

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SLING TV L.L.C. and
VUDU, INC.,
Petitioner,

v.

UNILOC 2017 LLC,
Patent Owner.

IPR2019-01367¹
Patent 8,407,609 B2

Before CHARLES J. BOUDREAU, DANIEL J. GALLIGAN, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

DIRBA, *Administrative Patent Judge*.

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

¹ Vudu, Inc., which filed a petition in IPR2020-00677, has been joined as a petitioner in this proceeding.

I. INTRODUCTION

Sling TV L.L.C. (“Sling”) filed a Petition seeking institution of *inter partes* review of claims 1–3 of U.S. Patent No. 8,407,609 B2 (Ex. 1001, “the ’609 patent”). Paper 2 (“Pet.”). Uniloc 2017 LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). After reviewing those papers, we determined that Petitioner had demonstrated a reasonable likelihood that it would prevail in proving that claims 1–3 of the ’609 patent are unpatentable, and we instituted an *inter partes* review of all challenged claims on all grounds set forth in the Petition. Paper 7 (“Institution Decision” or “Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 13, “PO Resp.”), and Sling filed a Reply (Paper 15, “Pet. Reply”). Vudu, Inc. (“Vudu”) was then joined as a petitioner (Paper 16), and Sling and Vudu are now collectively referred to as “Petitioner.” Patent Owner filed a Sur-Reply (Paper 18, “PO Sur-Reply”). An oral hearing in this proceeding was held on December 3, 2020, and a transcript of the hearing is included in the record. Paper 28 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1–3 of the ’609 patent are unpatentable under 35 U.S.C. § 103(a).

A. *Related Matters*

The parties identify various civil actions involving the ’609 patent that are or were pending in district court, including *Uniloc 2017 LLC v. Sling TV, LLC*, 1:19-cv-00278 (D. Colo.); *Uniloc 2017 LLC v. Vudu, Inc.*, 1:19-cv-00183 (D. Del.); *Uniloc 2017 LLC v. Netflix, Inc.*, 8:18-cv-02055 (C.D.

Cal.); *Uniloc 2017 LLC v. Google LLC*, 2:18-cv-00502 (E.D. Tex.). Pet. v–vi; PO Resp. 9–10; *see* Paper 19 (Petitioner’s Updated Mandatory Notices).

The ’609 patent is or was the subject of three other petitions for *inter partes* review. In IPR2020-00677, Vudu filed a petition that is substantively identical to the Petition, and the Board instituted that review and joined Vudu to this proceeding as Petitioner. Paper 16 (Joinder Order). Also, a petition filed by Netflix, Inc. and Roku, Inc. was instituted by the Board. *Netflix, Inc. v. Uniloc 2017 LLC*, IPR2020-00041 (“the 041 IPR”), Paper 10 (PTAB Mar. 25, 2020) (Institution Decision in the 041 IPR). A final written decision in the 041 IPR is being issued concurrently with this Decision. Finally, the ’609 patent was previously the subject of another petition for *inter partes* review that was discretionarily denied under 35 U.S.C. § 314(a). *Google LLC v. Uniloc 2017 LLC*, IPR2020-00115, Paper 8 (PTAB Mar. 27, 2020).

B. Real Parties in Interest

Sling states that it is owned (directly or indirectly) by Sling TV Holding L.L.C., DISH Network L.L.C., DISH Technologies L.L.C., and DISH Network Corporation. Pet. v. Vudu identifies each of the following companies as a direct or indirect owner (at some point in time): Walmart Inc., Fandango Media, LLC, NBCUniversal Media, LLC, Warner Bros. Entertainment Inc., Comcast Corporation, Warner Media, LLC, and AT&T Inc. Paper 16, 2 n.1 (citing IPR2020-00677, Papers 1, 8).

Patent Owner identifies no other real parties in interest. Paper 3, 1 (Mandatory Notice).

C. The Petition's Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 2):

Claims Challenged	35 U.S.C. §	References/Basis
1–3	103(a) ²	Jacoby, ³ Bland ⁴
1–3	103(a)	McTernan, ⁵ Robinson ⁶

Petitioner also relies on the testimony of Dr. James A. Storer to support its contentions. Ex. 1002.

D. Summary of the '609 Patent

The '609 patent is titled “System and Method for Providing and Tracking the Provision of Audio and Visual Presentations via a Computer Network.” Ex. 1001, code (54). The application that led to the '609 patent was filed on August 21, 2009, and claimed the benefit of a U.S. provisional application filed August 21, 2008. *Id.* at codes (22), (60).

The '609 patent discloses tracking a user computer's receipt of digital media presentations via a web page. Ex. 1001, code (57). An exemplary web page provided to a user's computer is shown in Figure 9, which is reproduced below:

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. Because the challenged patent was filed before March 16, 2013, we refer to the pre-AIA version of § 103.

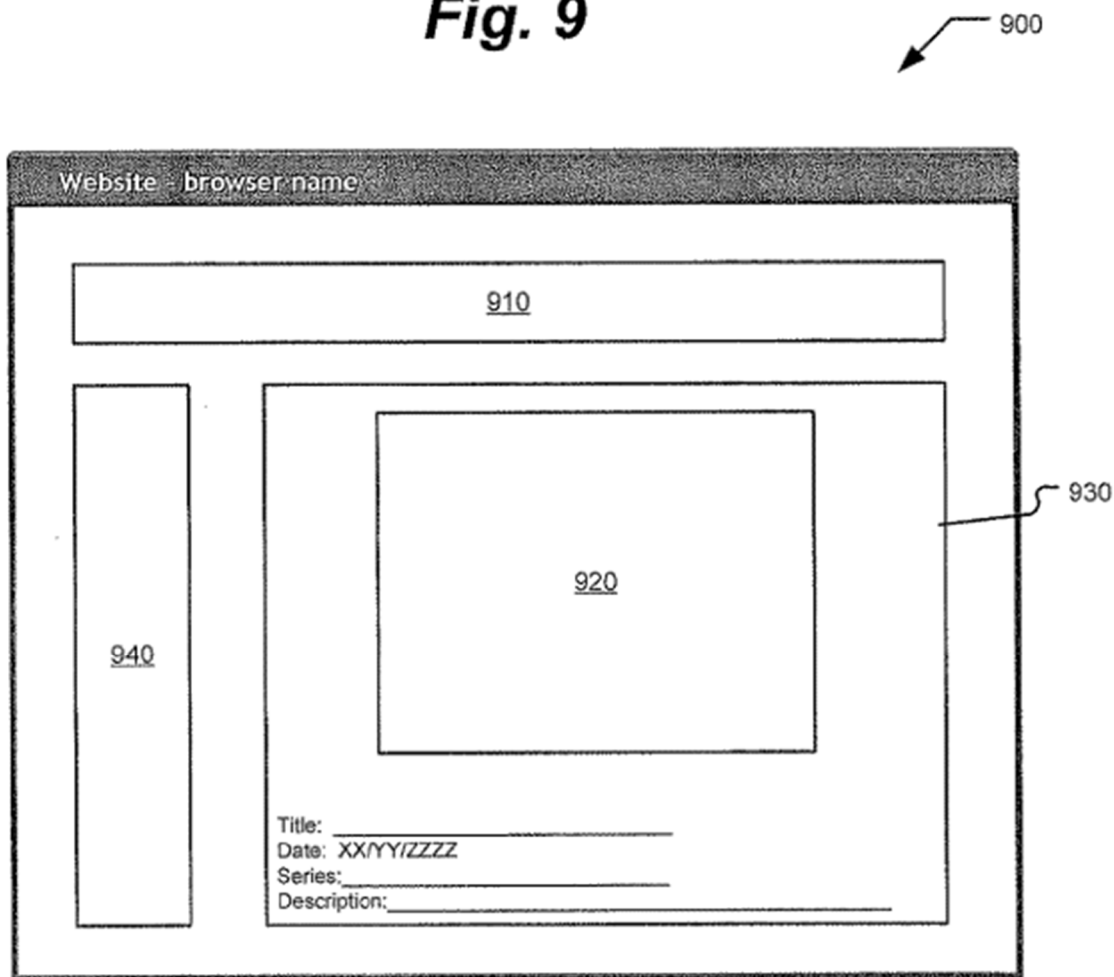
³ Jacoby, US 2004/0254887 A1, published Dec. 16, 2004 (Ex. 1006).

