on these disclosures, a person of ordinary skill in the art would have been motivated to “implement the transmission architecture shown in [F]igure 1 through ‘computer system 702’ and its player software (‘player 510’) that are described in more detail later in” the Specification. *See* Pet. 48–49, 63–64; Reply 24–25.

Dr. Madisetti explains a specific reason why it would have been obvious to use the Figure 1 architecture in that way:

For example, any inefficiency or delay in sending the event code (a/k/a cut code) first to the user is eliminated using the [F]igure 1 architecture—because, in the [F]igure 1 architecture, the event code (a/k/a cut code) is sent directly to the server (without the user as an intermediary). This combination could also enhance

the resiliency of the bandwidth by using a wireless link to the server.

Ex. 1003 ¶ 236 (citations omitted). We credit Dr. Madiseti's testimony, which is consistent with the disclosure of Mackintosh. *See* Ex. 1003 ¶¶ 184–187, 234–237; Ex. 1018 ¶ 87.

Third, Patent Owner argues that a person of ordinary skill in the art would not have been motivated to combine the relied upon embodiments of Mackintosh, or had a reasonable expectation of success in doing so, because in Figure 1, “the ‘data server 116’ *pushes* data to the ‘user 112’ whereas in [Figure 10], the ‘player 510’ *pulls* data from the ‘support server 511.’” PO Resp. 53–55 (citing Ex. 1005, col. 5, ll. 43–63, col. 22, ll. 1–4; Ex. 2019 ¶¶ 139–142); Sur-Reply 19.

We disagree. Mackintosh discloses an overall system for providing broadcast and supplemental materials to a user, then describes more specific examples with different features that can be included in that system. *See* Pet. 48–49, 63; Ex. 1005, col. 8, ll. 18–32 (“Having thus *generally described* a system and method for coordinating supplemental information with broadcast material provided to user equipment 112, a *specific application of this generalized system* is now described.” (emphasis added)), col. 12, ll. 18–34 (“one example player is now described in order to illustrate the features and functionality that can be provided or included”), col. 19, ll. 1–7 (stating that the “player” of Figure 7 (similar to that of Figure 12) “can be used with other architectures, including those architectures illustrated in [Figures 1–4]”), 55–61, col. 21, ll. 3–4 (noting that “[a] more specific example implementation is . . . described with reference to” Figures 10–12), col. 24, ll. 5–9 (“The above specific example [of Figures 10–12] is provided by way of example only, and it should be appreciated that other

environments are possible allowing beneficial employment of the subject invention, including *the more generic examples* described [for Figures 1–9].” (emphasis added)). Thus, there is ample support in Mackintosh for Petitioner’s position that the relied upon features in the cited examples are “additive and compatible with each other.” *See* Pet. 63.

We also see no reason why it would have been beyond the level of ordinary skill to implement a system in which the user’s computer receives data in either fashion—either in a “pull” scenario (i.e., by first requesting the data and then receiving it) or a “push” (i.e., receiving the data without first transmitting a request for it). *See supra* Section II.A. The computer receives the data in either case, and Mackintosh contemplates both types of data reception. *See* Ex. 1005, col. 6, l. 45–col. 7, l. 45, col. 21, ll. 14–25, col. 22, ll. 1–60, Fig. 2 (showing supplemental materials provided to the user equipment directly by the data server (steps 136–140) or by a different server after the user equipment makes a request (steps 142–146)); Reply 25; Ex. 1018 ¶ 93.

Petitioner has persuasively shown that Mackintosh teaches the limitations of claim 11 in its various embodiments and a person of ordinary skill in the art would have been motivated to combine Mackintosh’s disclosures in the manner asserted.

c) Conclusion

Petitioner has shown sufficiently that a person of ordinary skill in the art would have understood Mackintosh to teach all of the limitations of claim 11 and a person of ordinary skill in the art would have been motivated to combine specific disclosures from the reference to arrive at the system of claim 11 with a reasonable expectation of success. *See* Pet. 48–64; Ex. 1003

¶¶ 183–238. Petitioner has proven, by a preponderance of the evidence, that claim 11 would have been obvious based on Mackintosh under 35 U.S.C. § 103(a).

