

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC.,
Petitioner,

v.

CUSTOMPLAY, LLC,
Patent Owner.

IPR2018-01496
Patent 8,494,346 B2

Before J. JOHN LEE, JESSICA C. KAISER, and JOHN R. KENNY,
Administrative Patent Judges.

LEE, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Motion to Exclude
35 U.S.C. § 318(a)

INTRODUCTION

Amazon.com, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 4–6 and 10–20 (“the challenged claims”) of U.S. Patent No. 8,494,346 B2 (Ex. 1001, “the ’346 Patent”). An *inter partes* review of all challenged claims was instituted on March 7, 2019. Paper 12 (“Inst. Dec.”). After institution, CustomPlay, LLC (“Patent Owner”) filed a Patent Owner Response (Paper 16, “PO Resp.”), Petitioner filed a Reply (Paper 19, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 22, “PO Sur-reply”). Patent Owner also filed a Motion to Exclude (Paper 24) that remains pending, which is addressed below. An oral hearing was held on December 18, 2019. Paper 33 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). As explained below, Petitioner has shown by a preponderance of the evidence that all challenged claims of the ’346 Patent are unpatentable.

A. *Related Case*

The parties identify as related to the present case *CustomPlay, LLC v. Amazon.com, Inc.*, Case No. 9:17-cv-80884 (S.D. Fla.). Pet. 1; Paper 4, 1.

B. *The ’346 Patent*

The ’346 Patent relates to providing information to a user regarding a performer in a video during playback of that video. Ex. 1001, 1:61–64. In accordance with the claimed invention, as shown in Figure 1B (reproduced below), performers appearing in a movie scene may be identified.

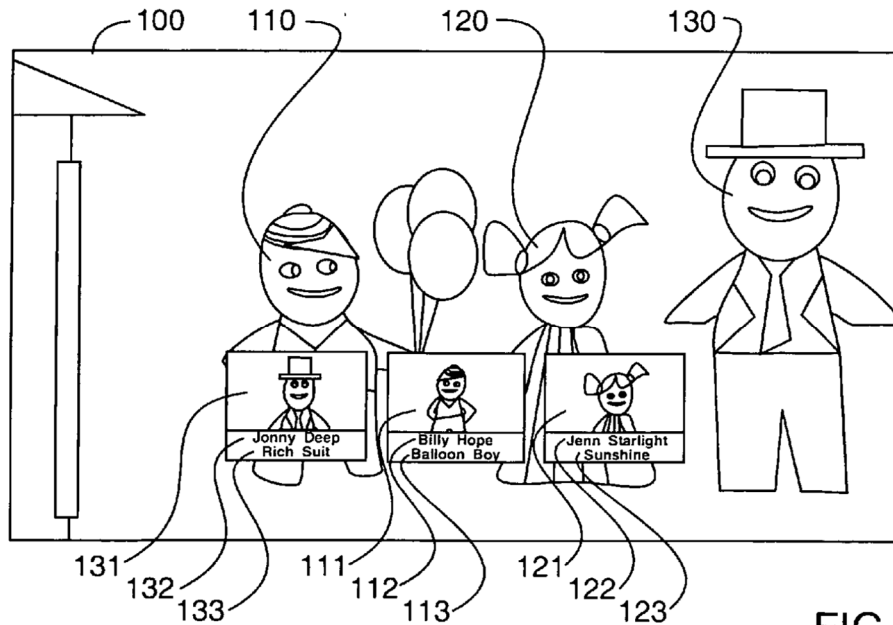


FIG. 1B

Ex. 1001, Fig. 1B. Figure 1B depicts an embodiment of the claimed invention wherein a “video frame within a motion picture” is presented, which includes characters 110, 120, and 130. *Id.* at 6:29–33.

“[S]uperimposed on that frame of video are a visual depiction of each of the characters and corresponding performer’s and character’s name.” *Id.* at 6:34–36. For example, character 110 is identified as “Balloon Boy” (113), the performer playing that role is identified as “Billy Hope” (112), and image 111 of the performer is shown along with the names. *Id.* at Fig. 1B, 6:39–43. The image may be provided, for example, by downloading it from a website via a link. *Id.* at 6:48–51.

The performer and character information may continue to be provided even when a performer no longer appears on the screen at a later point in the same clip within the motion picture. *Id.* at 7:42–53, Fig. 1E. This is accomplished by basing the presentation of information on specifications of clips rather than “precise video frame specific information.” *Id.* at 7:48–56.

According to the Specification, such an embodiment is advantageous because it “does not require the user to pause the playing of the video at a video frame depicting the character of interest since it is not dependent on the actual contemporaneous onscreen presence of that character.” *Id.* at 7:56–60. Alternatively, performer information may be presented based on specific frames (rather than clips)—a “frame accurate mapping”—to “support a continuous display of identification information contemporaneously with the playing of the video,” such that the information presentation is “continuously activated and updated while the video is playing.” *Id.* at 8:15–21.

C. Challenged Claims

Petitioner challenges claims 4–6 and 10–20 of the ’346 Patent. Claim 10 is illustrative and is reproduced below:

10. An apparatus capable of processing data, the data comprising: (i) a name of a performer of a character depicted within a video frame of a video; and (ii) a reference to a visual depiction of the performer of the depicted character; the apparatus performs the steps of:

receiving, from a user, during a playing of a video, a request for information for identifying a performer of a character that is depicted during the playing of the video;

identifying a current location in the video;

identifying a name of a performer associated with the identified location;

retrieving, responsive to the reference, a visual depiction of the performer; and

providing, the user, the identified name of the performer, and the visual depiction of the performer.

D. Instituted Grounds of Unpatentability and Asserted Prior Art

Trial was instituted on the following grounds of unpatentability¹ asserted in the Petition:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
4–6, 10–20	103(a)	Thomas ²
4–6, 10–20	103(a)	Thomas, McIntire ³
4–6, 10–20	103(a)	McIntire, Thomas
4–6, 10–12, 14–19	103(a)	Reimer, ⁴ McIntire
13, 20	103(a)	Reimer, McIntire, Thomas
4–6, 10–20	103(a)	Clarke, ⁵ Reimer

Inst. Dec. 44–45. The parties dispute whether Clarke qualifies as prior art under 35 U.S.C. § 102(e). *See* Pet. 13; PO Resp. 51–52; Pet. Reply 3–4; PO Sur-reply 6–7.

Petitioner also relies on two declarations by its proffered expert witness, Dr. Alan C. Bovik (Ex. 1002; Ex. 1102). Likewise, Patent Owner

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the application from which the ’346 Patent issued was filed before March 16, 2013, the effective date of the relevant amendments, the pre-AIA versions of §§ 102 and 103 apply.

² U.S. Patent Application Publication No. 2002/0042920 A1, published Apr. 11, 2002 (Ex. 1003, “Thomas”).

³ U.S. Patent Application Publication No. 2007/0250901 A1, published Oct. 25, 2007 (Ex. 1004, “McIntire”).

⁴ U.S. Patent No. 5,696,905, issued Dec. 9, 1997 (Ex. 1005, “Reimer”).

⁵ U.S. Patent No. 9,762,967 B2, filed June 14, 2012, issued Sep. 12, 2017 (Ex. 1006, “Clarke”).

relies on a declaration by its own proffered expert witness, Dr. Clifford Reader (Ex. 2021).

ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art would have had a bachelor's degree in electrical engineering, computer engineering, or computer science, as well as three years of experience in the design of digital video systems. Pet. 10–11 (citing Ex. 1002 ¶¶ 24–26). Patent Owner does not dispute Petitioner's formulation of the level of ordinary skill in the art. Based on the information and testimony presented in the Petition, we adopt Petitioner's formulation.

B. Claim Construction

For petitions filed before November 13, 2018, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2018); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Petitioner contends no express claim constructions are necessary to resolve the issues presented in the Petition. Pet. 11. Patent Owner contends the inventor acted as his own lexicographer in presenting a number of definitions in the Specification of the '346 Patent, and asserts that these definitions should be used in this proceeding. PO Resp. 16. We determine that no claim terms of the challenged claims in the '346 Patent require express construction. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim

terms in controversy require express construction, and only to the extent necessary to resolve the controversy).

C. Alleged Unpatentability Under § 103(a)

A claim is unpatentable under § 103 if the differences between the claimed subject matter 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. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); see *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

1. Secondary Considerations of Non-Obviousness

Neither party presents any evidence or argument regarding secondary considerations of non-obviousness relating to any challenged claim. Thus, we do not address any such considerations in this Decision.

2. *Obviousness Based on Thomas*

Petitioner asserts that all challenged claims would have been obvious over Thomas. Pet. 14–28. Thomas discloses “systems and methods for supplementing on-demand media,” such as “video-on-demand.” Ex. 1003 ¶¶ 5–6. The supplementation could include displaying text, graphics, video, or other supplemental content—for example, “actor interviews”—in an overlay over the on-demand media. *Id.* ¶¶ 6–7. The supplemental content can be triggered when “the user first accesses a segment of on-demand media (e.g., a scene in a movie),” or “in response to the user’s request (e.g., selecting an on-screen button).” *Id.* ¶ 7.

a. *Independent Claim 10*

According to Petitioner (Pet. 14–17), Thomas teaches an apparatus capable of processing data that comprises a performer name and a reference to a visual depiction of that performer, as recited in claim 10, in its disclosure of a system that overlays a “pop-up window” on top of a video that can display supplemental content such as “the names of the characters or actors” in the scene or “actor interviews.” *See* Ex. 1003 ¶¶ 98–102. This content, or links to such content, may be provided via “synchronous metadata.” *Id.* ¶ 44. Patent Owner does not dispute that Thomas teaches these aspects of claim 10.⁶ Based on the evidence and arguments in the Petition, we find that Thomas teaches these claim elements.

⁶ Patent Owner takes issue (PO Resp. 26–27) with the statement in the Petition that “[i]ncluding a performer’s name in data” was “well-known by those of ordinary skill” (Pet. 15–16). We address Patent Owner’s position in more detail below in conjunction with a related limitation, but note here that

Petitioner asserts Thomas teaches receiving a user's request for information identifying a performer in a video, as recited in claim 10, in its descriptions of "'Actor Interviews' button 906" and "'Cast Info' button 908." Pet. 17–18 (citing Ex. 1003 ¶¶ 98, 102). In both instances, Thomas discloses that "[i]n response to a user selecting" the button, the system provides supplemental content relating to an actor or actors that "the user is currently watching"—i.e., actor interviews or actor information (such as his/her name), respectively. Ex. 1003 ¶¶ 98, 102. Patent Owner does not dispute that Thomas teaches these limitations. Based on the evidence and arguments in the Petition, we find that Thomas teaches these elements of claim 10.