⁴ Bland et al., US 5,732,218, issued Mar. 24, 1998 (Ex. 1009).

⁵ McTernan et al., WO 01/89195 A2, published Nov. 22, 2001 (Ex. 1007).

⁶ Robinson et al., EP 0 939 516 A2, published Sept. 1, 1999 (Ex. 1008).

Fig. 9



Ex. 1001, Fig. 9. As shown above, Figure 9 depicts a web page (900) with portion 930 (including portion 920, where a presentation selected by the user may be displayed) and portions 910 and 940, which “may be used to display related information, such as advertisements.” *Id.* at 11:59–12:6, 12:12–14. In order to appropriately value the advertising space, the ’609 patent seeks to “identify how long the media was actually, or may typically be played.” *Id.* at 12:6–15.

The presentation, which is displayed in portion 920, may be supplied by the system or may be linked by the system (with the content stored on a third party’s computer system). Ex. 1001, 12:64–66; *see id.* at 7:25–38

(identifying challenge of tracking presentation “[w]here content is housed elsewhere and linked to by computers 30”). “Regardless, page 900 may include a timer applet,”⁷ which is “used to indicate when a pre-determined temporal period has elapsed.” *Id.* at 12:66–67, 13:5–6. For example, the temporal period may be ten, fifteen, or thirty seconds. *Id.* at 13:6–8. “[W]hen the applet determines the predetermined temporal period has elapsed, it signals its continued execution to system 20.” *Id.* at 13:10–12. In addition, “the applet may cause [a] cookie [received with web page 900], or associated data, to be transmitted from the user’s computer 20 to system 30.” *Id.* at 13:14–21; *see id.* at Fig. 1 (illustrating user computers 20 and server computers 30). The system logs receipt of the applet’s signal and logs the client’s cookie (or data associated with it). *Id.* at 13:12–13, 13:21–23. For example, “a table entry” may be made identifying the user, the page, and total time on that page. *Id.* at 13:24–30.

According to the ’609 patent, this “provide[s] the capability to know that a viewer began viewing a particular show at a certain time, and to know when a user began viewing a different page, or show, thereby providing knowledge of how long a particular viewer spent on a particular page.” Ex. 1001, 13:43–48. The ’609 patent states that this knowledge allows the cost of “advertising displayed on a given page” to correspond to the length of time that page is viewed. *Id.* at 13:49–14:2; *see also id.* 7:42–52, 11:53–58.

⁷ “‘Applet,’ as used [in the Specification], generally refers to a software component that runs in the context of another program” Ex. 1001, 12:67–13:3.

E. Challenged Claims

The Petition challenges claims 1–3 of the '609 patent. Claim 1 is independent, and claims 2 and 3 depend from claim 1. Independent claim 1 is reproduced below with bracketed element letters added for reference:

1. [pre] A method for tracking digital media presentations delivered from a first computer system to a user's computer via a network comprising:

[a] providing a corresponding web page to the user's computer for each digital media presentation to be delivered using the first computer system;

[b] providing identifier data to the user's computer using the first computer system;

[c] providing an applet to the user's computer for each digital media presentation to be delivered using the first computer system, wherein the applet is operative by the user's computer as a timer;

[d] receiving at least a portion of the identifier data from the user's computer responsively to the timer applet each time a predetermined temporal period elapses using the first computer system; and

[e] storing data indicative of the received at least portion of the identifier data using the first computer system;

[f] wherein each provided webpage causes corresponding digital media presentation data to be streamed from a second computer system distinct from the first computer system directly to the user's computer independent of the first computer system;

[g] wherein the stored data is indicative of an amount of time the digital media presentation data is streamed from the second computer system to the user's computer; and

[h] wherein each stored data is together indicative of a cumulative time the corresponding web page was displayed by the user's computer.

Ex. 1001, 14:17–45.

II. ANALYSIS

A. *Principles of Law*

In an *inter partes* review, the petitioner has the burden of proving unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). That burden never shifts to the patentee. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A patent claim is unpatentable under 35 U.S.C. § 103(a) 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 legal 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 ordinary skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness.⁸ *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR*, 550 U.S. at 418.

B. *The Level of Ordinary Skill in the Art*

Petitioner asserts that the level of ordinary skill in the art corresponds to “a bachelor’s degree in electrical engineering, computer science, or a

⁸ The record does not include allegations or evidence of objective indicia of obviousness or nonobviousness.

similar field with at least two years of experience in web page and Internet technology or a person with a master's degree in electrical engineering, computer science, or a similar field with a specialization in web page and Internet technology.” Pet. 7 (citing Ex. 1002 ¶ 49). Patent Owner “does not offer a competing definition” of a person of ordinary skill in the art. PO Resp. 12.

Petitioner's proposal (unopposed by Patent Owner) is supported by the testimony of Dr. Storer and is consistent with the '609 patent specification and the asserted prior art. *See Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666–67 (Fed. Cir. 2000) (identifying factors); *see also Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (The “level of skill in the art is a prism or lens through which a judge, jury, or the Board views the prior art and the claimed invention.”). Accordingly, we adopt the level of ordinary skill as articulated by Petitioner, except that we remove the qualifier “at least” because it expands the range indefinitely without an upper bound. *Accord* Inst. Dec. 7 (adopting same position).⁹

C. Claim Construction

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019).

The Petition proposes constructions for four claim terms and phrases: “applet,” “computer system,” “amount of time the digital media presentation

⁹ In the 041 IPR, we adopt a slightly different definition of a person of ordinary skill in the art. Both definitions are substantially the same for purposes of these proceedings. In particular, our analysis and conclusions in this Decision would be the same regardless of which definition is adopted.

data is streamed,” and “cumulative time the corresponding web page was displayed by the user’s computer.” Pet. 7–11 (emphasis omitted). Before institution, Patent Owner submitted that none of these claim terms or phrases required express construction. Prelim. Resp. 5; *but see id.* at 6–7 (disputing Petitioner’s proposed construction of “computer system”). In the Institution Decision, we agreed with Patent Owner that no claim terms or phrases required construction. Inst. Dec. 8.

The parties’ post-institution briefs dispute whether Petitioner properly construed the term “computer system” (PO Resp. 14; Pet. Reply 3–5; PO Sur-Reply 1–3), but the parties agree that the Board need not construe this term in this proceeding (PO Resp. 13, 15; Pet. Reply 5; Tr. 16:25–17:18, 31:16–26). We agree that it is not necessary for us to construe this term: although the parties do not agree on the term’s meaning, resolution of their dispute would not affect this Decision.¹⁰ Accordingly, we do not expressly construe the term “computer system,” and we apply the plain and ordinary meaning of that term. *See* Tr. 17:19–23, 32:1–6 (no objection to using the term’s plain and ordinary meaning).

In addition, Patent Owner submits two district court orders analyzing the construction of claim terms and phrases in the ’609 patent. PO Resp. 10 (citing Ex. 2001 (Order in *Uniloc 2017 LLC v. Netflix, Inc.*, 8:18-cv-02055 (C.D. Cal.)); Ex. 2002 (Order in *Uniloc 2017 LLC v. Google LLC*, 2:18-cv-

¹⁰ For example, Patent Owner does not contend that the cited references fail to disclose a “computer system.” *See generally* PO Resp. Although Patent Owner argues that the Petition fails to show a second computer system *distinct* from the first computer system (*id.* at 31–33), resolution of that dispute is not affected by the meaning of the term “computer system,” as we explain in more detail in Section II.D.3.g, *infra*.

00502 (E.D. Tex.)); *see* Consolidated Trial Practice Guide 47 (Nov. 2019) (“Consolidated TPG”)¹¹ (“Parties should submit a prior claim construction determination by a federal court or the ITC in an AIA proceeding as soon as that determination becomes available.”). We have reviewed and considered the district courts’ orders. *See* Ex. 2001, 6, 14–18, 26–27; Ex. 2002, 57–78; 37 C.F.R. § 42.100(b) (“Any prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record in the *inter partes* review proceeding will be considered.”).

However, given the issues presented in this proceeding, this Decision need not—and does not—expressly construe any claim terms or phrases. *See* PO Resp. 13 (stating that “the Board need not expressly construe any claim term”); Pet. Reply 23 (observing that Patent Owner “neither relies on nor asks the Board to adopt any of the constructions from the district court orders”); Tr. 17:24–18:15, 37:9–22; *see also, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness in view of McTernan and Robinson

Petitioner contends that claims 1–3 are rendered obvious by the combination of McTernan and Robinson. Pet. 40–63, 69–73. Patent Owner argues the Petition fails to show that the combination teaches element 1[f] (*see infra* § II.D.3.g) and fails to show a sufficient motivation to combine the references in the manner proposed (*see infra* § II.D.3.i). PO Resp. 31–43.

