

**United States Court of Appeals
for the Federal Circuit**

CRFD RESEARCH, INC.,
Appellant

v.

**JOSEPH MATAL, PERFORMING THE FUNCTIONS
AND DUTIES OF THE UNDER SECRETARY OF
COMMERCE FOR INTELLECTUAL PROPERTY
AND DIRECTOR, U.S. PATENT AND TRADEMARK
OFFICE,**
Intervenor

2016-2198

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2015-
00055.

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CRFD RESEARCH, INC.,
Appellant

v.

**DISH NETWORK CORPORATION, DISH DBS
CORPORATION, DISH NETWORK LLC,
ECHOSTAR CORPORATION, ECHOSTAR
TECHNOLOGIES LLC,**
Appellees

2016-2298

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2015-00627.

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HULU, LLC, NETFLIX, INC., SPOTIFY USA INC.,
Appellants

v.

CRFD RESEARCH, INC.,
Appellee

2016-2437

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2015-00259.

Decided: December 5, 2017

TAREK N. FAHMI, Ascenda Law Group, PC, San Jose, CA, argued for appellant in 2016-2198, 2016-2298 and for appellee in 2016-2437.

MARY L. KELLY, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor in 2016-2198. Also represented by NATHAN K. KELLEY, MICHAEL SUMNER FORMAN, THOMAS W. KRAUSE, SCOTT WEIDENFELLER.

ELIOT DAMON WILLIAMS, Baker Botts LLP, Palo Alto, CA, argued for appellees in 2016-2298. Also represented by GEORGE HOPKINS GUY, III.

HARPER BATTIS, Baker Botts LLP, Palo Alto, CA, argued for appellant Hulu, LLC, in 2016-2437. Also represented by ELIOT DAMON WILLIAMS; MICHAEL HAWES, Houston, TX.

JOHN F. WARD, Kelley Drye & Warren, LLP, New York, NY, argued for appellants Netflix, Inc., Spotify USA Inc., in 2016-2437. Also represented by DAVID LINDENBAUM, MICHAEL J. ZINNA.

Before NEWMAN, MAYER, and O'MALLEY, *Circuit Judges*.
O'MALLEY, *Circuit Judge*.

Today we decide three appeals in companion cases from final written decisions of the United States Patent and Trademark Office ("PTO") Patent Trial and Appeal Board's ("Board") inter partes reviews ("IPRs") of U.S. Patent No. 7,191,233 ("the '233 patent"), owned by CRFD Research, Inc. ("CRFD"). *Iron Dome LLC v. CRFD Research, Inc.*, No. IPR2015-00055, 2016 Pat. App. LEXIS 6855 (P.T.A.B. Apr. 22, 2016) (hereinafter "*Iron Dome Final Written Decision*," Appeal No. 16-2198); *DISH Network Corp. v. CRFD Research, Inc.*, No. IPR2015-00627, 2016 Pat. App. LEXIS 7567 (P.T.A.B. June 1, 2016) (hereinafter "*DISH Final Written Decision*," Appeal No. 16-2298); *Hulu, LLC v. CRFD Research, Inc.*, No. IPR2015-00259, 2016 Pat. App. LEXIS 4340 (P.T.A.B. June 1, 2016) (hereinafter "*Hulu Final Written Decision*," Appeal No. 16-2437). For the reasons stated below, we affirm the *Iron Dome* and *DISH Final Written Decisions*,

but we reverse the Board’s determination on obviousness in the *Hulu Final Written Decision*.

I. BACKGROUND

A. The ’233 Patent

The ’233 patent describes methods and systems for “user-directed transfer of an on-going software-based session from one device to another device.” ’233 patent, col. 1, ll. 10–11. These methods and systems operate to allow the user to begin a session on one communication-enabled device, such as a cellular telephone, wireless personal digital assistant, laptop computer, or desktop computer, and then to transfer the session to another device. *Id.* col. 1, ll. 8–11; *see id.* col. 1, ll. 15–52; *see also id.* col. 2, ll. 3–20; *id.* col. 3, ll. 6–10.