With respect to the limitation of "identifying a current location in the video," Petitioner notes that Thomas discloses providing supplemental content relating to actors "the user is currently watching" and relating the content to "the current portion" of the video, arguing a person of ordinary skill would have understood this as teaching the limitation. Pet. 18 (quoting Ex. 1003 ¶¶ 100, 102). Petitioner further argues that even if Thomas does not explicitly teach this limitation, "it is inherent" and "[a]lternatively, this would have been obvious because it was widely known to those of ordinary skill." *Id.* at 18 (citing Ex. 1002 ¶¶ 60–61). Patent Owner argues, however, that Petitioner's showing is inadequate. *See* PO Resp. 22–26; PO Sur-Reply 22–24. Considering both parties' arguments and the complete record after

Patent Owner does not dispute that Thomas teaches the name of a performer in a video and an apparatus that is "capable of processing" that data.

trial, we agree with Petitioner and find that Thomas explicitly teaches this limitation of claim 10.

More specifically, Patent Owner first argues that the existence of Petitioner’s alternative argument based on inherency “tacitly acknowledges” a failing in Petitioner’s primary arguments. PO Resp. 22. We decline to infer that an argument fails merely because Petitioner put forth an alternative argument, particularly because the two arguments in question are not inconsistent or incompatible—it is entirely possible for a reference to both explicitly teach a claim element *and* disclose it inherently at the same time. Indeed, such a circumstance would be consistent with the maxim that anticipation (such as by inherent disclosure) is the “epitome of obviousness.” *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019).

Patent Owner next argues that Thomas does not disclose identifying a current location in a video because the system in Thomas has no need to do so due to its “synchronous” nature. PO Resp. 23–24; PO Sur-reply 22–23. In essence, Patent Owner contends Thomas discloses that supplemental content is provided in a “synchronous” manner, which makes identifying the current location in a video unnecessary because the corresponding content is already synchronized to the video. *See* PO Resp. 23–24 (citing Ex. 2021 ¶¶ 70–72; Ex. 1003 ¶ 44). As Petitioner notes (Pet. Reply 22), however, the teachings of Thomas are not limited to a “synchronous” embodiment, which is presented expressly as a mere “example.” *See* Ex. 1003 ¶ 44 (“Supplemental content . . . may be distributed . . . as, *for example*, synchronous metadata.” (emphasis added)). Moreover, Thomas discloses that metadata may be supplied “prior to the media [(i.e., video)] *but with information associating it with media (e.g., identifiers, links, or any other*

suitable information).” *Id.* (emphasis added); *see id.* ¶ 123. We are persuaded that these disclosures would have taught, to a skilled artisan, identifying the current location in the video in using such “identifiers, links, or any other suitable information” associating the metadata to the appropriate places in the video.⁷ *See* Pet. Reply 22–23; Ex. 1102 ¶¶ 11–14; Ex. 1001, 135:20–136:20.

Because we find that Thomas explicitly teaches this limitation, we need not (and do not) consider Petitioner’s alternative arguments, including whether the identified disclosures of Thomas meet the standard required for inherency. *See* Pet. 18; Pet. Reply 23–24. Consequently, Patent Owner’s arguments specific to those positions are insufficient to defeat Petitioner’s showing. *See* PO Resp. 24–26; PO Sur-reply 23–25.

Proceeding to the next limitation of claim 10, Petitioner contends (Pet. 19) that Thomas teaches identifying a name of a performer associated with the current location in the video, as recited in claim 10, by disclosing that the supplemental content relating to actors “the user is currently watching” may include “the names of the characters or actors.” Ex. 1003 ¶ 102. Patent Owner disputes this contention. *See* PO Resp. 26–27.

⁷ Although the parties and their respective expert witnesses disagree about whether certain of these disclosures of Thomas relate to “synchronous” or “asynchronous” embodiments, we note that neither term is recited in claim 10 of the ’346 Patent. *See* Pet. Reply 22–23; PO Sur-reply 22–23. Of greater relevance here, we find credible and persuasive Dr. Bovik’s testimony that providing metadata prior to a video and using links to associate that metadata with particular locations in the video, such as described in Thomas, would have indicated to a skilled artisan that the current location in the video would be identified. *See* Ex. 1102 ¶¶ 11–14.

Considering both parties' arguments and the complete record after trial, we agree with Petitioner and find that Thomas explicitly teaches this limitation.

In particular, Patent Owner's arguments focus on Petitioner's *alternative* argument that this limitation, and "including" performer names in general, were "well-known" generally. *Id.* Patent Owner does not, however, address the specific disclosures of Thomas identified in the Petition as explicitly teaching or suggesting identifying a name of a performer associated with the current location in the video. Whether doing so was "well-known" independent of Thomas is inapposite given our finding that Thomas would have explicitly taught it to a person of ordinary skill.

For the limitation of "retrieving, responsive to the reference, a visual depiction of the performer," Petitioner relies on the disclosure in Thomas of displaying "actor interviews" in one embodiment, and a disclosure of displaying "a picture of the [music] artist" in another embodiment. Ex. 1003 ¶¶ 100, 111; *see* Pet. 20–21. Petitioner also asserts that the general disclosure of supplemental content including an actor's "biographical information" and "other suitable information relating to . . . the actor" would teach or suggest to a skilled artisan to retrieve a visual depiction of the actor. Pet. 21 (citing Ex. 1003 ¶ 106; Ex. 1002 ¶ 68). According to Petitioner, Thomas indicates such supplemental content is retrieved "responsive to" a reference, such as metadata with a link to the content. *Id.* at 20 (citing Ex. 1003 ¶ 128; Ex. 1002 ¶ 65). In addition, Petitioner argues that even if Thomas does not explicitly teach this limitation, it is "inherent." *Id.* at 20 (citing Ex. 1002 ¶ 66). Patent Owner, however, argues that actor interviews do not "necessarily" disclose a "visual depiction of the performer," and that the disclosure of displaying "a picture of the artist" in an embodiment

relating to on-demand music does not teach or suggest doing so during a video. PO Resp. 29–30; Pet. Reply 24–25. Further, Patent Owner asserts that “links” in Thomas are “not used for ‘retrieving . . . a visual depiction of the performer.’” PO Resp. 30–31.

Based on the parties’ arguments and the complete record after trial, we agree with Petitioner and find that Thomas explicitly teaches this limitation. Even assuming Patent Owner is correct that an “actor interview” does not “necessarily” require a visual depiction of the actor in the context of inherency (*id.* at 29), Patent Owner fails to address Petitioner’s primary argument, i.e., that the actor interview functionality described in Thomas would have explicitly taught or suggested retrieving a “visual depiction” of the actor, particularly given the description in Thomas that the interview is displayed in “pop-up window 1002,” which may be “any suitable *video* or application window” (emphasis added). *See* Ex. 1003 ¶¶ 98, 100, Fig. 12.

We also find Petitioner’s position more persuasive with respect to “links” discussed in Thomas. Contrary to Patent Owner’s assertion (PO Resp. 30), Petitioner provides sufficient explanation and evidence as to how Thomas teaches retrieving supplemental content (such as a visual depiction of an actor) responsive to a reference, such as metadata with a link to that supplemental content. Pet. 20 (citing Ex. 1003 ¶ 128; Ex. 1002 ¶ 65). Rather than address Petitioner’s evidence, Patent Owner instead discusses a *different* portion of Thomas regarding *different* links, which describes that the supplemental content may itself include links to *other* content and gives examples that do not explicitly mention visual depictions of performers (although it does mention “an actor’s homepage”). PO Resp. 31 (quoting Ex. 1003 ¶ 113).

Additionally, we find that the disclosure of displaying a “picture of the artist” for the on-demand music embodiment of Thomas also would have taught or suggested to a skilled artisan to do so also for a video embodiment. *See* Pet. 20–21 (citing Ex. 1003 ¶ 111). Patent Owner argues that the ’346 Patent distinguishes between visual depictions of performers and those of characters, noting that the Specification and certain claims (e.g., claim 1 vs. claim 10) distinguish between them. PO Resp. 28–29; PO Sur-reply 1–5. According to Patent Owner, the picture of a music artist described in Thomas is more akin to a depiction of a character than that of a performer, noting that the members of the rock band “KISS” wore make-up and costumes to portray on-stage personas. PO Sur-reply 24–25.

But the ’346 Patent itself undermines Patent Owner’s position—for example, the Specification discloses a preferred embodiment where “a visual depiction of a performer need not be more than an image of the performer performing the character which may be extracted from within the video as in the case of a visual depiction of character.” Ex. 1001, 12:60–64; Pet. Reply 2–3. And as Petitioner argues (Pet. Reply 2–3), claim differentiation indicates that two claims using different terms have different scope, but does not require complete mutual exclusivity—i.e., they may still overlap. Thus, even considering claims 1 and 10, a visual depiction of a performer and that of a character may be one and the same in some cases, as Patent Owner’s expert, Dr. Reader, agreed at his deposition. *See* Ex. 1101, 206:5–13. For instance, while Patent Owner’s “KISS” example may be an instance where the two may be different, a picture of the music artist Billy Joel or Carrie Underwood would likely be both a visual depiction of them as performers and as “characters” (to the extent they can be analogized to “characters”

when they perform) because their on-stage and off-stage appearances are essentially the same.

With respect to the final limitation of claim 10, Petitioner relies on disclosures in Thomas of displaying supplemental content in pop-up windows, including actor names and interviews, as a teaching of providing a performer name and visual depiction to the user, as recited in claim 10. Pet. 22–24 (citing Ex. 1003 ¶¶ 98, 102–106, Figs. 12, 14). Aside from the arguments already discussed above with respect to other limitations reciting the performer name and visual depiction, Patent Owner does not present additional arguments regarding this aspect of the claim. Considering both parties’ arguments and the complete record, we agree with Petitioner and find that Thomas explicitly teaches this limitation of claim 10.

In conclusion, for the reasons set forth above, Petitioner has demonstrated that Thomas teaches each limitation of claim 10. Consequently, based on the full record after trial, we determine that Petitioner has shown by a preponderance of the evidence that claim 10 is unpatentable as obvious over Thomas.

b. Dependent Claims 11 and 12

Claim 11 depends from claim 10, and adds the limitation, “wherein the apparatus further performs the step of retrieving and providing, the user, a filmography corresponding to the identified name of the performer.” Petitioner relies on the description in Thomas of providing, “actor information, such as . . . other movies with that actor.” Ex. 1003 ¶ 106; *see* Pet. 24. Patent Owner does not advance any arguments beyond those it presents for claim 10, which are unpersuasive for the same reasons as discussed above. PO Resp. 31.