¹¹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

For the reasons explained below, we are persuaded by a preponderance of the evidence that Petitioner has shown that the subject matter of claims 1–3 would have been obvious over McTernan and Robinson.

1. McTernan (Ex. 1007)

McTernan is titled “System and Method for Secure Delivery of Rich Media.” Ex. 1007, code (54). McTernan delivers “rich media resources” to client devices and tracks “show viewership” using “heartbeat packets” sent by client devices during playback of the media resources. *Id.* at code (57).

McTernan’s system is depicted in Figure 1, reproduced below.

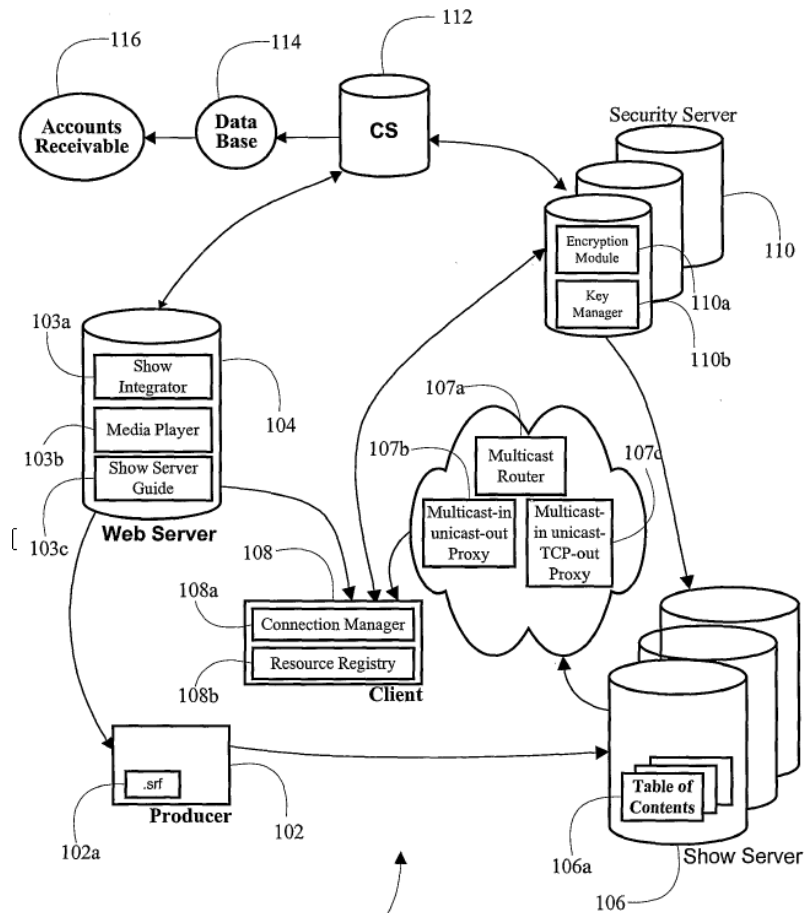


Fig. 1

As shown above, Figure 1 includes producers 102, web servers 104, show servers 106, client device 108, security servers 110, and central server 112. Ex. 1007, 12:12–15.

Producers 102 create rich media presentations and send the associated files to show servers 106. *Id.* at 12:22–23, 14:2–3. Show servers 106 upload the files to security servers 110 for encryption and then store the encrypted files for future transmission to requesting clients 108. *Id.* at 11:4–6, 14:6–10, 15:2–3. Security servers 110 store the encryption keys. *Id.* at 14:7–15:2.

“Web server 104 serves HTML pages to Client devices 108 containing links to one or more available shows hosted by Show Server 106.” Ex. 1007, 15:14–15. “When a client 108 requests the transmission of content by selecting a link presented on a Web page, an appropriate Show Server Guide 103c is transmitted” that lists show servers 106 capable of transmitting the requested content. *Id.* at 16:22–17:2. Client 108 connects with a listed show server 106 (*id.* at 17:2–4, 17:17–18), and the client’s media player (player 103b) receives the encrypted rich media resources from that show server 106 (*id.* at 18:3–9). Client 108 requests the resources’ encryption keys from security server 110 (*id.* at 18:10–11), and security server 110 provides the appropriate encryption keys and a unique session identifier (“session id”) to client 108 (*id.* at 18:13–17).

During the show, media player 103b (running on client 108) sends “heartbeat packets” to security server 110 at regular intervals. Ex. 1007, 18:22–19:1. The heartbeats “consist of the unique session id and a time stamp” and “are generated and transmitted a [sic—at] regular intervals . . . e.g., every 30 seconds, every minute, etc.” *Id.* at 19:1–4. “The

time stamp is used to measure the elapsed time from the beginning of the viewing of a show to the generation of the heartbeat packet. In this manner, the system is capable of generating statistics regarding how long each show is viewed for by each client.” *Id.* at 19:4–6. According to McTernan, “[b]y having each Player 103b update the Security Server 110 with viewing statistics, a mechanism is provided whereby precise measurements of show viewership can be made.” *Id.* at 19:10–12; *see also id.* at 9:22–23 (“These heartbeat data packets are used to calculate the total time that a user is watching a show . . .”). Security server 110 retains this data and provides it to central server 112, and the data can be used for billing purposes. *Id.* at 19:13–20.

2. *Robinson (Ex. 1008)*

Robinson is titled “User communication and monitoring system for computer networks.” Ex. 1008, code (54). Robinson describes a user communication and monitoring system (UCMS) that measures the duration of a visitor’s presence on a web page. *Id.* ¶¶ 4–7. “UCMS generates information and enables knowledge on arrival and departure time of visitors, and thus of duration of visit,” and Robinson states that “visit duration information is potentially more valuable and accurate in monitoring the ‘success’ of WWW sites, and in redesigning layout and marketing strategy.” *Id.* ¶ 18.

Robinson measures the visit duration using “heartbeats” sent by an applet on the client’s machine. Ex. 1008 ¶¶ 8–9. “When a user arrives on a web page,” the user’s computer receives the web page and “a small Java applet which is able to communicate with the server side UCMS program.” *Id.* ¶ 20. The client sends a message to indicate the starting time of the

applet, and the server updates a log-file with the LOGIN-time and an “identifier and page-indicator.” *Id.* ¶¶ 20, 22. After the page is downloaded, “the applet regularly sends pulse message[s] [i.e., heartbeats] to the server,” which indicate that the user is online. *Id.* ¶ 23. “[T]he applet in the client updates its existence at intervals e.g. of 1 second (generally in the range 0,001 – 5 min).” *Id.* ¶ 28. If the server fails to receive a heartbeat pulse, it assumes “the client is not on-line anymore,” and “updates the log-file.” *Id.* ¶ 23. “The log-file consists minimally of information about the login and logout times of any web page (with identifier and page-indicator) to which the applet has been added,” and the log-file can be used for “real time monitoring of users or collecting long-term statistics or for security reasons.” *Id.* ¶ 21 (emphasis omitted); *see id.* ¶ 31 (“[T]he same Java applet can be used with all pages each page containing unique identification variables.”); *see also id.* ¶ 24 (deleting applet before new web page is downloaded).

3. Independent Claim 1

a. 1[pre]: “A method for tracking digital media presentations delivered from a first computer system to a user’s computer via a network comprising”

Petitioner asserts that McTernan discloses the preamble of claim 1 (Pet. 41–45),¹² and Patent Owner has not argued otherwise (*see generally* PO Resp.).