The ’233 specification explains that, “[i]n conventional systems, the user would have to discontinue the current session on the first device and reinitiate a new session on the second device.” *Id.* col. 1, ll. 59–62. But the session transfer described in the ’233 patent “provides the capability to initiate a transfer of an on-going session from a first device to a second device while maintaining the session and its context.” *Id.* col. 3, ll. 7–10.

The ’233 patent describes a method of session transfer in which: (1) a first device sends a “redirect or transfer command” to a session transfer module; (2) a session server begins intercepting messages intended for the first device; (3) the first device transmits a “transaction or session history” to the session server; (4) the session server retrieves the previously stored “device profile” of a second device to which the session will be redirected, converts the stored messages of the session history into a data format compatible and/or modality compatible with the second device, and converts the session state to a state compatible with the second device; and (5) when the user activates the second device, the session server “push-

es the converted session to the redirected device over the network **100** as a normal session with the converted transaction log.” *Id.* col. 7, l. 46–col. 8, l. 35.

Claim 1 is illustrative of the independent and dependent claims at issue in these appeals:¹

1. A method for redirecting an on-going, software based session comprising:

conducting a session with a first device;

specifying a second device;

discontinuing said session on said first device; and

transmitting a session history of said first device from said first device to a session transfer module after said session is discontinued on said first device; and

resuming said session on said second device with said session history.

Id. col. 9, ll. 30–39.

¹ CRFD appealed the *Iron Dome Final Written Decision* as to the Board’s finding of anticipation of claim 1 and obviousness of claims 4–6 and 8–11 of the ’233 patent. *See* Appeal No. 16-2198. CRFD also appealed the *DISH Final Written Decision* as to the Board’s finding of anticipation of claims 1, 4, 23, and 25 of the ’233 patent, and obviousness of claims 4 and 25 of the ’233 patent. *See* Appeal No. 16-2298. Hulu appealed the *Hulu Final Written Decision* as to the Board’s finding of no anticipation of claims 1–3, 23, and 24 of the ’233 patent, and nonobviousness of claims 1–6, 8–11, 13–15, 17–20, 23–25, 29–31, 34–36, and 38–41 of the ’233 patent. *See* Appeal No. 16-2437.

B. Relevant Prior Art

The Board reviewed three prior art references relevant to the issues raised in these appeals: (1) Thomas Phan et al., “A New TWIST on Mobile Computing: Two-Way Interactive Session Transfer” in the Proceedings of the Second IEEE Workshop on Internet Applications (WIAPP 2001) (“Phan San Jose”); (2) Thomas Phan et al., “Handoff of Application Sessions Across Time and Space” in volume 5 of the IEEE International Conference on Communications (ICC 2001) (“Phan Helsinki”); and (3) U.S. Patent No. 6,963,901, filed July 24, 2000, and issued November 8, 2005 (“Bates”).²

² In the IPRs leading to the *DISH* and *Hulu Final Written Decisions*, the Board also instituted review on various grounds related to two other prior art references: (1) Mun Choon Chan & Thomas Y. C. Woo, *Next-Generation Wireless Data Services: Architecture and Experience*, IEEE Pers. Comm., Feb. 1999, 20 (“Chan”); and (2) Bo Zou, Mobile ID Protocol: A Badge-Activated Application Level Handoff of a Multimedia Streaming to Support User Mobility (2000) (M.S. thesis, University of Illinois at Urbana-Champaign) (“Zou”). In IPR2015-00627, the Board instituted review of the ’233 patent under 35 U.S.C. § 103(a) on the combination of Bates and Chan. *DISH Final Written Decision*, at *7. In IPR2015-00259, the Board instituted review of the ’233 patent under 35 U.S.C. § 103(a) on the combinations of Bates and Chan, Bates and Zou, and Bates, Zou, and Chan. *Hulu Final Written Decision*, at *6. As discussed below in sections II.B and II.C, the parties do not dispute that petitioners in these actions offered Bates as the only reference that teaches and/or suggests the transmitting session history limitation at issue in the relevant portions of those proceedings.