Claim 12 also depends from claim 10, adding the limitation, “wherein the apparatus further performs the step of pausing the playing of the video in response to the receiving of the request for information.” The Petition cites a disclosure in Thomas that the system “may pause the on-demand media when the supplemental content is provided.” Pet. 24 (quoting Ex. 1003 ¶ 108). Patent Owner does not dispute that Thomas teaches this limitation.

Based on the arguments and evidence discussed above, we find that Thomas teaches each limitation of claims 11 and 12. Consequently, Petitioner has shown by a preponderance of the evidence that these claims are unpatentable as obvious over Thomas.

c. Independent Claims 4 and 13

Independent claim 4 recites substantially the same elements as claim 10, but further recites additional elements relating to “a plurality of segment definitions each defining a video segment within a video.” According to Petitioner, Thomas teaches that supplemental content (such as actor names or interviews) may be related to a “portion” of a video, such as a “scene,” which teaches the recited “segment definitions.” Pet. 25–26 (citing Ex. 1003 ¶¶ 100, 102, 104–105). Thomas indicates, for example, actor information can be displayed when an actor enters a scene of a video, and the information windows “appear and disappear automatically as scenes change.” Ex. 1003 ¶¶ 102, 104–105. Based on these disclosures, Petitioner argues that Thomas teaches identifying a segment definition that includes the current location in the video, as recited in claim 4, because a person of ordinary skill would understand the system would have to identify such a segment definition (e.g., scene) to determine the supplemental content associated with that segment. *See* Pet. 26–27 (citing Ex. 1002 ¶¶ 77–79).

Patent Owner contends that Thomas does not teach the recited segment definitions, and does not perform the recited steps (e.g., identifying a segment definition that includes the identified location), because “Thomas relies on *synchronous* metadata.” PO Resp. 33–34; PO Sur-reply 25–26. These arguments are similar to those Patent Owner advances with respect to claim 10, and they are unpersuasive for the same reasons discussed above. Additionally, Patent Owner does not explain, nor can we discern, any basis in the record to find that a “scene” would not have taught a “segment definition.” In contrast, Petitioner’s analysis and evidence are persuasive, and we find that Thomas teaches the limitations of claim 4 on that basis.

Independent claim 13 also recites substantially similar elements as claim 10, but further requires that the current location in the video, and the name of a performer associated with that location, are identified “continuously.” Additionally, the identified name and visual depiction of the performer are “contemporaneously updat[ed]” as well as provided to the user “as the video continues to be played.” According to the Petition (Pet. 27), Thomas teaches these limitations by disclosing that the windows displaying the supplemental content (e.g., actor names and interviews) “appear and disappear automatically as scenes change and as actors enter or exit in the on-demand media,” i.e., as the video continues to be played. Ex. 1003 ¶ 105; *see id.* ¶¶ 102, 104; Ex. 1002 ¶¶ 81–82.

Similar to its approach to claim 4, Patent Owner asserts that Thomas does not teach these limitations of claim 13 because Thomas is limited to using “synchronous” metadata. *See* PO Resp. 34–35; PO Sur-reply 25–26. Again, these arguments are unpersuasive for the same reasons discussed above for claim 10. Based on the parties’ arguments and full record after

trial, we agree with Petitioner's analysis and evidence, and find that Thomas teaches the limitations of claim 13 on that basis.

Therefore, in conclusion, we determine that Petitioner has shown by a preponderance of the evidence that claims 4 and 13 would have been obvious in view of Thomas.

d. Remaining Challenged Claims

Claims 5 and 6 depend from claim 4, but otherwise recite the same limitations as claims 12 and 11, respectively. Petitioner relies on the same arguments and evidence as for claims 12 and 11 (*see* Pet. 28), and Patent Owner does not present any arguments specific to these claims. We are persuaded Petitioner demonstrates by a preponderance of the evidence that claims 5 and 6 would have been obvious in view of Thomas for the same reasons discussed above for claims 11 and 12.

Claims 14–16 are method claims, but otherwise recite substantially the same elements as claims 4–6. Similarly, claims 17–19 are method claims reciting substantially the same limitations as claims 10–12, and claim 20 is a method claim reciting substantially the same limitations as claim 13. Petitioner relies on the same arguments and evidence as for those corresponding claims, and Patent Owner does not argue these claims separately. We conclude that Petitioner has shown claims 14–20 would have been obvious over Thomas, by a preponderance of the evidence, for the same reasons discussed above for the corresponding claims. *See* Pet. 24, 28.

3. Obviousness Based on Thomas in View of McIntire

Petitioner asserts that all challenged claims would have been obvious over Thomas in view of McIntire. Pet. 28–34. McIntire relates to a method

and apparatus for annotating media streams. Ex. 1004 ¶ 15. Such media streams may include “television, hosted online video and the like.” *Id.* ¶ 14. This annotation may be accomplished through a “mapping” in which segments of the media stream are associated with supplemental content, such as “actors featured in the segment.” *Id.* ¶ 141. This supplemental content is displayed in response to a signal from the viewer. *Id.* ¶ 272, Fig. 8.

a. Independent Claim 10

As an initial matter, Petitioner relies on the same evidence and arguments for this ground as for its asserted ground of obviousness based on Thomas alone. *See* Pet. 28. In addition to those contentions, Petitioner further asserts that McIntire also teaches the “visual depiction” limitations of claim 10, and that a person of ordinary skill would have been motivated to combine those teachings with the teachings of Thomas. *Id.* at 28–31.

More specifically, Petitioner relies on McIntire’s disclosure of retrieving supplemental content, including “an image of the actress” (visual depiction of the performer), based on a mapping (reference) that associated that content to the segment depicting that actress. *See* Ex. 1004 ¶ 278; Pet. 28–29. Petitioner asserts *inter alia* that a skilled artisan would have been motivated to combine these teachings with the system in Thomas because displaying an actor’s image, as taught in McIntire, would have been a well-known technique applied in a conventional fashion to the similar device taught in Thomas to yield predictable results. *See* Pet. 29–30 (citing Ex. 1002 ¶ 68; *KSR*, 550 U.S. at 417). In addition, the Petition notes that Thomas teaches displaying “actor information” such as “biographical information” and “[a]ny other suitable information relating to . . . the actor,” which would have suggested to a skilled artisan to include images of the

actor. *Id.* at 30 (quoting Ex. 1003 ¶ 106); Ex. 1002 ¶ 68. This analysis is persuasive, and its supporting evidence is credible and convincing.

Patent Owner first disputes Petitioner’s contentions by arguing that combining Thomas with the teachings of McIntire “would require a change in the synchronous metadata operating principle of Thomas.” PO Resp. 36. As discussed above, however, Thomas is not limited to a “synchronous” operating principle. Moreover, both Patent Owner’s argument (*id.*) and the cited testimony of Dr. Reader (Ex. 2021 ¶¶ 94–98) are conclusory and fail to explain why the combination of Thomas and McIntire would require a change in operating principle.

Next, Patent Owner contends that McIntire does not teach a visual depiction of a *performer* but rather describes visual depictions of *characters*. PO Resp. 36–37. According to Patent Owner, McIntire discloses an image of an actress in the displayed television show, i.e., the actress playing the role of a character in the show. *Id.* As discussed above, however, the ’346 Patent indicates that the visual depiction of the performer may be the same as a visual depiction of a character played by that performer. *See* Ex. 1001, 12:60–64. Thus, even accepting Patent Owner’s characterization of McIntire, the disclosures regarding the image of an actress clearly teach the visual depiction of a performer recited in claim 10.

Lastly, Patent Owner argues that a person of ordinary skill would not have been motivated to combine the teachings of Thomas and McIntire. PO Sur-reply 26–27. Patent Owner’s argument, however, is premised on its view that Thomas is limited to using synchronous metadata. *See id.* As discussed above, we do not agree. Patent Owner also fails to address Petitioner’s specific contentions, which rely on an express suggestion in

Thomas, the well-known nature of McIntire’s teaching of displaying actor/actress images, and the conventionality of applying that teaching to a similar system in Thomas. *See* Pet. 29–30.

Based on the arguments and complete evidentiary record after trial, we find that a preponderance of the evidence supports Petitioner’s analysis that the combination of Thomas and McIntire would have taught or suggested each limitation of claim 10, and that a skilled artisan would have been motivated to combine their teachings to reach the claimed invention. Therefore, Petitioner has established by a preponderance of the evidence that the combined teachings of Thomas and McIntire render claim 10 obvious.

b. Independent Claim 4

Petitioner relies on the same evidence and arguments for claim 4 as for its asserted ground of obviousness based on Thomas alone. *See* Pet. 28. In addition to those contentions, Petitioner further asserts that McIntire also teaches the “segment definitions” limitations of claim 4, and that a person of ordinary skill would have been motivated to combine those teachings with the teachings of Thomas. *Id.* at 31–34. We agree with Petitioner, as explained below.

Specifically, Petitioner cites McIntire’s disclosure that “segments of the media stream (i.e., sequences of frames) are identified . . . by (possibly unique) segment identifiers,” which may “comprise sets of frame numbers associated with the segments.” Ex. 1004 ¶ 96; Pet. 31. McIntire further discloses determining “in accordance with the mapping . . . which segment identifier corresponds to the point in time at which the first signal was received [from the viewer].” Ex. 1004 ¶ 272. Supplemental content mapped to that segment identifier is then displayed to the viewer. *See id.* at Fig. 8

(step 812). According to Petitioner, modifying the system of Thomas to use segment identifiers as taught in McIntire would have been a simple substitution of one known technique (McIntire's segment identifiers) for another known technique (a "scene" or "portion" of a video in Thomas) to obtain predictable results. Pet. 32–33 (citing *KSR*, 550 U.S. at 417).

Petitioner also notes that systems using segment definitions were commonplace at the time of the invention. *Id.* at 33 (citing Ex. 1002 ¶ 76).

In addition to its arguments also relating to claim 10, which we examined above, Patent Owner contends that McIntire would not teach a person of ordinary skill to identify a current location or identify a segment definition that includes that location because McIntire's segment identifiers are embedded as part of the closed captioning stream of the media stream. PO Resp. 37–38 (quoting Ex. 1004 ¶ 90). According to Patent Owner, McIntire's system has no need to identify a current location because (similar to Patent Owner's characterization of "synchronous metadata" in Thomas) the segment identifier is embedded in the media stream, so each segment already is associated with its identifier from the beginning without a separate identification step needed. *See* PO Sur-reply 18–19. Petitioner notes that the portion of McIntire on which Patent Owner relies discusses only one embodiment, and other embodiments also are disclosed. Pet. Reply 28 (citing Ex. 1004 ¶¶ 90–92, 96–98).