Petitioner’s assertions are supported by the cited evidence and are persuasive. McTernan’s web server 104, security servers 110, and central

¹² Because Petitioner has shown sufficiently that the recitations in the preamble are satisfied by McTernan, we need not determine whether the preamble is limiting. *See Vivid Techs.*, 200 F.3d at 803.

server 112 collectively teach a first computer system. *E.g.*, Ex. 1007, 10:22–11:18, 12:12–15, Fig. 1; *see* Pet. 41–42 (mapping these servers to the claimed “first computer system”). These servers facilitate the delivery of rich media resources (the claimed “digital media presentations”) to client device 108 (the claimed “user’s computer”) via data network 100. *E.g.*, Ex. 1007, code (57), 9:12–20, 12:12–21, Fig. 1. McTernan’s security servers 110 and central server 112 track delivery of the media resources using heartbeat packets generated by the client during playback. *E.g.*, *id.* at code (57), 18:22–19:6. Accordingly, we are persuaded that McTernan discloses the preamble.

b. 1[a]: “providing a corresponding web page to the user’s computer for each digital media presentation to be delivered using the first computer system”

Petitioner asserts that McTernan discloses element 1[a] (Pet. 45–47), and Patent Owner has not argued otherwise (*see generally* PO Resp.).

Petitioner’s assertions are supported by the cited evidence and are persuasive. McTernan states that “Web Server 104 serves HTML pages to Client devices 108 containing links to one or more available shows.” Ex. 1007, 15:14–15; *see id.* at 22:6–12 (web pages may be encoded in Hypertext Markup Language (HTML)). McTernan discloses “providing a corresponding web page for each digital media presentation,” as claimed, for two reasons that are each independently sufficient. First, McTernan discloses that the HTML pages may contain a link to “one . . . available show[.]” *Id.* at 15:14–15; *see* Ex. 1002 ¶ 190. Second, after client 108 selects one of these links, McTernan’s web server 104 provides “Show Server Guide 103c . . . listing all Show Servers 106 connected to the

network 100 that are capable of transmitting the content requested by the client 108.” Ex. 1007, 16:22–17:2; *see id.* at 23:15–17; Ex. 1002 ¶ 191 (testifying that an ordinary artisan would have understood the show server guide to be provided on a web page). Accordingly, we are persuaded that McTernan discloses element 1[a].

c. 1[b]: “providing identifier data to the user’s computer using the first computer system”

Petitioner asserts that McTernan discloses element 1[b] (Pet. 47–48), and Patent Owner has not argued otherwise (*see generally* PO Resp.).

Petitioner’s assertions are supported by the cited evidence and are persuasive. McTernan’s security server 110 sends a session identifier (the claimed “identifier data”) to client device 108. Ex. 1007, 18:15–16, Fig. 4 (step 402). “The session id is a reference to the unique id of the Player 103b and the unique id of the show being viewed.” *Id.* at 18:16–17; *see id.* at 15:21–22 (“The player and plug-in 103b are encoded with an identifier to uniquely identify the player and plug-in and thereby associate it with the Client 108.”). Accordingly, we are persuaded that McTernan discloses element 1[b].

d. 1[c]: “providing an applet to the user’s computer for each digital media presentation to be delivered using the first computer system, wherein the applet is operative by the user’s computer as a timer”

Petitioner asserts that McTernan and the McTernan-Robinson combination each disclose element 1[c] (Pet. 48–53), and Patent Owner has not argued otherwise (*see generally* PO Resp.). Petitioner’s assertions are supported by the cited evidence and are persuasive.

We are persuaded that a person of ordinary skill in the art would have understood McTernan's media player 103b to disclose the claimed applet. *See* Pet. 49–50. McTernan describes media player 103b as a “plug-in or other software add-on” that can be “loaded into the client's content viewer.” Ex. 1007, 22:14–18; *see also id.* at 15:13–19, 22:18–23:5; Ex. 1002 ¶ 196 (testifying that an ordinary artisan “would have understood that a ‘plug-in’ or ‘add-on’ runs in the context of another program, such as a browser”). Also, Dr. Storer testifies that an ordinary artisan would have understood McTernan to disclose providing a media player “for each presentation to be delivered,” as claimed, because “Mc[T]ernan does not require the client 108 to possess a media player in advance.” Ex. 1002 ¶ 197 (citing Ex. 1007, 15:16–19). We credit Dr. Storer's testimony because it is logical and consistent with McTernan's disclosure. Finally, media player 103b is “operative . . . as a timer,” as claimed, because it generates periodic heartbeat data packets that each include a time stamp “used to measure the elapsed time from the beginning of the viewing of a show to the generation of the heartbeat packet.” Ex. 1007, 18:22–19:5; *see also id.* at 9:21–10:2. Accordingly, we are persuaded that McTernan discloses element 1[c].

Moreover, we are persuaded that Robinson discloses an applet, as claimed. *See* Pet. 50–51. After arriving on a web page, Robinson's client downloads “a small Java applet” that periodically sends heartbeats to a server. Ex. 1008, code (57), ¶¶ 20, 22, 28. Robinson's server uses these heartbeats “to make an accurate calculation of the client leaving time and of visit duration.” *Id.* ¶ 9; *see id.* ¶¶ 20–23 (server maintains a log-file with “identifier and page-indicator” and timing information). Robinson's applet “can be used with all pages[,] each page containing unique identification

variables.” *Id.* ¶ 31; *see also id.* ¶ 24 (stating that applet is deleted from the client before a new web page is downloaded).

We are also persuaded that it would have been obvious to combine Robinson’s applet with McTernan’s system. *See* Pet. 69–70. McTernan and Robinson both disclose software that instructs a client to periodically provide heartbeats to a server for tracking purposes. Ex. 1007, code (57); Ex. 1008, code (57). McTernan’s client retrieves “rich media plug-in and stand-alone player 103b” from web server 104 (Ex. 1007, 15:17–19), and similarly, Robinson’s client receives an applet when downloading a web page’s HTML code (Ex. 1008 ¶ 22). Dr. Storer testifies that a person of ordinary skill would have been motivated to use an applet, as disclosed in Robinson, in place of McTernan’s software, because it would have been “a simple substitution of one known element . . . for another” and would “obtain predictable results.” Ex. 1002 ¶ 234. Dr. Storer also testifies that use of an applet would “simplify the method of providing a client with software for generating heartbeat packets” and a person of ordinary skill in the art would have known how to provide an applet using McTernan’s web server. *Id.* ¶¶ 235–236 (citing Ex. 1008 ¶¶ 19, 22, 31, 41). We credit this testimony because it is logical and consistent with and supported by the disclosure in Robinson. Accordingly, we are also persuaded that the McTernan-Robinson combination discloses element 1[c].

e. 1[d]: “receiving at least a portion of the identifier data from the user’s computer responsively to the timer applet each time a predetermined temporal period elapses using the first computer system”

Petitioner asserts that McTernan and the McTernan-Robinson combination each disclose element 1[d] (Pet. 53–54), and Patent Owner has

not argued otherwise (*see generally* PO Resp.). Petitioner's assertions are supported by the cited evidence and are persuasive.

McTernan's security server 110 receives heartbeat packets, which contain the unique session identifier, from media player 103b at regular intervals ("e.g., every 30 seconds, every minute, etc."). Ex. 1007, 18:22–19:12, Fig. 4 (steps 408, 410); *see also id.* at 9:21–10:3. Accordingly, we are persuaded that McTernan discloses element 1[d].

In addition, Robinson's server receives heartbeats from the client's applet at regular intervals. Ex. 1008 ¶¶ 20, 23; *see id.* ¶ 28 (noting that "the applet in the client updates its existence at intervals e.g. of 1 second"). Robinson's server maintains a log-file to determine whether a client has stopped sending heartbeat pulses, which indicates that Robinson's heartbeats include information that uniquely identifies the client and the web page. *See id.* ¶¶ 21 ("The log-file consists minimally of information about the login and logout times of *any* web page (with identifier and page-indicator) to which the applet has been added."), 22 ("Minimally, with the time information, the server saves some kind of identifier and page-indicator."), 23 ("The server reacts to cessation of heartbeat pulses by . . . updat[ing] the log-file and refus[ing] all connection attempts to that client."), 31 (noting pages can each contain "unique identification variables"). Dr. Storer testifies that, based on Robinson's disclosure, a person of ordinary skill in the art "would understand that the client provides the page-indicator with the heartbeats to allow the UCMS server to save the timing information with the page-indicator." Ex. 1002 ¶ 207 (citing Ex. 1008 ¶¶ 5, 8, 10–23, 28, 31). We credit this testimony because it is logical and supported by Robinson's disclosure and because we perceive (and Patent Owner identifies) no

evidence to the contrary. Accordingly, we are persuaded that Robinson discloses that the applet causes the client to send heartbeats (that include a page identifier) to the server at regular intervals.