3. *Claim 16*

Claim 16 depends from claim 11 and recites that “the data stream further comprises data that enables a unique identification of the at least one broadcast segment.” Ex. 1001, col. 16, ll. 38–40. Petitioner argues that (1) program provider 104 in Figure 1 provides “event codes” to data server 116 so that it can retrieve supplemental materials, and (2) a “cut code” is a more specific example of an “event code” “sent directly to the user, so that the user can query a database on a server for information,” as shown in Figure 10. Pet. 71. Thus, according to Petitioner and Dr. Madisetti, a person of ordinary skill in the art “would have understood that the ‘event code’ or ‘cut code’ of Mackintosh would (i) enable a unique identification of the at least one broadcast segment and (ii) allow access to a database on a server to retrieve data related to the broadcast.” *Id.* at 71–72 (citing Ex. 1003 ¶ 261).

Petitioner further contends that although Mackintosh does not disclose program provider 104 in Figure 1 sending the “event codes” directly to user equipment 112, Mackintosh does disclose data server 116 providing “identification information” to user equipment 112 so that the device can retrieve supplemental materials from material server 120. *Id.* at 72–73 (citing Ex. 1005, col. 6, ll. 5–19). Petitioner argues:

As Mackintosh discloses that the supplemental materials related to a broadcast could broadly include “audio, video, image, data, or other information,” a [person of ordinary skill in the art] would have understood that, *e.g.*, a music video of the

song being broadcast could be stored in “database 122” of “material server 120.” In order to access the music video, the user would need some “identification information”; given that Mackintosh suggests that the additional material could be in multiple databases, it would have been logical to a [person of ordinary skill in the art] to use a uniquely identifying piece of information, such as the “event code” or “cut code” corresponding to the broadcast segment. Thus, a [person of ordinary skill in the art] would have been motivated to modify the invention of Mackintosh to have the “data server 116” forward the “event code” or “cut code” to user equipment 112—specifically, so that the user can obtain additional information from other servers. In terms of additional motivation to modify Mackintosh, . . . Mackintosh generally discloses various additional information that the user may desire to obtain (*e.g.*, web-based images, videos, audio clips, text files, HTML files, or other data or information) available from various servers and databases.

And, a [person of ordinary skill in the art] would have (i) found implementation to be a simple design choice for an “event code” to be included with the “supplemental materials” that “data server 116” sends to the user, as well as (ii) had a reasonable expectation of success in doing so, because it would have been trivial from a technical perspective to include another data element (*i.e.*, the event code) in the data stream that “server 116” already sends to the user. Mackintosh already teaches that the user’s computer is in communication with “server 116”; thus, a [person of ordinary skill in the art] would have understood that there would be no difficulty in sending additional information between devices that are already in communication. And, a [person of ordinary skill in the art] would have found there to be no need for undue experimentation to implement this change within the context of an existing message and protocol—it would be trivial.

Id. at 73–75 (citations omitted); *see* Ex. 1003 ¶¶ 264–267.

Patent Owner makes three arguments in response. First, Patent Owner asserts that “Mackintosh’s ‘cut code’ and ‘event code’ do not uniquely identify a *broadcast segment*.” PO Resp. 56–61 (citing Ex. 2019

¶¶ 147–153); Sur-Reply 19–20. According to Patent Owner, “the examples of retrieved data related to the broadcast that Petitioner cites in Mackintosh are related to ‘media content’ but not a particular ‘broadcast segment’ through which such media content would be received by a receiver.”