After considering the parties' arguments and evidence, we find Petitioner's positions more persuasive. McIntire discusses embedding segment identifiers into the media stream as "one embodiment" (Ex. 1004 ¶ 90), but also discusses other methods of associating segment identifiers with the segments of the media stream (*id.* ¶¶ 92, 96–98). Moreover, as

discussed above, Thomas teaches identifying a current location, and we find that Petitioner's evidence indicates a person of ordinary skill would have been motivated to combine those teachings with McIntire's teachings regarding segments and their associated segment identifiers, as Petitioner contends. *See* Pet. 31–34. We also note that “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). “Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *Id.*

Thus, we determine that Petitioner has shown by a preponderance of the evidence that the teachings of Thomas in view of those of McIntire render claim 4 obvious.

c. Remaining Challenged Claims

For the remaining challenged claims, i.e., claims 5, 6, and 11–20, the Petition relies on the same arguments and evidence as for the asserted ground of obviousness based on Thomas alone, i.e., it does not rely on McIntire for any further limitations beyond those discussed above for independent claims 4 and 10. *See* Pet. 28. Patent Owner does not offer any arguments with respect to these claims other than those already discussed above. Thus, for these claims, we also rely on our analysis above. Based on the complete record after trial, we conclude that Petitioner has shown by a preponderance of the evidence that the teachings of Thomas in view of those of McIntire render claims 5, 6, and 11–20 unpatentable as obvious.

4. *Obviousness Based on McIntire in View of Thomas*

Petitioner asserts that all challenged claims would have been obvious over the teachings of McIntire in view of Thomas. Pet. 35–51. Although these are the same prior art references as in the asserted ground of obviousness based on Thomas in view of McIntire discussed above, Petitioner relies on somewhat different teachings of the references for this proposed ground of unpatentability. For clarity and consistency, we analyze this ground separately as both parties have done.

a. *Independent Claim 10*

According to Petitioner (Pet. 35–37), McIntire teaches an apparatus capable of processing data that comprises a performer name and a reference to a visual depiction of that performer, as recited in claim 10, in its disclosure of an “apparatus for annotating media streams.” Ex. 1004 ¶ 15. McIntire describes mapping “segment identifiers to at least one item of supplemental content or metadata (e.g., data about the media stream that is underlying the video signal).” *Id.* ¶ 136. The supplemental content may include “an individual appearing in or associated with the media stream (e.g., an actor or director).” *Id.* Figure 22 of McIntire shows exemplary mapping 2200, which associates segment identifier XYZ-100 with supplemental content that identifies “Actress A.” *Id.* ¶ 141, Fig. 22. McIntire further discloses that the supplemental content may also include “an image of the actress” depicted in a segment associated with a particular segment identifier. *Id.* ¶ 278. We agree with Petitioner and find that McIntire teaches the elements of the preamble of claim 10.

Patent Owner argues that McIntire fails to teach a visual depiction of a performer because the disclosed image of the actress is, in fact, an image of

the actress “*in character*” and, thus, is a visual depiction of the character instead. PO Sur-reply 17; PO Resp. 39–40. This argument depends on Patent Owner’s contention that a depiction of a character cannot be a depiction of a performer. As discussed above, we disagree and determine that the ’346 Patent explicitly discloses that an image of a performer in character is both a depiction of the performer and a depiction of the character. *See* Ex. 1001, 12:60–64. Thus, for similar reasons as discussed above, Patent Owner’s argument is unpersuasive.

Next, Petitioner contends McIntire teaches receiving a user’s request for information identifying a performer in a video, as recited in claim 10, in its disclosure of “receiv[ing] a first signal from a viewer of the media stream,” which “indicates that the viewer wishes to view at least a subset of the information embodied in the supplemental content.” Ex. 1004 ¶ 268; *see id.* at Fig. 8. As discussed above, McIntire teaches that the supplemental content may include identifying information for an actor. *See id.* ¶ 141, Fig. 22. Petitioner also cites teachings in Thomas for this limitation (the same teachings discussed above for this limitation in the context of the previous grounds based on Thomas), and presents evidence that a person of ordinary skill would have combined those teachings with McIntire. Pet. 39–40 (citing Ex. 1002 ¶¶ 126–130). Patent Owner does not dispute that the combination of McIntire and Thomas teaches this limitation, and that a skilled artisan would have combined their teachings. We find Petitioner has shown sufficiently that this limitation is taught by McIntire and Thomas.

With respect to “identifying a current location in the video,” Petitioner contends persuasively that McIntire teaches this limitation recited in claim 10 by describing “determin[ing] . . . which segment identifier corresponds to

the point in time at which the first signal was received (i.e., what segment of the media stream was being displayed when the viewer sent the first signal.” *Id.* ¶ 272 (emphasis added); *see* Pet. 40–41. Patent Owner disputes Petitioner’s contention. PO Resp. 40–41.

First, Patent Owner argues that rather than identifying a current location in the video, McIntire discloses identifying a segment identifier. *Id.* Patent Owner, however, does not explain persuasively why identifying a segment identifier is inconsistent with identifying a current location in the video. As Petitioner explains (Pet. Reply 19), McIntire describes a process (Ex. 1004, Fig. 8) in which the system determines “the point in time at which the first signal was received,” which is then used to determine “which segment identifier corresponds to” that point in time, thereby indicating “what segment of the media stream was being displayed when the viewer sent the first signal” indicating his/her request for supplemental content. Ex. 1004 ¶ 272, Fig. 8. McIntire indicates, for example, that the “point in time” may be determined by “computing the hash of the current frame of the media stream [and] identifying the time associated with the computed hash,” or by identifying “time-code data.” *Id.* According to the ’346 Patent, identifying the current location may be performed by identifying a “time code, frame identifier, or some other indicator of the place or location, within the video at which . . . the Who request was received.” Ex. 1001, 9:60–65. Dr. Reader also acknowledged that both determining a time code and identifying a current frame would constitute identifying a current location, which a person of ordinary skill would have known how to perform. *See* Ex. 1101, 77:1–14, 92:2–93:7.

Next, Patent Owner argues that McIntire does not teach this limitation because its segment identifiers are “embedded,” which indicates that identifying a current location is unnecessary. PO Sur-reply 18–19. As discussed above with respect to the asserted ground of unpatentability based on Thomas (as the primary reference) combined with McIntire (as the secondary reference), McIntire indicates that embedding segment identifiers is only “one embodiment” and discusses other approaches. *See* Ex. 1004 ¶¶ 90, 92, 96–98. Moreover, we are not persuaded that the description of embedded segment identifiers negates McIntire’s teachings regarding identifying a time code or frame corresponding to the current location in the media stream. For similar reasons as discussed above, we are not persuaded by this argument, and we agree with Petitioner regarding this limitation.

For the next limitation of claim 10, Petitioner asserts that McIntire teaches “identifying a name of a performer associated with the identified location,” by describing how the mapping of supplemental content to a segment identifier can be used to identify the name of an actress in the segment. Pet. 41–42 (citing Ex. 1004 ¶¶ 141, 278, Fig. 22). This can be done when a signal is received from the viewer “at a time when one or more segments identified by the segment identifier depicted an actress,” such that supplemental content relating to that actress is displayed. Ex. 1004 ¶ 278. Patent Owner does not dispute Petitioner’s argument. We are persuaded that the Petition shows sufficiently that McIntire would have taught this limitation to an artisan of ordinary skill.

Next, Petitioner contends that McIntire teaches retrieving a visual depiction of the performer by disclosing that the supplemental content for the segment identifier for the current location in the video may include “an

image of the actress” that is depicted in the segment. Pet. 42–43 (quoting Ex. 1004 ¶ 278). Patent Owner’s position on this limitation is the same as its position on the “visual depiction of a performer” recited in the preamble, discussed above. PO Resp. 39–40; PO Sur-reply 17. We find Petitioner has shown sufficiently that McIntire teaches this limitation.

Lastly, Petitioner relies on McIntire’s Figure 8 and its accompanying description as teaching providing the performer name and visual depiction to the user, as recited in claim 10. Pet. 43–44 (citing Ex. 1004 ¶¶ 277–278, Fig. 8). As discussed above, Petitioner has shown sufficiently that the supplemental content of McIntire teaches both performer name and visual depiction. As shown in Figure 8, McIntire discloses that the supplemental content is displayed to the viewer. Ex. 1004 ¶¶ 277–278, Fig. 8. Patent Owner does not present any arguments for this limitation beyond those already discussed above. We find that the Petition shows this limitation would have been taught by McIntire.

In conclusion, for the reasons set forth above and based on the complete record after trial, Petitioner has demonstrated that the combination of McIntire and Thomas teaches each limitation of claim 10, and that a person or ordinary skill would have combined their teachings in the manner asserted. Thus, we conclude that Petitioner has shown by a preponderance of the evidence that claim 10 is unpatentable as obvious over McIntire in view of Thomas.

b. Dependent Claims 11 and 12

As discussed above, claim 11 of the ’346 Patent depends from claim 10 and adds the limitation, “wherein the apparatus further performs the step of retrieving and providing, the user, a filmography corresponding to the

identified name of the performer.” Petitioner relies on the description in McIntire of providing “the actress’s filmography” as part of the supplemental content displayed to the viewer. Ex. 1004 ¶ 278; *see* Pet. 44–45. Patent Owner does not dispute that McIntire teaches this limitation.

Claim 12 also depends from claim 10 and adds the limitation, “wherein the apparatus further performs the step of pausing the playing of the video in response to the receiving of the request for information.” Petitioner relies on McIntire’s disclosure that in one embodiment, “the display of the media stream is paused while the supplemental content is displayed.” Pet. 45 (quoting Ex. 1004 ¶ 278). Patent Owner also does not dispute that McIntire teaches this limitation.

Based on full record after trial, we agree with Petitioner and find that McIntire and Thomas teach each limitation of claims 11 and 12. Thus, Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable as obvious over McIntire and Thomas.

c. Independent Claims 4 and 13

As already noted, independent claim 4 recites substantially the same elements as claim 10, but further recites additional elements relating to “a plurality of segment definitions each defining a video segment within a video.” As Petitioner notes (Pet. 45–46), McIntire discloses “segments of the media stream (i.e., sequences of frames) are identified . . . by (possibly unique) segment identifiers” that may “comprise sets of frame numbers associated with the segments.” Ex. 1004 ¶ 96. According to Petitioner, the segment identifiers teach the recited “plurality of segment definitions.” We agree with Petitioner and find that McIntire teaches this limitation.

McIntire further describes determining “which segment identifier corresponds to the point in time at which the first signal was received (i.e., what segment of the media stream was being displayed when the viewer sent the first signal).” *Id.* ¶ 272; *see id.* at Fig. 8. Petitioner contends this teaches identifying a current location in the video (“the point in time at which the first signal was received”), and then identifying a segment definition including that location (determining “which segment identifier corresponds to that point in time . . .”). Pet. 46. Patent Owner does not present any arguments beyond those already discussed above, which are unpersuasive for the same reasons. Based on the full record, we find that McIntire teaches this limitation as well.