1. Phan San Jose

The Board examined Phan San Jose as part of the *Iron Dome* and *DISH Final Written Decisions*. Phan San Jose describes the “Interactive Mobile Application Support for Heterogeneous Clients (iMASH) research project.” iMASH allows hospital physicians and staff to “seamlessly move an application’s session from one machine to another machine,” such as a desktop or laptop computer, using the hospital’s “network as a conduit.” Using iMASH, a physician may begin a session on a first device and later resume that session on a different device using the session data from the first device.

As part of its discussion of the iMASH research project, Phan San Jose discloses a two-way interactive session transfer (“TWIST”). TWIST places middleware servers (“MWSs”) between client devices and an application server. Session state data on a first device is stored on the MWS and then transferred to another client upon session handoff.

Phan San Jose also describes how the iMASH system could be used with a “Teaching File” Java applet that displays medical images and associated information to allow users to create and modify instructional “teaching files.” In responding to a user request, the application server sends an image file from storage to the MWS. The MWS then performs a format conversion on the image, and the requesting client device then receives this image.

Phan San Jose describes two methods for session handoff: a “pull” mode and a “push” mode. In the “pull” mode, so named because the target machine retrieves the session state from the MWS, the session handoff proceeds as follows:

When the user wishes to perform a session handoff, he must first decide how the handoff shall be conducted with respect to the recipient. If

the user selects a “Suspend” operation [at the first client device in the “pull” mode], his session shall be saved back to the MWS, allowing the application to terminate, and at a later time the session can be reinstantiated by the Teaching File application running on the target machine.

J.A. 349 (Appeal No. 16-2198); J.A. 1333 (Appeal No. 16-2298). In the “pull” mode, the second device is specified *after* the session is terminated on the first device. But in the “push” mode, the user selects the target second device to which the transfer will be made *before* the session on the first device is terminated. *Id.* When the handoff occurs in the “push” mode, the MWS contacts a daemon running on the target device to immediately launch the Teaching File applet; this action automatically retrieves the session state data from the first device. *Id.* The applet on the first client terminates only after the session state is fully reinstantiated on the second machine. *Id.*

2. Phan Helsinki

The Board examined Phan Helsinki in the course of the *Iron Dome* and *DISH Final Written Decisions*. Phan Helsinki elaborates on the architecture and operation of the iMASH research project described in Phan San Jose. J.A. 359–64 (Appeal No. 16-2198); J.A. 1343–48 (Appeal No. 16-2298). Phan Helsinki explains that this system employs MWSs “strategically placed between the application servers and the clients.” J.A. 359 (Appeal No. 16-2198); J.A. 1343 (Appeal No. 16-2298). The MWSs, rather than the original application servers, act as the data sources for the various clients and support session handoffs. *Id.* “When a user moves an on-going application session from one device to another, middleware servers act as a ‘home’ for the application state (including active connections, cached data, etc.) to facilitate migration between devices.” J.A. 361 (Appeal No. 16-2198); J.A. 1345 (Appeal No. 16-2298).

Phan Helsinki also describes the “Middleware-Aware Remote Code” (“MARC”) on the client device that facilitates “session saving and restoration,” and explains how a session is transferred using a web browser that has been “outfitted” with MARC. J.A. 361–62 (Appeal No. 16-2198); J.A. 1345–46 (Appeal No. 16-2298). First, a user starts the client application by providing a user ID. The MARC within the browser then contacts the MWS and begins a new session using this user ID. If a previous session state exists, it is retrieved from the MWS and is incorporated into the browser before the user’s current session begins. *Id.*

3. Bates

Bates discloses a system and method for “sharing . . . browser information between at least two browser applications” in which a web browsing session is transferred from a first computer to a second computer via one or more servers. Bates, col. 1, ll. 63–66; *id.* col. 3, ll. 4–7; *id.* col. 9, ll. 24–30; *id.* col. 10, l. 51–col. 11, l. 8. The “browser information includes information generated during a browsing session, i.e., a period of time when the browser **240** is executing on a client computer **106** and a network connection exists between the client **106** and the network **104** allowing a user to traverse network addresses corresponding to the servers **108**,” and the information “may be limited to the information generated during a particular browsing session.” *Id.* col. 4, ll. 61–67; *id.* col. 6, ll. 11–13; *id.* col. 7, ll. 22–24.