PO Resp. 57. Patent Owner argues that Mackintosh’s “cut code would identify the media content in the broadcast stream,” but “more information would be needed for unique identification of the broadcast segment,” for example, when the same media content is broadcasted more than once. *Id.* at 57–58. Patent Owner further cites Mackintosh’s statement that the “player” “detect[s] the presence of a cut code identifying a song” (not a “broadcast segment”) and the fact that Figure 12 displays generic images for different advertisers (i.e., Sprint, McDonalds, and Sony), not specific advertisements from those entities. *Id.* at 58–60 (citing Ex. 1005, col. 22, ll. 1–4). And, according to Patent Owner, Mackintosh’s “cut code” cannot even identify a song by itself, as it must be combined with the “station ID” to do so. *Id.* at 60 (citing Ex. 1005, col. 22, ll. 13–22).

These arguments largely mirror Patent Owner’s earlier assertion that Mackintosh does not teach a “broadcast segment.” *See id.* at 56–60. We find that Mackintosh teaches a “broadcast segment” for the reasons explained above. *See supra* Section II.D.2.b.(1). Mackintosh expressly states that each song or advertisement being broadcasted “comprises a distinct segment” and “[a] cut code correspond[s] to and uniquely identif[ies] a segment from the standpoint of the radio station.” Ex. 1005, col. 2, ll. 50–58, col. 21, ll. 18–25. Contrary to Patent Owner’s assertions, more information would *not* be needed to identify a segment of the broadcast—the cut code by itself is sufficient to uniquely identify the segment and distinguish it from others in the broadcast. That a cut code *also*

can identify the song or advertisement itself, or can be used in conjunction with a station ID, does not negate the clear teaching in Mackintosh that a cut code uniquely identifies a “segment” of a broadcast. *See* Ex. 1018 ¶¶ 95–97.

Second, claim 16 recites that the “data stream” comprises both “media content identifying data” and “data that enables a unique identification of the at least one broadcast segment.” Petitioner identifies Mackintosh’s supplemental materials and “cut code” as the two instances of data.

Pet. 54–55, 71–72. Patent Owner argues that Mackintosh does not teach the “cut code” being sent in the same data stream as the supplemental materials. PO Resp. 61–65 (citing Ex. 2019 ¶¶ 154–160). Patent Owner asserts that there is no disclosure of a “cut code” (or “event code”) being sent by data server 116 to user equipment 112 in the embodiment of Figure 1. *Id.* at 62–63. And in an alternate embodiment of Figure 1 in which supplemental materials are not available from data server 116, data server 116 sends “locational or other identification information *about* the supplemental materials” to user equipment 112 to allow the device to retrieve the materials from material server 120. *Id.* at 64 (citing Ex. 1005, col. 7, ll. 11–13) (emphasis added). According to Patent Owner, though, that information only identifies the supplemental materials or their location; it does not enable a unique identification of a “broadcast segment” as recited in claim 16, and Petitioner does not explain why a “cut code” (or “event code”) would be sent in its place. *Id.* at 64–65. Patent Owner further argues that Mackintosh does not disclose “any benefit or advantage for using an ‘event code’ or ‘cut code’ that uniquely identifies a broadcast segment.” *Id.* at 69.

Patent Owner’s arguments do not address the obviousness theory asserted in the Petition. Petitioner’s theory regarding claim 16 is that a person of ordinary skill in the art would have been motivated to *modify* the

architecture of Figure 1 to have data server 116 forward a “cut code” (or “event code”) to the user’s computer. Pet. 73–74. Petitioner explains why there would be a motivation to send a “cut code” (or “event code”)—it would provide the advantage of allowing “the user [to] obtain additional information from other servers,” such as “a music video of the song being broadcast.” *Id.* With that modification, data server 116 would send a “data stream” comprising both the supplemental materials and the “cut code” (or “event code”), as recited in claim 16, allowing the user’s computer to display the supplemental materials for the song currently being broadcasted and retrieve additional information as well. *See id.*