Like claim 4, independent claim 13 also recites substantially similar elements as claim 10, but further requires that the current location in the video, and the name of a performer associated with that location, are identified “continuously.” Additionally, the identified name and visual depiction of the performer are “contemporaneously updat[ed]” as well as provided to the user “as the video continues to be played.” We find that the combination of McIntire and Thomas teaches these limitations for the following reasons.

According to Petitioner (Pet. 47–48), McIntire teaches these limitations in its description of a “synchronized” embodiment wherein different supplemental content is displayed at different times—“i.e., the supplemental content is displayed automatically in accordance with the synchronization.” Ex. 1004 ¶¶ 423–424. According to Petitioner, an artisan of ordinary skill would have understood that automatically displaying supplemental content synchronized to the media stream would involve

continuously identifying the current location. Pet. Reply 21 (citing Ex. 1102 ¶ 47). Petitioner also cites teachings in Thomas for this limitation (the same teachings discussed above for this limitation in the context of the previous grounds based on Thomas), and sets forth evidence and argument supporting its contention that a skilled artisan would have been motivated to combine those teachings with McIntire. *See* Pet. 48–51 (citing Ex. 1002 ¶¶ 150–161).

Patent Owner disputes that McIntire teaches “continuously identifying a current location in the video,” based on its assertion that McIntire does not teach identifying a current location at all. PO Resp. 41. As discussed above with respect to claim 10, however, we find that McIntire teaches identifying a current location. Moreover, Petitioner relies on both McIntire and Thomas as teaching this limitation, not McIntire alone. Although Patent Owner disputes that Thomas teaches this limitation (PO Sur-reply 21), we disagree and find that it does, as discussed above for the previous grounds based on Thomas (as the primary reference).

Additionally, Patent Owner contends that the “automatic” updating of supplemental content relied on by Petitioner does not teach identifying a current location “continuously,” as recited in claim 13. PO Sur-reply 20–21.⁸ Much of Patent Owner’s argument seeks to propose an “equally plausible alternative” to rebut Dr. Bovik’s purported “inherency theory.” *Id.* We do not discern any “inherency theory” in Dr. Bovik’s testimony at issue

⁸ Patent Owner also asserts that Dr. Bovik’s testimony in support of Petitioner’s Reply “should not be given any weight” because it constitutes a “new theory.” PO Sur-reply 20–21. Upon review, we determine that the testimony at issue was proper as it directly rebuts testimony provided by Dr. Reader to support the Patent Owner Response. *See* Ex. 1102 ¶ 47 (citing Ex. 2021 ¶ 108).

(*see* Ex. 1102 ¶ 47) or in Petitioner’s briefs regarding this issue. Even accepting *arguendo* Patent Owner’s “equally plausible alternative,” Patent Owner at most establishes that a person of ordinary skill would have known that McIntire’s teachings could be practiced either in a manner in which the current location is continuously identified (per Dr. Bovik’s testimony), or in a manner in which it is not continuously identified (per Patent Owner’s contention). The record would still support Petitioner’s argument that a skilled artisan would have found it obvious to identify a current location continuously based on McIntire’s teachings. Put another way, Patent Owner’s contention does not contradict Dr. Bovik’s testimony, which we find credible and persuasive.

Based on the reasoning above and the evidence presented by the parties, both for these claims and for corresponding limitations of claim 10, we find that the combination of McIntire and Thomas teaches each limitation of claims 4 and 13. As a result, we conclude that Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable as obvious over McIntire in view of Thomas.

d. Remaining Challenged Claims

Claims 5 and 6 depend from claim 4, but otherwise recite the same limitations as claims 12 and 11, respectively. Petitioner relies on the same arguments and evidence as for claims 12 and 11 (*see* Pet. 51), and Patent Owner does not present any arguments specific to these claims. We are persuaded Petitioner demonstrates by a preponderance of the evidence that claims 5 and 6 would have been obvious over McIntire in view of Thomas for the same reasons discussed above for claims 11 and 12.

Claims 14–16 are method claims, but otherwise recite substantially the same elements as claims 4–6. Similarly, claims 17–19 are method claims reciting substantially the same limitations as claims 10–12, and claim 20 is a method claim reciting substantially the same limitations as claim 13. Petitioner relies on the same arguments and evidence as for those corresponding claims, and Patent Owner does not argue these claims separately. We conclude Petitioner has shown claims 14–20 would have been obvious over McIntire in view of Thomas, by a preponderance of the evidence, for the same reasons discussed above for those corresponding claims. *See* Pet. 44–45, 51.

5. *Obviousness Based on Reimer in View of McIntire*

Petitioner contends that claims 4–6, 10–12, and 14–19 would have been obvious over Reimer in view of McIntire. Pet. 51–65. Reimer relates to a system for “providing on demand access to information related to a movie while the movie is being presented to a user.” Ex. 1005, 3:27–29. Reimer explains:

The invention operates by presenting the movie to the user, and then receiving from the user a query pertaining to the movie. The invention determines a frame of the movie that was being presented to the user when the user issued the query (the invention may extract this information from the query, or may extract this information from the movie itself). The invention identifies, as specified by the query, portions of the movie related information relating to the frame, and retrieves those portions of the movie related information. These retrieved portions of the movie related information are presented to the user.

Id. at 3:31–41. This information may include, for example, “the names of the actors, other credited roles, or scene technical detail for the current scene.” *Id.* at 5:39–40.

a. Independent Claim 10

According to Petitioner (Pet. 51–54), Reimer teaches an apparatus capable of processing data that comprises a performer name and a reference to a visual depiction of that performer, as recited in claim 10, in its disclosure of a system (including a “full function PC” or “settop box”) that retrieves actor information relating to a frame of a movie. *See* Ex. 1005, 8:14–15, 18:19–31. Reimer discloses that the system retrieves from a data table “rows that relate to the current frame” of the movie, which “identify the actors who appear in the current frame.” *Id.* at 18:19–31; *see id.* at Fig. 10A. This information includes actor names. *Id.* at 18:38–43, Fig. 10A.

With respect to the recited visual depiction of a performer, Petitioner notes that Reimer indicates the system stores video and image content related to the movie. Pet. 53–54; *see* Ex. 1005, 11:34–37 (referring to “video indices” and “image content indices”). Petitioner further cites McIntire’s teachings of this element, relying on the same evidence and arguments addressed previously for the other McIntire-based obviousness grounds. *See* Pet. 54 (citing Pet. 28–30). According to Petitioner, a person of ordinary skill would have been motivated to combine McIntire’s visual depiction teachings with the Reimer system because Reimer discusses using video and image content, such content would have been known to advantageously provide further information to a user, and applying McIntire’s teachings would have been simply applying a known technique to a known system in a routine and conventional way to obtain predictable results. *Id.* at 54–56 (citing Ex. 1002 ¶¶ 181–187).

Patent Owner disputes that the combination of Reimer and McIntire teaches a visual depiction of a performer and that a skilled artisan would

have been motivated to combine their teachings, but its arguments are premised on its view that the references only teach depictions of characters, which cannot be depictions of performers as a result. PO Resp. 42–44; *see* PO Sur-reply 11–14.⁹ As discussed above, we disagree with this view. We agree instead with Petitioner’s arguments and supporting evidence, in particular that a person of ordinary skill would have been motivated to combine Reimer with McIntire’s teachings regarding visual depictions of performers. *See* Pet. 54–56. For those reasons, and additionally for the same reasons explained above with respect to the previous McIntire-based grounds, we agree that the combination of Reimer and McIntire teach the “visual depiction of a performer” elements of the preamble of claim 10.

Petitioner contends McIntire teaches receiving a user’s request for information identifying a performer in a video, as recited in claim 10, by disclosing that a user can send a query to the system in Reimer, such as by pressing the “Pause” button, to inquire as to the identity of a person in a movie scene or frame. Pet. 56 (citing Ex. 1005, 16:5–25). Patent Owner does not dispute that Reimer teaches this limitation, and we find Petitioner has shown sufficiently that it is taught by Reimer.

With respect to “identifying a current location in the video,” Petitioner contends Reimer teaches this limitation by disclosing the step of

⁹ Patent Owner also alleges that various Petitioner arguments are “conclusory” (PO Sur-reply 12), that Petitioner “fail[ed] to provide a rationale for modifying Reimer” (*id.* at 13), and that Petitioner improperly incorporated arguments from Dr. Bovik’s declaration (*id.* at 14). We determine that none of these allegations have merit, and that the relevant portions of the Petition provide sufficient explanation and present sufficient evidentiary support. *See* Pet. 53–56.

“determin[ing] the time code corresponding to the current frame” after receiving a user query. Ex. 1005, 16:61–17:10, Fig. 9B (step 904); *see* Pet. 57–58. Petitioner further asserts that Reimer teaches “identifying a name of a performer associated with the identified location,” as recited in claim 10, by describing how the system retrieves rows of information from a data table that “relate to the current frame” and that “identify the actors who appear in the current frame.” Ex. 1005, 18:19–31, Fig. 10A *see* Pet. 58–59. Patent Owner does not dispute that Reimer teaches these limitations, and we find Petitioner has shown sufficiently that they are taught by Reimer.

With respect to retrieving a visual depiction of the performer, as recited in claim 10, Petitioner relies on the combined teachings of Reimer and McIntire discussed above for the recitation of the visual depiction in the preamble, further noting that Reimer teaches the use of “indices” to retrieve data, including “video indices” and “image content indices.” Pet. 59–60; Ex. 1005, 11:17–44; *see also* Pet. 52–56 (explaining the teachings of Reimer and McIntire regarding visual depictions of a performer). Patent Owner’s arguments against Petitioner’s contentions regarding the recited “visual depiction of a performer” generally are addressed above and are unpersuasive for this limitation for the same reasons. We agree with Petitioner and find that the combined teachings of Reimer and McIntire teach this limitation.

Finally, Petitioner relies on Reimer’s disclosure of presenting retrieved information, including actor information, to a user as teaching providing the performer name and visual depiction to the user, as recited in claim 10. Pet. 60 (citing Ex. 1005, 18:38–43, 18:50–55, 18:60–19:2, 19:16–24, Fig. 11). Patent Owner does not dispute that Reimer teaches this

limitation, and we find Petitioner has shown sufficiently that it is taught by the asserted prior art.

In conclusion, for the reasons set forth above, we find that the combination of Reimer and McIntire teaches each limitation of claim 10, and that a person of ordinary skill would have been motivated to combine their teachings as asserted in the Petition. Thus, we conclude that Petitioner has established by a preponderance of the evidence that claim 10 is unpatentable as obvious over Reimer in view of McIntire.

b. Dependent Claims 11 and 12

As discussed above, claim 11 of the '346 Patent depends from claim 10 and adds the limitation, “wherein the apparatus further performs the step of retrieving and providing, the user, a filmography corresponding to the identified name of the performer.” Reimer discloses that the information supplied to the user could include “the names of the actors [and] other credited roles,” as well as “other movies [or] TV shows” with the same actor, director, etc. *See* Ex. 1005, 5:39–45.