Further, as explained above, we are persuaded that it would have been obvious to combine Robinson's applet with McTernan's system. *See supra* § II.D.3.d (analyzing element 1[c]). In addition, as explained below, we are persuaded that it would have been obvious to combine Robinson's heartbeats (which track time on a page) and McTernan's system (which tracks time a show is viewed). *See infra* § II.D.3.i (analyzing element 1[h]). Accordingly, we are also persuaded that the McTernan-Robinson combination discloses element 1[d].

f. 1[e]: “storing data indicative of the received at least portion of the identifier data using the first computer system”

Petitioner asserts that McTernan discloses element 1[e] (Pet. 55–56), and Patent Owner has not argued otherwise (*see generally* PO Resp.).

Petitioner's assertions are supported by the cited evidence and are persuasive. In particular, McTernan's security server 110 “stores received heartbeat packets . . . indexed according to the packet's unique session id.” Ex. 1007, 25:16–17, Fig. 4 (step 410); *see also id.* at 25:17–20 (stating that central server 112 retrieves the stored data from security server 110). Accordingly, we are persuaded that McTernan discloses element 1[e].

- g. 1[f]: “wherein each provided webpage causes corresponding digital media presentation data to be streamed from a second computer system distinct from the first computer system directly to the user’s computer independent of the first computer system”*

Petitioner asserts that McTernan discloses element 1[f]. Pet. 56–59 (citing *id.* at 41–45). Patent Owner contends that the Petition fails to show that McTernan teaches “a second computer system distinct from the first computer system” (PO Resp. 31–34), but does not dispute Petitioner’s showing for the remainder of this element (*see generally id.*).

First, we address the undisputed aspects of this element—i.e., “wherein each provided webpage causes corresponding digital media presentation data to be streamed from a second computer system.” We find Petitioner’s assertions regarding these claimed aspects are supported by the cited evidence and persuasive. *See* Pet. 56–59. McTernan teaches that its web server 104 provides web pages corresponding to each digital media presentation. *See supra* § II.D.3.b (analyzing element 1[a]). After selecting a link on this web page, client 108 initiates a connection with show server 106, receives the encrypted resource, obtains the necessary encryption key(s), and ultimately plays the media resource. *E.g.*, Ex. 1007, code (57), 9:12–20. Dr. Storer testifies that a person of ordinary skill in the art would have understood the media resources “to be streamed,” as required by the claim, based on McTernan’s disclosure of “providing content from show server 106 to client 108 via a UDP connection.” Ex. 1002 ¶ 215 (citing Ex. 1007, 5:1–10; Ex. 1001, 4:43–47). We credit this testimony because it is consistent with the cited evidence and because we perceive (and Patent Owner identifies) no evidence to the contrary. Accordingly, we are

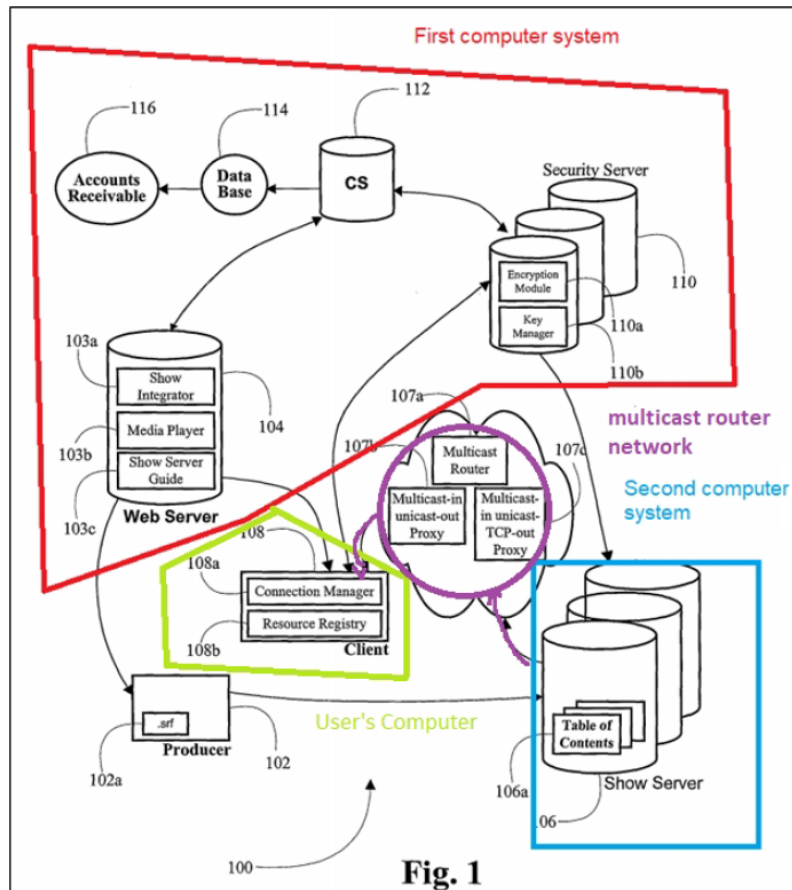
persuaded that McTernan discloses “wherein each provided webpage causes corresponding digital media presentation data to be streamed from a second computer system,” as required by element 1[f].

Next, we turn to the aspects of this element that are disputed by the parties—i.e., “stream[ing] from *a second computer system distinct from the first computer system* directly to the user’s computer independent of the first computer system” (emphasis added).

Petitioner contends that the claimed “second computer system” is taught by McTernan’s show servers 106 and, as noted above, that the claimed “first computer system” is taught by web server 104, security servers 110, and central server 112. Pet. 41–42. For the requirement that these systems be “distinct,” Petitioner refers to its discussion of the preamble (*id.* at 56), which states:

[A person of ordinary skill in the art] would understand that show servers 106 are “distinct” from the first computer system and are not under common control. Figure 1 illustrates show servers 106 as separate servers with separate functionality. Mc[T]ernan does not describe show servers 106 as being under control of the central server 112[, which controls the servers in the “first computer system”].

Id. at 43 (citations omitted). Petitioner argues that show server 106 streams directly to client 108 independent of the first computer system, as required, because the “stream goes from show server 106 to client 108 via network 107, not web server 104, 110, or 112.” *Id.* at 56. To illustrate, Petitioner annotates McTernan’s Figure 1 (*id.* at 57), as shown below:



Petitioner’s annotation of Figure 1 (reproduced above) “highlight[s] the streaming of the digital media presentation from the show server 106 through multicast router network 107 and not via servers 104, 110, or 112.”
Id. Petitioner further contends:

Mc[T]ernan confirms that the digital media presentation is streamed “from a second computer system [show servers 106] . . . directly to the user’s computer independent of the first computer system.” “Client 108 . . . negotiate[s] and maintain[s] a connection with Show Servers 106, which provide content used in delivering a presentation or show.” Ex[1007] 16:9-21 (emphasis added); *id.* (the connection between client 108 and show servers 106 can be multicast, unicast UDP, or unicast TCP); *id.* 17:7-16 (describing communication between client 108 and show servers 106 via multicast router network 107).
Id. at 57–58 (emphasis omitted; most alterations in original).

Patent Owner contends that Petitioner has not met its burden to show that McTernan discloses “a second computer system distinct from the first computer system,” as required by the claim. PO Resp. 31–33. Patent Owner argues that Petitioner fails “to show that there is separate control of two different systems, which would be required under [Petitioner’s] interpretation of ‘computer system.’” *Id.* at 32. Patent Owner also argues that McTernan “implies a single operator or common control of the entire system,” as shown by the interaction between McTernan’s show server 106 and its security server 110. *Id.* (citing Ex. 1007, 11:4–6). Patent Owner asserts that “the grounds presented in the Petition are based on Petitioner’s argument that the alleged ‘first computer system’ and ‘second computer system’ are distinct because they are not under common control.” *Id.* at 33 (citing Pet. 43, 56); *see also* PO Sur-Reply 13–14.

Having considered the parties’ arguments and the evidence presented, we find that Petitioner has shown by a preponderance of the evidence that McTernan’s show server 106 is “distinct from” the first computer system (i.e., security server 110, web server 104, and control server 112) and that show server 106 streams “directly to” client 108 “independent of” the first computer system, as required by the claim. McTernan teaches that show servers 106 are separate from (and different than) the servers in the first computer system, and McTernan’s show servers 106 perform different functions than web server 104, security servers 110, and central server 112. *E.g.*, Ex. 1007, Fig. 1, 12:12–15, 14:6–15, 17:7–18:9; *see* Pet. 43 (“Figure 1 illustrates show servers 106 as separate servers with separate functionality.”); *see also* Ex. 1002 ¶ 183 (testifying that a person of ordinary skill in the art would understand McTernan’s show servers to be distinct

from the first computer system). McTernan's client 108 connects with a particular show server 106 independently of its communications with web server 104 and security servers 110 (*e.g.*, Ex. 1007, 16:9–16, 17:2–16) and receives media resources from show server 106 via that connection (*e.g.*, *id.* at 17:17–18:9, Fig. 1).