Third, Patent Owner argues that a person of ordinary skill in the art would not have been motivated to modify Mackintosh to achieve the limitation of claim 16. PO Resp. 65–69 (citing Ex. 2019 ¶¶ 161–170). Patent Owner contends that “Mackintosh does not contemplate or suggest that the supplemental material may be split and located at different databases or data servers,” as contemplated by Petitioner’s music video example in the Petition. *Id.* at 66–67; Sur-Reply 21–22. We disagree. Mackintosh broadly describes “supplemental materials” for a broadcasted track being, “for example, audio, video, image, data, or other information.” Ex. 1005, col. 6, ll. 53–55; *see also id.* at col. 10, ll. 50–54 (describing “web-based images, videos, audio clips, text files, HTML files, or other data or information”). And Mackintosh at minimum suggests that such information may be obtained from multiple different sources. For example, as shown in Figure 1, supplemental materials may be stored in “one or more” data storage databases 118 (and sent by data server 116), but need not “necessarily” be stored there—supplemental materials also could be stored in “one or more” external databases 122 (and sent by “one or more” material

servers 120). *See, e.g., id.* at col. 3, ll. 21–33 (“When the user’s terminal receives a track to be played, the user’s terminal takes the program data associated with that track and uses that data to access *one or more servers* to retrieve the supplemental information.” (emphasis added)), 54–56 (“one or more servers”), col. 5, l. 52–col. 6, l. 19, col. 7, ll. 8–23, col. 8, ll. 24–26 (“one or more servers”). Mackintosh’s “cut code” (or “event code”) provides a convenient mechanism to access such information from different sources. *See* Ex. 1018 ¶¶ 100–102.

Patent Owner next argues that a person of ordinary skill in the art “would have understood that Mackintosh’s invention would only need the ‘identifying piece of information’ to identify the song in order to access its music video,” not to identify a “broadcast segment,” and the examples cited by Petitioner describe “supplemental” information as pertaining to “material,” not a “broadcast segment.” PO Resp. 67–68. Again, we disagree with Patent Owner’s reading of Mackintosh, and conclude that Mackintosh teaches a “broadcast segment” and “cut code” (or “event code”) that uniquely identifies a “broadcast segment” for the reasons explained above. *See supra* Section II.D.2.b.

Finally, Patent Owner argues that “Mackintosh describes using location or other identification information about the supplemental materials to locate where they are housed and provide them to the user,” and a person of ordinary skill in the art “would see no reason to modify Mackintosh to send ‘cut codes’ or ‘event codes’ in place of the locational information where the intent of Mackintosh to locate and provide supplemental materials to the user is readily met with the locational information already provided in the system.” PO Resp. 68–69. In Petitioner’s proposed modification, however, the “cut code” (or “event code”) is an example of—not a substitute

for—the “identification information” referenced in Mackintosh. *See* Reply 27–28. Data server 116 can provide to the user’s computer some supplemental materials (e.g., artist name, song name) for display and a “cut code” (or “event code”) that allows the user to retrieve additional information about the broadcasted song (e.g., a music video). *See* Pet. 73–74. The benefit of doing so is the ability to obtain additional information that might be stored in a different location. *See id.*; Reply 27–28.

We find that Mackintosh renders obvious the limitation that “the data stream further comprises data that enables a unique identification of the at least one broadcast segment,” as recited in claim 16, for the reasons stated by Petitioner. *See* Pet. 71–75. Petitioner’s arguments are supported by the testimony of Dr. Madisetti, which we credit. *See* Ex. 1003 ¶¶ 257–268; Ex. 1018 ¶¶ 94–103. Petitioner has proven, by a preponderance of the evidence, that claim 16 would have been obvious based on Mackintosh under 35 U.S.C. § 103(a).

4. Claims 15, 17, and 18

Claim 15 depends from claim 11 and recites that

the association of the data stream with the broadcast stream is at least one of the following: the data stream is frequency multiplexed with the broadcast stream, the data stream is time multiplexed with the broadcast stream, the data stream is transmitted independently from the broadcast stream, the data stream is encoded in the broadcast stream.