Dependent claim 12 adds the limitation, “wherein the apparatus further performs the step of pausing the playing of the video in response to the receiving of the request for information.” Petitioner notes that Reimer discloses a user submitting a query for information by pressing the “Pause” button. Pet. 62 (citing Ex. 1005, 16:5–21, 17:3–5). In addition, Petitioner also relies on McIntires’s disclosure that the media stream may be “paused while the supplemental content is displayed,” also explaining why a skilled artisan would have combined this teaching with Reimer. Pet. 62–63 (citing Ex. 1004 ¶ 278; Ex. 1002 ¶¶ 208–212).

Patent Owner does not dispute that the combination of Reimer and McIntire teaches the above limitations. Based on the complete record after trial, we find that the combination of Reimer and McIntire teaches each limitation of claims 11 and 12. Thus, Petitioner has established by a preponderance of the evidence that these claims are unpatentable as obvious over the combination of Reimer and McIntire.

c. Independent Claim 4

As already discussed, independent claim 4 recites substantially the same elements as claim 10, but further recites additional elements relating to “a plurality of segment definitions each defining a video segment within a video.” As Petitioner notes (Pet. 63), Reimer discloses that each row of its data tables is associated with a particular range of time codes corresponding to certain frames in the movie. Ex. 1005, 13:19–48. According to Petitioner, these ranges teach the recited plurality of segment definitions. *See* Pet. 63.

Reimer further describes extracting information related to the movie from its data tables by retrieving rows with a range of frame time codes that encompass the time code for the current frame. *Id.* at 17:15–22. Petitioner contends this teaches identifying a segment definition including the identified current location, as recited in claim 4. Pet. 64.

Patent Owner does not present any arguments regarding claim 4 beyond its arguments for the corresponding limitations of claim 10. PO Resp. 45. Based on the full record, we find that Reimer in combination with McIntire teaches each limitation of claim 4. Consequently, Petitioner has demonstrated by a preponderance of the evidence that claim 4 is unpatentable as obvious over Reimer in view of McIntire.

d. Remaining Challenged Claims

Claims 5 and 6 depend from claim 4, but otherwise recite the same limitations as claims 12 and 11, respectively. Petitioner relies on the same arguments and evidence as for claims 12 and 11 (*see* Pet. 65), and Patent Owner does not present any arguments specific to these claims. We are persuaded Petitioner demonstrates by a preponderance of the evidence that claims 5 and 6 would have been obvious in view of Reimer and McIntire for the same reasons discussed above for claims 11 and 12.

Claims 14–16 are method claims, but otherwise recite substantially the same elements as claims 4–6. Similarly, claims 17–19 are method claims reciting substantially the same limitations as claims 10–12. Petitioner relies on the same arguments and evidence as for those corresponding claims, and Patent Owner does not argue these claims separately. We conclude Petitioner has shown claims 14–19 would have been obvious over Reimer and McIntire, by a preponderance of the evidence, for the same reasons discussed above for those corresponding claims. *See* Pet. 61–63, 65.

6. Obviousness Based on Reimer in View of McIntire and Thomas

According to Petitioner, claims 13 and 20 would have been obvious over the teachings of Reimer in view of McIntire and Thomas. Pet. 65–68. As discussed above, independent claim 13 recites substantially similar elements as claim 10, but further requires that the current location in the video, and the name of a performer associated with that location, are identified “continuously.” Additionally, the identified name and visual depiction of the performer are “contemporaneously updat[ed]” as well as provided to the user “as the video continues to be played.”

Petitioner relies on the combination of Reimer and McIntire to contend that the limitations of claim 13 that overlap with those of claim 10 would have been obvious, based on the same arguments and evidence advanced in the Petition against claim 10, which are persuasive for the same reasons discussed above. Pet. 65. With respect to the remaining aspects of claim 13, Petitioner relies at least in part on the teachings of Thomas. *Id.* at 66–68 (citing Ex. 1003 ¶¶ 102, 104, 105). Petitioner’s arguments relating to Thomas are the same as those for this claim under Petitioner’s asserted ground of obviousness based on Thomas alone. *See* Pet. 27, 66. As explained above, we agree with Petitioner that Thomas teaches the “continuously” and “contemporaneously updating” limitations of claim 13.

Patent Owner argues, however, that Thomas does not teach these limitations of claim 13. PO Resp. 47–49. First, Patent Owner repeats its argument that Thomas does not teach “identifying a current location” (*id.* at 47), which is belied by the evidence of record, as discussed above. Patent Owner also repeats its argument that Thomas is limited to “synchronous” operation (*id.* at 48–49), which also is belied by the record, as discussed above as well. Lastly, Patent Owner argues that “automatically” (as in the automatic opening/closing of supplemental content during the video described in Thomas) does not “require” continuously, as recited in claim 13. *Id.* at 48. As an initial matter, we note that the standard for proving obviousness does not demand the prior art “require” what is claimed, but that the prior art teach or suggest it. *See Southwire Co. v. Cerro Wire LLC*, 870 F.3d 1306, 1311–12 (Fed. Cir. 2017) (affirming the Board’s conclusion of obviousness where the prior art taught a limitation but insufficient evidence existed to prove the limitation necessarily resulted from the prior

art’s teachings); *see also Keller*, 642 F.2d at 425 (“The test for obviousness is not . . . that the claimed invention must be expressly suggested in any one or all of the references [but rather] the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”).

Moreover, we agree substantively with Petitioner—and disagree with Patent Owner—about whether the “automatic” changing of displayed supplemental content in Thomas would have taught these limitations. In our analysis above of the asserted ground based on Thomas alone, we explained our finding that Thomas teaches identifying a current location and the name of a performer associated with that location, as well providing the name and visual depiction of that performer, as recited in the challenged claims. Also as discussed above, Thomas describes that “pop-up windows” displaying “information relating to each actor that the user is *currently watching*” may “appear and disappear automatically as scenes change and as actors enter or exit” in the video. Ex. 1003 ¶¶ 102, 105 (emphasis added). “For example, when Ben Stiller enters a scene, a pop-up window may appear to indicate that the actor that the user is currently watching is Ben Stiller.” *Id.* ¶ 102. The window “may automatically disappear after . . . the actor that the user is currently watching exits the particular scene.” *Id.* ¶ 104.

Based on this body of evidence, we are persuaded that a skilled artisan would have been taught by the above disclosures to identify the current location (i.e., to determine what scene the user is “currently watching”), and identify a performer’s name (e.g., Ben Stiller), and to do so *continuously* to update that information according to the video as it is being played (i.e., to account for when the performer enters or exits a scene). *See* Ex. 1002 ¶ 81. We also are persuaded these disclosures teach that the information being

displayed is contemporaneously updated and provided to the user as the video is played because Thomas describes the actor information changing to reflect who is displayed in the video as it is being viewed. *See id.*; Ex. 1003 ¶¶ 102, 104–105.

The Petition sets forth several rationales supporting Petitioner’s position that a person of ordinary skill would have combined these teachings of Thomas with those of Reimer and McIntire regarding the independent claims. Pet. 66–68 (citing Ex. 1002 ¶¶ 220–230). For example, Petitioner asserts that a skilled artisan would have recognized that the Thomas approach would advantageously simplify the user’s experience by removing the need to repeatedly submit queries each time actor information is desired. *Id.* at 66 (citing Ex. 1002 ¶ 223). In addition, the Petition argues that applying the Thomas approach would have been simply applying a known technique to a known system (Reimer) in a conventional manner to obtain predictable results, with the Thomas approach being one of a finite number of potential solutions. *See id.* at 67–68 (citing Ex. 1002 ¶¶ 226–229; *KSR*, 550 U.S. at 417, 421). We find these arguments persuasive.

In response, Patent Owner first argues that Reimer does not teach continuous updating of a script, which is asserted in the Petition as also teaching the “continuous” aspects of claim 13. PO Resp. 46–47; *see* Pet. 65–66; Pet. Reply 13–15. We agree with Patent Owner that the cited portions of Reimer disclose that the current frame is only identified once (i.e., not continuously) in order to synchronize the script with the movie, and the data tables provide information regarding the length of each scene that is used to maintain the synchronization until the end of the movie. *See* Ex. 1005, 22:10–40. As discussed above, however, Petitioner does not rely

on Reimer alone; instead, Petitioner relies persuasively on the teachings of Thomas combined with Reimer's system.

Lastly, Patent Owner argues that modifying Reimer to apply the teachings of Thomas would "impermissibly change the principle of operation of Reimer." PO Resp. 49–51. This argument, however, is premised on Patent Owner's contention that Thomas is limited to "synchronous" operation. *See id.* Again, as discussed above, we disagree with that contention, which is not supported by the evidence of record.

Based on the arguments and evidence presented during trial, we agree with Petitioner and find that a preponderance of the evidence shows that the combination of Reimer, McIntire, and Thomas teaches each limitation of claim 13, including that a person of ordinary skill would have been motivated to combine the teachings to arrive at the invention of claim 13.¹⁰ Claim 20 is a method claim reciting substantially the same limitations as claim 13, and Petitioner relies on the same arguments and evidence as for claim 13. For the same reasons as for claim 13, Petitioner has proven the asserted combination of prior art teaches each limitation of claim 20. Thus, we determine that, based on a preponderance of the evidence, claims 13 and 20 would have been obvious over Reimer in view of McIntire and Thomas.

¹⁰ Patent Owner addresses certain preliminary determinations in the Decision on Institution regarding this ground. *See* PO Resp. 2–5. We note, however, that Patent Owner did not file a request for rehearing of the Decision on Institution, and, in any event, any arguments made in its Preliminary Response but *not* made after trial was instituted were waived. *See In re Nuvasive, Inc.*, 842 F.3d 1376, 1380–81 (Fed. Cir. 2016).