Patent Owner arguments to the contrary are misplaced. *See* PO Resp. 32 (“Petitioner has not met its burden to show that there is separate control of two different systems . . .”). It does not matter whether McTernan teaches that its servers are separately controlled. This may be one way to show “distinct” systems, but it is not a prerequisite. *See* Tr. 33:4–11, 35:8–23 (acknowledging that control is one way, but not the only way, to show that systems are distinct).¹³ According to Patent Owner, separate control is required by Petitioner's construction of the term “computer system,” but the Institution Decision identifies the logical errors underlying this argument.¹⁴ It explains:

Patent Owner's argument that show servers 106 are not “distinct” from web server 104 and security servers 110 is premised on an erroneous assumption—specifically, Patent Owner assumes that the first and second computer systems cannot have a common operator or be under common control. Patent Owner does not provide support for this interpretation,

¹³ During the oral hearing, the meaning of the term “distinct” was discussed, but the parties agreed that it should have its plain and ordinary meaning (and did not propose competing constructions for the term). *See* Tr. 17:24–18:15, 30:14–31:15, 32:7–33:10, 35:8–23. Thus, on this record, we determine that the parties' dispute is whether the reference teaches the claim limitation, rather than the meaning of the term “distinct.”

¹⁴ The Response repeats this argument from the Preliminary Response. *Compare* Prelim. Resp. 16–17, *with* PO Resp. 31–33.

but rather contends that it flows from Petitioner’s proposed construction of the term “computer system.” We disagree.

Petitioner construes a “computer system” as “one or more computing devices having a common operator or under common control.” Pet. 8–9. Contrary to Patent Owner’s assumption, we do not understand the proposed construction to *prevent* two distinct computer systems *from having* a common operator or being under common control. An example will illustrate: assume that four computing devices (A, B, C, and D) are operated by the same entity. Devices A and B qualify as a computer system under Petitioner’s proposed construction—A and B are computing devices that have a common operator. Similarly, devices C and D would qualify as a computer system, and because they are not devices A and B, they would be a *different* computer system than the system of A and B. As a result, under Petitioner’s proposed construction, two “computer systems” can be identified that are operated by the same entity. And Petitioner’s proposal provides no basis for concluding that these two computer systems are not “distinct,” as argued by Patent Owner.

Moreover, Patent Owner does not identify (and we do not perceive) any support in the record for Patent Owner’s interpretation of claim 1. The relationship between the first and second computer systems is defined by the claim. In particular, claim 1 specifies that the “second computer system [is] *distinct* from the first computer system” and that a presentation is streamed from the second computer system “directly to the user’s computer *independent* of the first computer system.” Ex. 1001, 14:17–45 (emphasis added). The Specification does not use the term “distinct” outside of summarizing the claimed invention. *Id.* at Abstract, 2:13–34. But the Specification indicates that the method applies *whether or not* the first and second computer systems are operated by different entities. *See id.* at 12:46–14:8 (noting that playback may be “tracked in a substantially same [sic] manner, regardless of whether it is streamed from system 30 or otherwise unrelated computer systems operated by third parties”). Accordingly, on this record, we are not persuaded that claim 1 prohibits the common

operation or control of the claimed first and second computer systems, even under Petitioner’s proposed construction.

Inst. Dec. 21–23 (footnote omitted); *see also* Pet. Reply 3–4 (agreeing that Petitioner’s “proposed construction does not prevent two distinct computer systems from having a common operator or being under common control”). We adopt that analysis in this Decision.

Moreover, we disagree with Patent Owner’s related argument that the Petition is premised on an allegation that the computer systems are distinct because they are not under common control. PO Resp. 33 (citing Pet. 43, 56); *see also* PO Sur-Reply 13–14. For the requirement that the second computer system be “distinct,” the Petition points to the discussion mapping the second computer system to McTernan’s show servers:

Mc[T]ernan discloses “a second computer system distinct from the first computer system” for the reasons discussed for element 1[pre]. *See supra*, §X.B.1.a (the second computer system includes show servers 106); Ex[1002] ¶¶212-216.

Pet. 56 (some alterations in original). In the cited section, the Petition contends that the two computer systems “are ‘distinct’ . . . *and* are not under common control”—not that they are distinct *because* they are not under common control. *Id.* at 43 (emphasis added). Specifically, the full text of the relevant paragraph states:

For the “second computer system,” a [person of ordinary skill in the art] would understand that show servers 106 are “distinct” from the first computer system and are not under common control. Ex[1007] 12:11-19:21. Figure 1 illustrates show servers 106 as separate servers with separate functionality. Mc[T]ernan does not describe show servers 106 as being under control of the central server 112. Rather, show servers 106 receive content from producers 102 that create content, and show servers 106 provide the content to client 108 via a media path (represented by 107a-c) that does not include

the web servers 104, security servers 110, or central server 112.
See e.g., Ex[1007], Fig. 1, 2:13-17, 14:6-15, 17:7-18:9;
Ex[1002] ¶183.

Id. (most alterations in original). Accordingly, the Petition is not predicated on a contention that the systems are separately controlled.

Furthermore, even if the Petition could be read as arguing that the computer systems are distinct *because* they are not under common control, it also argues that the systems are distinct because they are “separate servers with separate functionality.” Pet. 43. Consequently, the former argument would be superfluous because we agree with the latter.

Accordingly, we are persuaded that McTernan discloses element 1[f].

h. 1[g]: “wherein the stored data is indicative of an amount of time the digital media presentation data is streamed from the second computer system to the user’s computer”

Petitioner asserts that McTernan discloses element 1[g] (Pet. 59–61), and Patent Owner has not argued otherwise (*see generally* PO Resp.).

Petitioner’s assertions are supported by the cited evidence and are persuasive. McTernan’s “heartbeat data packets are used to calculate the total time that a user is watching a show.” Ex. 1007, 9:22–23. Specifically, McTernan states:

These heartbeat packets consist of the unique session id and a time stamp. . . . The time stamp is used to measure the elapsed time from the beginning of the viewing of a show to the generation of the heartbeat packet. In this manner, the system is capable of generating statistics regarding how long each show is viewed for by each client. . . . By having each Player 103b update the Security Server 110 with viewing statistics, a mechanism is provided whereby precise measurements of show viewership can be made.

Id. at 19:1–12. Accordingly, we are persuaded that McTernan discloses this element 1[g].

- i. 1[h]: “wherein each stored data is together indicative of a cumulative time the corresponding web page was displayed by the user’s computer”

Petitioner asserts that the McTernan-Robinson combination discloses element 1[h]. Pet. 61–62. Petitioner submits that Robinson’s heartbeats, which are used to measure visit duration, are “together indicative of the total amount of time the user’s computer spent on the web page.” *Id.* (citing Ex. 1008 ¶¶ 8–9, 39; Ex. 1002 ¶¶ 219–221). Petitioner contends that it would have been obvious to combine McTernan and Robinson such that McTernan’s system used both McTernan’s heartbeat packets (which indicate the amount of time the presentation is streamed, *see supra* § II.D.3.h (element 1[g])) and Robinson’s heartbeat packets (which indicate the total time a web page was displayed). Pet. 61–62; *see also id.* at 52, 54, 56.

According to Petitioner, the proposed combination is within the skill of an ordinary artisan, and a person of ordinary skill in the art would have had a reasonable expectation of success. *See* Pet. 52 (“A POSA would have known to use identifiers to distinguish heartbeat packets for tracking a show from heartbeat packets for tracking a page.” (citing Ex. 1007, 18:15–17; Ex. 1008 ¶¶ 21–23; Ex. 1002 ¶¶ 204, 237–242)), 56 (“A POSA combining the teachings of Robinson would know to configure Mc[T]ernan’s security server 110 to store Robinson’s heartbeats in a similar manner, e.g., indexed by their identifiers (such as a page-indicator).” (citing Ex. 1002 ¶¶ 209–211)), 71 (arguing that, given similarities, no modifications or only slight modifications to McTernan’s servers would be required), 72 (“Such a

modification would be a trivial task” (citing Ex. 1008 ¶¶ 22, 24)); *see also id.* at 62.