Bates discloses a step-by-step session transfer process in which a user first conducts a web browsing session on a first client computer. *Id.* col. 10, ll. 58–61. Next, “[a] user may input to the field **302** an e-mail address for a computer (e.g., a remote client computer **106**) to which the browser information contained in the sending computer’s buffer **242** will be sent.” *Id.* col. 5, ll. 52–56. When the user wishes to switch computers, “the user may be re-

quired to terminate a browsing session. In such an event, the necessary browser information may be collected and transmitted to a remote computer containing another browser program” through the use of various servers and networks. *Id.* col. 10, ll. 61–65. “The browser information is then used to reconfigure the browser program of the remote computer and restore the user to where he or she left off during the terminated browsing session.” *Id.* col. 10, l. 65–col. 11, l. 1. “In effect, the present invention preserves the current status of a browsing session to be resumed at another location.” *Id.* col. 11, ll. 6–8.

Bates also describes various “share events,” which are events “adapted to initiate transmission of the browser information from the local client computer to the remote client computer.” *Id.* col. 9, ll. 4–7. Share events occur in connection with a user interface, where the local computer is configured to share browser information with a remote computer. *Id.* col. 8, ll. 59–66. Figure 5 of Bates depicts five such events: (1) upon user request (i.e., the browser information is transmitted immediately in response to a user request); (2) at shutdown (where the browser information is transmitted when the client computer is shutdown); (3) at an idle period (where the browser information is transmitted when the client computer is idle—e.g., when it enters a standby or hibernation mode); (4) periodically (where the browser information is transmitted at periodic time intervals); and (5) upon a predetermined action (in which the browser information is transmitted upon the occurrence of an action performed by the user, which action is not solely directed to sending the browser information). *Id.* col. 7, l. 56–col. 8, l. 23; *id.* Fig. 5. When a “share event” occurs, the first client computer transmits the browser information to the second client computer. *Id.* col. 9, ll. 38–49.

II. DISCUSSION

We review the Board’s factual findings for substantial evidence and its legal conclusions de novo. *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000). “Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence.” *In re Mouttet*, 686 F.3d 1322, 1331 (Fed. Cir. 2012) (citing *Gartside*, 203 F.3d at 1312). It is “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1294 (Fed. Cir. 2012) (quoting *Consol. Edison Co. of N.Y. v. NLRB*, 305 U.S. 197, 229 (1938)). We have jurisdiction over these appeals under 28 U.S.C. § 1295(a)(4).

In its appeals of the *Iron Dome* and *DISH Final Written Decisions*, CRFD challenges the Board’s determinations that certain claims of the ’233 patent are unpatentable as anticipated or obvious over the Phan references. In appealing the *Hulu Final Written Decision*, Hulu, LLC, Netflix, Inc., and Spotify USA Inc. (collectively, “Hulu”) challenge the Board’s conclusion that various claims of the ’233 patent are not unpatentable as anticipated or obvious based on disclosures in the Bates reference. We review each appeal in turn.

A. *Iron Dome Final Written Decision* (Appeal No. 16-2198)

As noted above, CRFD challenges the *Iron Dome Final Written Decision* in two ways: (1) it contends that claim 1 of the ’233 patent is not anticipated by Phan San Jose; and (2) it argues that claims 4–6 and 8–11 would not have been obvious over Phan San Jose in combination with Phan Helsinki. For the reasons stated below, we reject both of these challenges and affirm the Board’s decision in this appeal.

1. Procedural History

Iron Dome LLC filed a petition seeking inter partes review of claims 1–6, 8–11, 13–15, 17, 18, 20, and 34 of the '233 patent. *Iron Dome Final Written Decision*, at *1. The Board instituted review on two proposed grounds: (1) claim 1 as anticipated by Phan San Jose; and (2) claims 4–6 and 8–11 as obvious over Phan San Jose in combination with Phan Helsinki. *Id.* at *7.