8. *Obviousness Based on Clarke in View of Reimer*

Petitioner asserts that all challenged claims would have been obvious over Clarke in view of Reimer. Pet. 69–85. Clarke relates to “a system for including time based metadata information as a form of supplemental content in connection with the presentation of media content.” Ex. 1006, 3:36–38. This media content may include, for example, a movie or television program. *Id.* at 3:43–45. That content may be “enhanced with the display of relevant metadata information,” such as supplementing “the appearance of an actor in the movie” with “the name of the actor . . . as well as additional information about the actor or character.” *Id.* at 3:45–52.

a. *Whether Clark Qualifies as Prior Art*

The parties dispute whether Clarke qualifies as prior art to the ’346 Patent. Specifically, Petitioner asserts that it qualifies as prior art under 35 U.S.C. § 102(e)(2) because it is entitled to the priority date of its provisional application, which was filed on June 14, 2011. Pet. 13, 85–86. Patent Owner argues Petitioner failed to meet its burden to properly establish that Clarke is entitled to the earlier priority date. PO Resp. 5–7, 51–52. Specifically, Patent Owner argues that Petitioner identified written description support for only *one* claim of Clarke and, thus, failed to do so for *all* claims of Clarke as required by controlling case law. *Id.* (citing *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015)); *see also* PO Sur-reply 6–7 (same). Petitioner disagrees with Patent Owner’s view of the applicable law. Pet. Reply 3–4.

We first address this key legal issue, i.e., whether written description support for *all* claims of a patent must be shown in a provisional application to gain the benefit of that application for purposes of qualifying as prior art

under § 102(e)(2). In *Dynamic Drinkware*, the petitioner (“Dynamic”) asserted that a patent (“Raymond”) was prior art under § 102(e)(2) by virtue of the priority date of a provisional application. 800 F.3d at 1377. Dynamic provided a comparison of Raymond to the claims of the challenged patent, and a comparison of the provisional application to the claims of the challenged patent. *Id.* at 1381. The Federal Circuit held that these showings were insufficient to establish that Raymond was prior art because “[n]owhere, however, does Dynamic demonstrate support in the Raymond provisional application for *the claims of the Raymond patent.*” *Id.* at 1381–82. Patent Owner relies on this sentence in *Dynamic Drinkware*, specifically the reference to the plural “claims.” PO Resp. 52.

As Petitioner notes (Pet. Reply 4), the decision in *Dynamic Drinkware* addressed a case in which no attempt had been made to show support for *any* claim of the reference patent. The question of whether support for one claim is sufficient, or whether support for all claims is required, was not before the court in *Dynamic Drinkware*. Thus, we are not persuaded that the use of the plural “claims” in the Federal Circuit’s opinion represents a holding that all claims of a patent must be supported in the provisional application’s disclosure to benefit from its priority date. The same holds true for the remaining authorities cited by Patent Owner. *See* PO Sur-reply 7 (citing *Amgen Inc. v. Sanofi*, 872 F.3d 1367 (Fed. Cir. 2017); *Ariosa Diagnostics, Inc. v. Illumina, Inc.*, 705 Fed. App’x 1002 (Fed. Cir. 2017)).

The Federal Circuit in *Dynamic Drinkware* began with the requirement that a patent must satisfy 35 U.S.C. § 119(e)(1) to gain the benefit of a provisional application filing date. *Dynamic Drinkware*, 800 F.3d at 1378. According to the Federal Circuit, this requirement

includes that “the specification of the provisional must ‘contain a written description of the invention . . . in such full, clear, concise, and exact terms,’ . . . to enable an ordinarily skilled artisan to practice the invention claimed in the non-provisional application.” *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294 (Fed. Cir. 2002) (quoting 35 U.S.C. § 112, first paragraph), *quoted in Dynamic Drinkware*, 800 F.3d at 1378.

Of particular note is the focus on “the *invention* claimed” in the non-provisional application (later issued as the reference patent). *Id.* (emphasis added). This is consistent with prior Federal Circuit precedent explaining that the rationale behind § 102(e) is that a patent should be “treated as prior art as of its filing date because at the time the application was filed in the Patent Office the inventor was presumed to have disclosed an invention which, but for the delays inherent in prosecution, would have been disclosed to the public on the filing date.” *In re Wertheim*, 646 F.2d 527, 536 (CCPA 1981); *see also id.* at 532 (discussing *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390 (1926), and that § 102(e) is “a codification of the rule of” the *Milburn* case).

Therefore, under the reasoning of these cases, a patent may be considered prior art as of the date of a provisional application so long as the provisional disclosed (sufficiently under § 112) the same invention eventually claimed in the patent. As a result, if the patent is shown to have at least *one* claim to an invention that is supported by the disclosure of a provisional application, it can be said that the provisional disclosed the same invention eventually claimed in the patent, and the patent may be considered prior art as of the filing date of the provisional under § 102(e)(2). Nothing in *Dynamic Drinkware* indicates a departure or change in this line of

reasoning from the *New Railhead* and *Wertheim* line of cases; to the contrary, the court in *Dynamic Drinkware* relied on those precedents for its decision. *See Dynamic Drinkware*, 800 F.3d at 1378, 1381.

That this is the correct interpretation of the case law is supported further by the reasoning of prior panels of the Board addressing this issue, with which we agree. *See, e.g., Polaris Indus. Inc. v. Arctic Cat Inc.*, IPR2016-01713, Paper 9 at 13 (PTAB Feb. 27, 2017). And as a panel of the Board noted in *Medtronic, Inc. v. Niazi Licensing Corporation*, requiring all claims of a patent to be supported by a provisional application to gain the benefit of its filing date would lead to the dubious result that a patent with two claims covering inventions disclosed earlier in two different provisional applications would be unable to be afforded the priority date of either provisional. IPR2018-00609, Paper 8 at 10–11 (PTAB Aug. 20, 2018) (citing *Ex Parte Mann*, Appeal No. 2015-003571, 2016 WL 7487271, at *6 (PTAB Dec. 21, 2016)).

In the present case, the parties do not dispute that Petitioner bears the burden of establishing that Clarke qualifies as prior art, including that the Clarke provisional application provides sufficient written description support for Clarke to confer the benefit of its priority date. The Petition indicates that “Clarke was filed within one year of the Clarke provisional’s filing, names at least one inventor in common, and includes a specific reference to the Clarke provisional.” Pet. 85. Petitioner also asserts that “at least claim 16 of Clarke is fully supported and enabled by the Clarke provisional,” and provides a chart identifying such support. *Id.* at 85–87. Further, as noted in our Decision on Institution (Inst. Dec. 43), the Petition provides parallel citations to Clarke and corresponding disclosures in the Clarke provisional

application (*see generally* Pet. 69–85) to demonstrate that the relevant disclosures of Clarke were carried over from the provisional. *See In re Giacomini*, 612 F.3d 1380, 1383 (Fed. Cir. 2010) (holding that a claim is unpatentable “if another's patent discloses the same invention, which was carried forward from an earlier U.S. provisional application or U.S. non-provisional application”); *Mann*, 2016 WL 7487271, at *5 (requiring a showing that the disclosure of the provisional provides support for the subject matter relied on to show obviousness).

Patent Owner does not dispute that the Clarke provisional provides sufficient § 112 support for claim 16 of Clarke, or that the provisional provides sufficient support for the subject matter in Clarke relied on by Petitioner to demonstrate obviousness. Upon review of the Petition and the full trial record, we agree with Petitioner and find that the Clarke provisional provides the requisite support for claim 16 and the disclosures relevant to Petitioner's obviousness grounds. Consequently, after considering the parties' arguments and the evidence identified in the Petition, we conclude that Petitioner has carried its burden to establish that Clarke qualifies as prior art under § 102(e)(2).

b. Independent Claim 10

According to Petitioner (Pet. 69–72), Clarke teaches an apparatus capable of processing data that comprises a performer name and a reference to a visual depiction of that performer, as recited in claim 10. Specifically, Petitioner cites Clarke's disclosure of “playback devices” (such as Blu-ray players), as well as computers and mobile devices, that access and retrieve metadata information. Ex. 1006, 2:30–61, 3:11–34. Clarke further discloses that such metadata can include “actor names for characters that appear in

individual scenes” of a movie. *Id.* at 16:14–17; *see id.* at Fig. 6A. In Figure 6C of Clarke, metadata is shown to include a small photograph of an actor on the screen (Mark Wahlberg). *Id.* at Fig. 6C. We agree with Petitioner and find that Clarke teaches the elements of the preamble of claim 10.

Patent Owner argues that Clarke fails to teach a visual depiction of a performer. PO Resp. 53–54. Again, however, Patent Owner’s argument is premised on its contention that the ’346 Patent precludes a visual depiction of a *character* from also being a visual depiction of a *performer*. *See id.*; PO Sur-reply 8–9. As discussed above, the evidence of record—including, most importantly, the Specification of the ’346 Patent—does not support Patent Owner’s contention. Thus, Patent Owner’s argument regarding the depictions in Clarke is unpersuasive.¹¹

Petitioner asserts the combination of Clarke and Reimer teaches receiving a user’s request for information identifying a performer in a video, as recited in claim 10. Pet. 72–75. The Petition relies on the same teachings of Reimer here as for its contention that Reimer teaches this limitation in the context of obviousness over Reimer and McIntire, discussed above. Further, as Petitioner notes (*id.* at 72), Clarke indicates that a user may operate a device to render media content, and the user “can elect to enhance the media playback with time based metadata,” such as by “mak[ing] a request” for

¹¹ Patent Owner notes, and we agree, that significant portions of the figures of Exhibit 1006 (Clarke) are illegible. PO Sur-reply 8. Patent Owner admits, however, that the image in Figure 6C, for example, is an image of the actor performing as the character in the video being played. *See id.* Dr. Reader, Patent Owner’s expert, also testified about Figure 6C that “[t]he page is about Mark Wahlberg, so it would make sense for it to be a picture of Mark Wahlberg.” Ex. 1101, 231:15–20.

such metadata from a service. Ex. 1006, 6:44–50. The Petition sets forth several reasons why a person of ordinary skill would have been motivated to combine these teachings, including that it constitutes a simple substitution of one known technique (Reimer’s request for actor information) for another similar technique (Clarke’s request for metadata) to obtain predictable results. Pet. 73–75 (citing *KSR*, 550 U.S. at 417). Although Patent Owner argues Clarke “teaches away” from the claimed user request and that the combination of Clarke and Reimer is based on impermissible hindsight, its positions are unpersuasive because they are conclusory and unsupported. PO Resp. 54–55. In particular, with regard to teaching away, Patent Owner fails to identify evidence indicating that a skilled artisan would have understood Clarke to “criticize, discredit, or otherwise discourage the solution claimed” in the ’346 Patent. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Based on the complete record, we find that this limitation is taught by the combination of Clarke and Reimer, and that an ordinary artisan would have been motivated to combine their teachings.

With respect to the limitation of “identifying a current location in the video,” Petitioner relies on Clarke’s discussion of “time stamps” that indicate the location and duration of an event, such as an actor’s presence in a particular scene. Pet. 75; *see* Ex. 1006, 4:16–24, 55–57. Such events, when they occur, can trigger supplementation of the movie with relevant metadata. Ex. 1006, 3:47–52. Thus, according to Petitioner, Clarke teaches identifying a current location in the video to determine whether an event should trigger metadata based on the time stamp. Pet. 75–76. Patent Owner does not dispute these contentions. We agree with Petitioner’s reasoning and find that this limitation is taught by Clarke.