Ex. 1001, col. 16, ll. 31–37. Petitioner argues that “the association of the data stream with the broadcast stream” in Mackintosh is “the data stream [being] transmitted independently from the broadcast stream” because, as shown in Figure 1, the radio broadcast is transmitted from broadcast

provider 108 to user equipment 112, whereas the supplemental materials are transmitted from data server 116 to user equipment 112, and an “association” between the two exists because the supplemental materials “relate to the broadcast.” Pet. 64–65 (citing Ex. 1005, col. 5, ll. 51–56) (emphasis omitted).

Claim 17 depends from claim 11 and recites that the system further comprises “an input configured to detect a selection of the at least one broadcast segment; and a transmitter configured to communicate the data packet comprising at least one of the media content identifying elements to a server.”⁸ Ex. 1001, col. 16, ll. 41–46. Petitioner argues that Mackintosh teaches the recited “input” (i.e., a computer with a touch-screen, mouse, or keyboard to select previously played songs shown in a player interface) and “transmitter” (i.e., communications interface 724 of computer system 702) that communicates a data packet comprising a “media content identifying element[]” (i.e., a provider link, which may include, for example, a domain name and Amazon Standard Identification Number (ASIN#) corresponding to a particular item) to a “server” (i.e., fulfillment provider server 512) when the user clicks the “Buy Now” button (shown in Figure 12 above). Pet. 65–69 (citing Ex. 1005, col. 23, ll. 26–33).

Claim 18 depends from claim 11 and recites that the system further comprises “an input configured to detect a selection associated with the presentation of the stored data.” Ex. 1001, col. 16, ll. 47–49. Petitioner argues that Mackintosh teaches the recited “input” (i.e., a computer with a touch-screen, mouse, or keyboard) that detects a user selection of a

⁸ We agree with the parties that “the data packet” in claim 17 should be read to mean “a data packet.” See Pet. 13, 66; PO Resp. 44 n.1.

particular song in the list of previously played songs shown in the player interface. Pet. 69–71 (citing Ex. 1005, col. 16, ll. 9–32).

Patent Owner does not argue separately dependent claims 15, 17, and 18. *See* PO Resp. 55; Sur-Reply 15. We disagree with Patent Owner’s arguments regarding parent claim 11 for the reasons explained above. *See supra* Section II.D.2. We have reviewed Petitioner’s contentions and supporting evidence, including the testimony of Dr. Madisetti, and are persuaded that Petitioner has proven, by a preponderance of the evidence, that claims 15, 17, and 18 would have been obvious based on Mackintosh under 35 U.S.C. § 103(a), for the reasons stated by Petitioner. *See* Pet. 64–71; Ex. 1003 ¶¶ 239–256.

E. Asserted Grounds Based on Takahisa (Claims 11 and 15–18)

Petitioner contends that claims 11, 15, 16, and 18 are anticipated by Takahisa under 35 U.S.C. § 102(b) and claim 17 is unpatentable over Takahisa under 35 U.S.C. § 103(a). Pet. 22–48. As explained above, we conclude that claims 11 and 15–18 are unpatentable over Mackintosh. *See supra* Section II.D. As such, we need not address Petitioner’s alternative grounds based on Takahisa. *See Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. Apr. 30, 2020) (non-precedential) (recognizing that “the Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. CONCLUSION⁹

Petitioner has demonstrated, by a preponderance of the evidence, that claims 11 and 15–18 of the '307 patent are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
11, 15–18	103(a)	Mackintosh	11, 15–18	
11, 15, 16, 18	102(b)	Takahisa ¹⁰		
17	103(a)	Takahisa ¹¹		
Overall Outcome			11, 15–18	

⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), 42.8(b)(2).

¹⁰ As explained above, given our disposition of the ground based on Mackintosh, we do not reach Petitioner's alternative anticipation ground based on Takahisa. See *supra* Section II.E.

¹¹ As explained above, given our disposition of the ground based on Mackintosh, we do not reach Petitioner's alternative obviousness ground based on Takahisa. See *supra* Section II.E.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 11 and 15–18 of the '307 patent have been shown to be unpatentable.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2021-00712
Patent 8,903,307 B2

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