Petitioner also contends the combination is a mere “application of a known technique . . . to a known system . . . ready for improvement to yield predictable results.” Pet. 70–71. Relatedly, Petitioner argues that a person of ordinary skill would have been motivated to combine the references in this manner as a combination of “prior art elements . . . according to known methods . . . to yield predictable results.” *Id.* at 72. Petitioner notes that McTernan and Robinson have “substantial similarities.” *Id.* at 71 (citing Ex. 1008 ¶ 22; Ex. 1007, 18:15–17, 19:1–2). According to Petitioner, the combination improves McTernan by making the tracking more effective and accurate and by improving security. *Id.* at 71–73 (citing Ex. 1007, 9:8–11; Ex. 1008 ¶¶ 5, 8–9, 21).

Patent Owner contends that “Petitioner has not established a motivation to combine the heartbeats of Robinson with the system of McTernan” and that Petitioner’s proposed combination “is based on impermissible hindsight.” PO Resp. 35. Patent Owner submits that, to guard against improper hindsight, Petitioner must show “a motivation to combine the prior art teachings in the particular manner claimed.” *Id.* at 37; *see id.* at 35–37 (summarizing Federal Circuit cases). Patent Owner argues that Petitioner’s statements are “insufficient on their face” to explain why an ordinary artisan “would have made the combination or substitutions in the particular manner claimed.” *Id.* at 38.

Moreover, Patent Owner argues that Petitioner’s statements are “premised on there being a reason, not explained by Petitioner, for using web page tracking in addition to show tracking.” PO Resp. 37–38; *id.* at 42

(alleging failure “to explain why web page visit time is relevant to a system that bills users according to media played, not how long the user was on a web page” (emphasis omitted)). Patent Owner argues that “there is no explanation as to why one of ordinary skill in the art would have wanted such data in light of the functionality alleged to be present in McTernan,” where “McTernan has no obvious use for web page visitation data.” *Id.* at 38. Responding to Petitioner’s identified improvements (*see* Pet. 71–72), Patent Owner argues the Petition fails to explain *why* there would have been an improvement. PO Resp. 41.

Finally, Patent Owner argues that, unlike the ’609 patent, neither McTernan nor Robinson disclose or suggest “using web page viewing times for advertising” or “generating web pages with advertising.” PO Resp. 38–40. According to Patent Owner, McTernan’s heartbeats are used to bill customers for viewing media resources (*id.* at 39–40 (citing Ex. 1007, 7:8–22, 9:21–23)), and Robinson’s heartbeats are used “in real-time” to “facilitat[e] communications between users” (*id.* at 40 (citing Ex. 1008 ¶¶ 7–9)). From this, Patent Owner argues:

The only motivation for combining a system for timing the playing of shows, as in McTernan, so that a user can be billed for playing time, with a system for determining real-time user presence, for facilitating communications, as in Robinson, to arrive at a system that uses a timer applet to determine the time users are on a web page for advertising purposes, is impermissible hindsight. There is simply no suggestion in either McTernan or Robinson of the recited system.

Id. at 40–41.

On this record, we are persuaded that Robinson discloses element 1[h]. In particular, Robinson’s heartbeats are collectively used to calculate the duration of a client’s visit on a particular web page. *E.g.*, Ex. 1008 ¶¶ 8–

9, 39. Patent Owner does not dispute Petitioner's assertions in this regard. *See* Pet. 61–62; *see generally* PO Resp. 34–43.

Moreover, after considering the parties' arguments and the evidence of record, we are persuaded, by a preponderance of evidence, that it would have been obvious to combine McTernan and Robinson in the particular manner proposed by Petitioner.

The Supreme Court instructs: “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR*, 550 U.S. at 417 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)). “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* “[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* But, the Supreme Court also cautioned that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 418. As a result, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

We find that Petitioner's proposal combines known elements with each performing the same function it had been known to perform (*see* Pet. 52, 54, 56, 71–73), and indeed, Patent Owner does not argue to the contrary. As explained above, McTernan discloses a system that uses

heartbeat packets to determine the amount of time a presentation is streamed, and Robinson discloses a system that uses heartbeat packets to determine the total time a web page is displayed. Petitioner proposes a combination of Robinson's heartbeats into McTernan's system, with each performing its known function.

We also find that the combination proposed by Petitioner is within the skill of an ordinary artisan and that a person of ordinary skill in the art would have had a reasonable expectation of success in making the combination. Petitioner's assertions and explanations on this point are detailed and consistent with and supported by the evidence cited by Petitioner (*see* Pet. 52, 54, 56, 71–73), and Patent Owner does not dispute these assertions. Dr. Storer testifies that that a person of ordinary skill in the art “would have known to use identifiers to distinguish” the two types of heartbeat packets (in McTernan and Robinson) and would have known to store all heartbeats indexed by their respective identifiers. Ex. 1002 ¶¶ 204 (citing Ex. 1007, 18:15–17; Ex. 1008 ¶¶ 21–23), 211. Dr. Storer further testifies that, given the similarities between McTernan and Robinson, “the web server 104/security server 110 of Mc[T]ernan would not need to be modified (or, at most, slightly modified to account for any minor differences in the syntax of the packets)” and that “[s]uch a modification would have been well within the capacity of a [person of ordinary skill in the art].” Ex. 1002 ¶ 238 (citing Ex. 1007, 18:15–17, 19:1–2; Ex. 1008 ¶ 22). Dr. Storer also testifies that modifying McTernan by adding Robinson's tracking of the amount of time spent on a page “would be a trivial task and could involve merely hosting the applet of Robinson on the web servers of Mc[T]ernan and sending Robinson's applet to the user along with the media player and plug-in of

Mc[T]ernan by embedding Robinson’s applet in the web pages of Mc[T]ernan.” Ex. 1002 ¶ 240 (citing Ex. 1008 ¶¶ 22, 24). We credit this testimony: it is logical, reasonable, and supported by the cited references, and we perceive (and Patent Owner identifies) no contradictory evidence or deficiencies in the rationale.

Further, we find that a person of ordinary skill in the art would have been motivated to make the specific combination proposed by Petitioner. *See* Pet. 71–73. One of McTernan’s goals is “more effectively track[ing] the use of content by consumers.” Ex. 1007, 9:10–11. McTernan’s heartbeats track “the total time that a user is watching a show” (Ex. 1007, 9:21–23), and McTernan’s client generates heartbeats when a “show is playing, e.g., has not been paused or stopped” (*id.* at 25:6–15). Robinson’s heartbeats, on the other hand, are “used to make an accurate calculation (external to and independent of the client) of the client leaving time and of visit duration” on a web page.¹⁵ Ex. 1008 ¶ 9. Supplementing McTernan’s system with Robinson’s tracking technique would provide additional data regarding consumers’ use of content, furthering McTernan’s goal of effectively tracking use of that content. *See* Ex. 1007, 9:10–11; *KSR*, 550 U.S. at 420 (“[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining

¹⁵ Incidentally, we disagree with Patent Owner’s suggestion that Robinson’s only purpose is to facilitate communications between users on the page. *See* PO Resp. 40, 42. Robinson explains that it monitors a user’s presence on a web page both “to make real-time communication between users on the same page possible, *and* for subsequent measurement of visit durations.” Ex. 1008 ¶ 5 (emphasis added); *see also id.* ¶¶ 8–9 (describing heartbeats support communication between users and “can further be used” to measure visit duration and leaving time).

the elements in the manner claimed.”). In addition, Dr. Storer testifies that the proposed combination would improve McTernan by furthering its goal of tracking customer’s use of content (Ex. 1002 ¶ 239), and we credit this testimony because it is logical and uncontradicted.

As a result, we do not agree with Patent Owner’s contention that the Petition fails to identify a motivation to combine the references in the particular manner claimed. *See* PO Resp. 35–38; *see also* PO Sur-Reply 18–19. As detailed above, Petitioner proposes a combination of Robinson’s heartbeats with McTernan’s system, and Petitioner explains why it would have been obvious to make this specific proposed combination. As explained above, we find Petitioner’s identified motivation to be logical, supported by evidence, and persuasive. Patent Owner identifies (and we perceive) no evidence to the contrary.