Next, Petitioner asserts that Clarke teaches identifying a name of a performer associated with the current location in the video and retrieving a visual depiction of that performer, as well as providing them to the user, as recited in claim 10. Pet. 76–79. As shown in Figures 6A and 6C of Clarke, the names of actors in the current scene of a movie are displayed as metadata, which can also include a small photograph. Ex. 1006, Figs. 6A, 6C, 3:46–52. Patent Owner does not dispute these contentions beyond the arguments regarding Clarke’s visual depictions, which are unpersuasive as discussed above. On the full record, Petitioner has shown sufficiently that these limitations are taught by Clarke.

In conclusion, for the reasons set forth above and based on the complete record after trial, we find that the combination of Clarke and Reimer teaches each limitation of claim 10, and Petitioner has established by a preponderance of the evidence that claim 10 is unpatentable as obvious over these references.

b. Dependent Claims 11 and 12

Claim 11 depends from claim 10 and adds the limitation, “wherein the apparatus further performs the step of retrieving and providing, the user, a filmography corresponding to the identified name of the performer.”

Petitioner asserts that Clarke discloses retrieving and displaying a filmography of the depicted actor in Figures 6B and 6C. Pet. 81–82 (citing Ex. 1006, Figs. 6B, 6C, 16:30–32). Patent Owner does not dispute that Clarke teaches this limitation.

Claim 12 also depends from claim 10, adding the limitation, “wherein the apparatus further performs the step of pausing the playing of the video in response to the receiving of the request for information.” The Petition cites

a disclosure in Clarke that “the media content may be paused” when supplemental presentations are displayed, such as actor information. Ex. 1006, 17:15–19. Patent Owner does not dispute Petitioner’s contention that Clarke teaches this limitation.

Based on the parties’ arguments and evidence presented during trial, we agree with Petitioner and find that Clarke and Reimer teach each limitation of claims 11 and 12. Thus, we conclude a preponderance of the evidence shows that these claims are unpatentable as obvious over Clarke and Reimer.

c. Independent Claims 4 and 13

Independent claim 4 recites substantially the same elements as claim 10, but further recites additional elements relating to “a plurality of segment definitions each defining a video segment within a video.” Petitioner relies on the “time stamps” (i.e., the recited segment definitions) discussed above, which indicate the location and duration of an event, such as the presence of a particular character in a scene or the portion of a movie when a particular song is played. *See* Ex. 1006, 4:5–36. According to Petitioner, Clarke teaches that the current location is identified and used to determine whether a time stamp (segment definition) is triggered (i.e., coincides with the current location), for example, to retrieve metadata (such as actor information) associated with a particular event. Pet. 83–84 (citing Ex. 1006, 4:5–36, Fig. 8).

Independent claim 13 also recites substantially similar elements as claim 10, but further requires that the current location in the video, and the name of a performer associated with that location, are identified “continuously.” Additionally, the identified name and visual depiction of

the performer are “contemporaneously updat[ed]” as well as provided to the user “as the video continues to be played.” According to the Petition (Pet. 84–85), Clarke teaches these limitations by disclosing that the time stamps can be used to “automatically” activate triggers to “cause the rendering of associated information or content items.” Ex. 1006, 4:11–15. Petitioner argues this shows that Clarke teaches that information is continuously updated and provided to the user as time stamps automatically activate triggers. Pet. 84–85.

Patent Owner does not advance any arguments regarding these claims other than those already addressed above with respect to claim 10. Based on the complete record after trial, we agree with Petitioner and find that the combination of Clarke and Reimer teaches each limitation of claims 4 and 13. As a result, we conclude that, based on a preponderance of the evidence, these claims are unpatentable as obvious over Clarke and Reimer.

d. Remaining Challenged Claims

Claims 5 and 6 depend from claim 4, but otherwise recite the same limitations as claims 12 and 11, respectively. Petitioner relies on the same arguments and evidence as for claims 12 and 11 (*see* Pet. 85), and Patent Owner does not present any arguments specific to these claims. We are persuaded Petitioner demonstrates by a preponderance of the evidence that claims 5 and 6 would have been obvious in view of Clarke and Reimer for the same reasons discussed above for claims 11 and 12.

Claims 14–16 are method claims, but otherwise recite substantially the same elements as claims 4–6. Similarly, claims 17–19 are method claims reciting substantially the same limitations as claims 10–12, and claim 20 is a method claim reciting substantially the same limitations as

claim 13. Petitioner relies on the same arguments and evidence as for those corresponding claims, and Patent Owner does not argue these claims separately. We conclude Petitioner has shown claims 14–20 would have been obvious over Clarke and Reimer, by a preponderance of the evidence, for the same reasons discussed above for the corresponding claims. *See* Pet. 81–83, 85.

9. *Additional Patent Owner Arguments*

Patent Owner advances two additional arguments that are not specific to particular grounds of unpatentability. First, Patent Owner argues the Petition is defective because Petitioner fails to “admit to any differences between the prior art and the claims at issue, i.e., that any of the prior art references fail to disclose any one of the several claim limitations.” PO Resp. 7. We disagree. Patent Owner identifies no authority, nor are we aware of any such authority, holding that obviousness may only be asserted when one or more prior art references “fail to disclose” a claim limitation. *Graham* merely identifies “differences between the prior art and the claims at issue” (if any) as one of the underlying factual inquiries in the obviousness analysis; the Court does not require differences to exist to prove obviousness. *See* 383 U.S. 17–18. Indeed, the Federal Circuit has said that anticipation (i.e., no differences between a prior art reference and the claims) often is the “epitome of obviousness.” *E.g., Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983).

Second, Patent Owner asserts that the Petition advances a “statistical nightmare” of “voluminous and excessive number of grounds” because of “a multiplicity of combinations of allegations applied to each of the multiple limitations” in the challenged claims. PO Resp. 8–12 (quoting *Adaptics Ltd.*

v. Perfect Co., IPR2018-01596, Paper 20 at 15–16, 18–19 (PTAB Mar. 6, 2019)). After reviewing the Petition, we disagree. The Petition includes multiple arguments, some in the alternative, for many (but not all) limitations of some challenged claims. We determine, however, that the arguments are not excessive and are explained with sufficient particularity to put Patent Owner reasonably on notice of Petitioner’s positions.

D. Patent Owner’s Motion to Exclude (Paper 24, “Mot.”)

Patent Owner moves to exclude certain portions of Dr. Reader’s testimony during his deposition (*see* Ex. 1101) under Federal Rule of Evidence 403.¹² Mot. 2–11. More specifically, Patent Owner alleges the testimony in question is “prone to misunderstanding” and “prejudicial.”¹³ *Id.* at 1; *see* Paper 27 (“Mot. Reply”), 1, 3–4. According to Patent Owner, Petitioner’s questions were purportedly vague, ambiguous, improperly repetitive, and/or beyond the scope of Dr. Reader’s direct examination (i.e., his Declaration). *Id.*

¹² In its Reply in support of the Motion, Patent Owner further invokes Rule 611(b) as a basis for excluding the evidence in question. Mot. Reply 1. We determine this argument is untimely and waived because it was not included in the Motion, and, as a result, Petitioner did not have a reasonable opportunity to address it. *See* 37 C.F.R. §§ 42.5(a), 42.23(b), 42.64(c).

¹³ Patent Owner also alleges this testimony is “irrelevant,” but the Motion does not assert an objection based on Rule 402. *See* Mot. 1; Mot. Reply 3–4. Indeed, Rule 403 explicitly addresses *relevant* evidence by definition. *See* Fed. R. Evid. 403 (“The court may exclude relevant evidence if its probative value is substantially outweighed . . .”). To the extent Patent Owner intends to challenge the relevance of any of the testimony in question, we are not persuaded as a result.

Rule 403 has limited applicability, if any, to bench trials like this proceeding. *See, e.g., Schultz v. Butcher*, 24 F.3d 626, 632 (4th Cir. 1994) (holding that “in the context of a bench trial, evidence should not be excluded under 403” because the court can “hear relevant evidence, weigh its probative value and reject any improper inferences”). We also note that none of the testimony at issue directly formed part of the basis for any determination made in this Decision. Further, we are not persuaded by Patent Owner’s accusations of Petitioner “cherry-pick[ing]” only certain portions of Dr. Reader’s deposition testimony to support its arguments. Mot. Reply 2–3. That Petitioner would rely on the evidence most supportive of its positions is unremarkable and, more importantly, does not form a basis for excluding evidence under the Federal Rules of Evidence.

In sum, we determine that there is no appreciable risk of unfair prejudice, confusion of issues, or other reason to exclude this evidence under Rule 403. Rather, the panel is capable of assessing and weighing this evidence appropriately (and has done so). For the above reasons, we are not persuaded that the testimony at issue should be excluded and, thus, we deny Patent Owner’s Motion to Exclude.

CONCLUSION¹⁴

For the foregoing reasons, Petitioner has shown by a preponderance of the evidence that the challenged claims of the ’346 Patent are unpatentable, as summarized in the following table:

¹⁴ 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*

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
4–6, 10–20	103(a)	Thomas	4–6, 10–20	
4–6, 10–20	103(a)	Thomas, McIntire	4–6, 10–20	
4–6, 10–20	103(a)	McIntire, Thomas	4–6, 10–20	
4–6, 10–12, 14–19	103(a)	Reimer, McIntire	4–6, 10–12, 14–19	
13, 20	103(a)	Reimer, McIntire, Thomas	13, 20	
4–6, 10–20	103(a)	Clarke, Reimer	4–6, 10–20	
Overall Outcome			4–6, 10–20	

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the challenged claims of the '346 Patent are held unpatentable in view of the following asserted grounds:

Claims 4–6 and 10–20 as unpatentable under 35 U.S.C. § 103(a) over Thomas;

Claims 4–6 and 10–20 as unpatentable under 35 U.S.C. § 103(a) over Thomas in view of McIntire;

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), (b)(2).*

Claims 4–6 and 10–20 as unpatentable under 35 U.S.C. § 103(a) over
McIntire in view of Thomas;

Claims 4–6, 10–12, and 14–19 as unpatentable under 35 U.S.C.
§ 103(a) over Reimer in view of McIntire;

Claims 13 and 20 as unpatentable under 35 U.S.C. § 103(a) over
Reimer, McIntire, and Thomas; and

Claims 4–6 and 10–20 as unpatentable under 35 U.S.C. § 103(a) over
Clarke in view of Reimer;

FURTHER ORDERED that Patent Owner’s Motion to Exclude
(Paper 24) is *denied* as set forth above; and

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

IPR2018-01496
Patent 8,494,346 B2

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