Moreover, we have considered but are not persuaded by Patent Owner’s arguments that the Petition fails to sufficiently explain why an ordinary artisan would have wanted to include Robinson’s data in McTernan’s system. PO Resp. 38–43. According to Patent Owner, “McTernan has no obvious use for web page visitation data” (*id.* at 38), and Robinson’s information would not be an improvement because McTernan’s “users are billed based upon viewing media” (*id.* at 41). *See id.* at 42 (alleging failure “to explain why web page visit time is relevant to a system that bills users according to media played, not how long the user was on a web page” (emphasis omitted)). Although McTernan does not suggest use of web page visitation data specifically, it generally seeks to improve the techniques of tracking customers’ use of content. *See, e.g.*, Ex. 1007, 9:10–11. Robinson provides a way to achieve that goal, by accurately tracking

customer's use of a web page. *See, e.g.*, Ex. 1008 ¶ 9. We are persuaded that a person of ordinary skill would have recognized that supplementing McTernan with Robinson's tracking information would provide more information regarding customers' use of content. *See* Pet. Reply 15 (explaining that an ordinary artisan would recognize that adding Robinson's data would "further improve the effectiveness and accuracy of Mc[T]ernan's ability to track web visitor behavior and experience," as for example, "the combination allows for tracking both the amount of time that a presentation was streamed (*excluding* when the presentation was paused or stopped, per Mc[T]ernan) and the amount of time that the page was displayed (*including* when the presentation was paused or stopped, per Robinson)" (citing Pet. 62, 70–73; Ex. 1007, 25:6–10; Ex. 1008 ¶¶ 5–9)). As a result, it does not matter whether the proposed modification *also* would have altered McTernan's billing methods.

Patent Owner's arguments regarding the references' failure to discuss advertising are misplaced. *See* PO Resp. 38–41. Although we agree with Patent Owner's assessment that the references have different stated goals than the '609 patent—advertising was the driving motivation in the '609 patent, but the asserted references do not mention advertising—this difference is not relevant to our inquiry. "[N]either the particular motivation nor the avowed purpose of the patentee controls" when evaluating obviousness (*KSR*, 550 U.S. at 419), and Petitioner does not rely on advertising as a motivation to combine the references (*see* Pet. 52, 54, 56,

70–73). As a result, we are not persuaded by Patent Owner’s arguments that McTernan and Robinson fail to contemplate web page advertising.¹⁶

Finally, although we are always mindful of the danger of improper hindsight bias,¹⁷ we are not persuaded by Patent Owner’s argument that the Petition improperly relies on hindsight. As shown above, we are persuaded by Petitioner’s analysis and evidence that a person of ordinary skill in the art at the time of the invention would have been motivated to combine McTernan and Robinson to yield the claimed invention. *See KSR*, 550 U.S. at 418 (explaining that an obviousness analysis “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”); *see also In re Cree, Inc.*, 818 F.3d 694, 702 n.3 (Fed. Cir. 2016) (observing that the party’s “impermissible hindsight” argument was “essentially a repackaging of the argument that there was insufficient evidence of a motivation to combine the references”).

¹⁶ When addressing the Jacoby-Bland ground, Patent Owner asserts that “the recitation of a web page corresponding to a digital media presentation inherently comprises a web page that includes particular corresponding ads relating to the viewer’s identification and/or login.” PO Resp. 30. To the extent Patent Owner contends that the claim requires advertisements, we disagree. Patent Owner identifies (and we perceive) no basis for construing claim 1 to include such a requirement. *See also* Pet. Reply 17–18 (responding to argument); *cf.* PO Resp. 13 (declining to construe claim).

¹⁷ *See KSR*, 550 U.S. at 421 (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.”); *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1068 (Fed. Cir. 2018) (“We have observed that the prejudice of hindsight bias often overlooks that the genius of invention is often a combination of known elements which in hindsight seems preordained.” (internal quotation marks omitted)).

Accordingly, after reviewing the evidence of record and the parties' arguments, we are persuaded that Petitioner has shown by a preponderance of the evidence that it would have been obvious to combine McTernan and Robinson, as proposed by Petitioner.

j. Conclusion

For the foregoing reasons, Petitioner has demonstrated by a preponderance of the evidence that the subject matter of independent claim 1 would have been obvious over McTernan and Robinson.

4. Dependent Claim 2

Claim 2 depends from independent claim 1 and further recites “wherein the storing comprises incrementing a stored value dependently upon the receiving.” Ex. 1001, 14:46–47.

Petitioner has shown by a preponderance of the evidence that McTernan discloses this limitation. *See* Pet. 62–63. McTernan's security servers 110 store the received heartbeat data, and central server 112 polls security servers 110 “at regular intervals to retrieve accumulated heartbeat data” for analysis and generation of billing statistics. Ex. 1007, 19:13–20; *see* Ex. 1002 ¶¶ 222–223 (testifying that a person of ordinary skill in the art would understand this “accumulated heartbeat data” to be a stored value incremented dependently upon receiving the heartbeat packets); *see also* Ex. 1007, 9:22–23 (stating that heartbeats “are used to calculate the total time that a user is watching a show”). Beyond the arguments addressed above with respect to independent claim 1, Patent Owner does not contest Petitioner's assertions with respect to claim 2. PO Resp. 43.

Based on Petitioner’s persuasive arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of dependent claim 2 would have been obvious over McTernan and Robinson.

5. Dependent Claim 3

Claim 3 depends from dependent claim 2 and further recites “wherein the received data is indicative of a temporal cycle passing.” Ex. 1001, 14:48–49.

Petitioner has shown by a preponderance of the evidence that McTernan and Robinson each disclose this limitation. *See* Pet. 63. McTernan’s heartbeats (the claimed “received data”) “are generated and transmitted a [sic—at] regular intervals . . . , e.g., every 30 seconds, every minute, etc.” Ex. 1007, 19:2–4. Also, Robinson’s heartbeats are transmitted at regular intervals. Ex. 1008 ¶¶ 23, 28. Beyond the arguments addressed above with respect to independent claim 1, Patent Owner does not contest Petitioner’s assertions with respect to claim 3. PO Resp. 43.

Based on Petitioner’s persuasive arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of dependent claim 3 would have been obvious over McTernan and Robinson.

E. Obviousness in view of Jacoby and Bland

In view of our determination that claims 1–3 are unpatentable, as discussed above, we need not address Petitioner’s additional arguments of unpatentability based on the combination of Jacoby and Bland. *See* 35 U.S.C. § 318(a) (“If an inter partes review is instituted and not dismissed

under this chapter, the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d).”); *Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (determining that an administrative agency is at liberty to reach a decision based on a single dispositive issue).

F. Patent Owner’s Constitutional Challenge

Patent Owner argues that Administrative Patent Judges (“APJs”) are unconstitutionally appointed principal officers. PO Resp. 44–47 (citing *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019), *cert. granted sub nom. United States v. Arthrex, Inc.*, 2020 WL 6037206 (Oct. 13, 2020)). According to Patent Owner, the Federal Circuit erred by remedying the constitutional violation, and thus, this case must be dismissed. *Id.*

We are bound by the Federal Circuit’s decision in *Arthrex*, which addressed this issue. *See* 941 F.3d at 1337 (“This as-applied severance . . . cures the constitutional violation.”); *see also Arthrex, Inc. v. Smith & Nephew, Inc.*, 953 F.3d 760, 764 (Fed. Cir. 2020) (Moore, J., concurring in denial of rehearing) (“Because the APJs were constitutionally appointed as of the implementation of the severance, *inter partes* review decisions going forward were no longer rendered by unconstitutional panels.”). Accordingly, we do not consider this issue any further.

III. CONCLUSION¹⁸

Based on the evidence presented with the Petition, the evidence introduced during the trial, and the parties' respective arguments, Petitioner has shown by a preponderance of the evidence that the challenged claims are unpatentable, as summarized in the following table:

Claims	35 U.S.C. §	References/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3	103(a)	McTernan, Robinson	1–3	
1–3	103(a)	Jacoby, Bland ¹⁹		
Overall Outcome			1–3	

¹⁸ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*, 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).

¹⁹ As explained above, because we determine that the challenged claims are unpatentable based on the McTernan-Robinson combination, we decline to address this ground.

IV. ORDER

It is hereby:

ORDERED that claims 1–3 of the '609 patent are determined to be unpatentable; and

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

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