In its final written decision, the Board concluded first that some, but not all, steps described in claim 1 of the '233 patent must be performed in a particular order. *Id.* at *9–13. The Board found that claim 1 states explicitly that the “transmitting a session history” step of claim 1 must follow the “discontinuing [a] session” step, and that, logically, the “conducting a session with a first device” step must take place before the “discontinuing said session on said first device” step. *Id.* at *11. But the Board concluded that “[t]here is nothing in the language of the claim, however, expressly requiring ‘specifying a second device’ to take place before ‘discontinuing said session on said first device’ or requiring such an order as a matter of logic or grammar.” *Id.* Although the '233 patent includes two examples in which a user specifies a second device *before* discontinuing a session, the Board noted that the '233 specification indicates explicitly that, “although the method of the present invention has been described by examples, the steps of the method may be performed in a different order than illustrated or simultaneously.” *Id.* at *12 (citing '233 patent, col. 9, ll. 22–25). The Board thus concluded that claim 1 does not require the “specifying” step to take place before the “discontinuing” step. *Id.* at *13.

The Board then found that Phan San Jose anticipates claim 1. *Id.* at *13–22. Although the Board agreed with CRFD that Phan San Jose’s “push” mode failed to teach the method recited in that claim, the Board found that the

“pull” mode of Phan San Jose discloses every limitation of claim 1, including the “specifying a second device” limitation relevant to this appeal. *Id.* at *16–17. The Board concluded that Phan San Jose teaches the specification of a second device even though, in the “pull” mode, the user does not identify a second device before suspending the session. Instead, “[t]he specification of the second device may take place at a later time, such as when the user chooses to resume the session on a different device.” *Id.* at *18. As the “specifying” step need not take place before the “discontinuing” step in claim 1 under the Board’s construction, the Board found that Phan San Jose disclosed a scenario in which device specification could occur *after* the user selects the “Suspend” operation, thereby discontinuing the session and causing the transmission of the session history to the MWS.

The Board also found that Phan San Jose teaches specifying a second device in the “pull” mode when the user takes action on the second device to resume the session. *Id.* at *20. According to the Board, claim 1 “does not specify who or what does the specifying, or to whom or what the second device is specified,” as the claim only requires that the second device be specified. *Id.*

The Board then explained that, even if the second device must be specified to the Phan San Jose MWS, that MWS “must receive enough information from the second device to be able to distinguish the chosen second device from other potential devices, even if only by virtue of the second device’s association with a user account; otherwise, the MWS would not be able to transmit the session history to the second device.” *Id.* at *21. Given these disclosures, the Board found that Phan San Jose discloses the “specifying” step of claim 1 either through user selection of a second device to resume the session or through the second device’s communication to the MWS to transmit the session history from the first device.

The Board also determined that claims 4–6 and 8–11 would have been obvious over Phan San Jose and Phan Helsinki. *Id.* at *22–27. The Board rejected CRFD’s contention that Phan Helsinki’s description of the “pull” mode, also disclosed in Phan San Jose, fails to teach or render obvious the “specifying a second device” step of claim 1. The Board noted its earlier determination that Phan San Jose alone discloses the “specifying a second device” step, and concluded that CRFD’s arguments as to claims dependent on claim 1 were unpersuasive for this reason. *Id.* at *26–27.

CRFD appealed. Iron Dome subsequently withdrew from the appeal, and the Director exercised her right to intervene under 35 U.S.C. § 143.

2. Anticipation by Phan San Jose

A patent is invalid for anticipation under 35 U.S.C. § 102 if a single prior art reference discloses all limitations of the claimed invention. *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). “Anticipation is a question of fact, and decisions from the Board on factual matters are reviewed for substantial evidence.” *REG Synthetic Fuels, LLC v. Neste Oil Oyj*, 841 F.3d 954, 958 (Fed. Cir. 2016) (citing *Eli Lilly & Co. v. Bd. of Regents of Univ. of Wash.*, 334 F.3d 1264, 1267 (Fed. Cir. 2003)). Anticipation is established when “one skilled in the art would reasonably understand or infer from the prior art reference’s teaching that every claim [limitation] was disclosed in that single reference.” *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192–93 (Fed. Cir. 2003) (quoting *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003)).

On appeal, CRFD does not challenge the Board’s determination that nothing in claim 1 requires the step of specifying a second device occurs before the first session is discontinued, nor does it challenge any of the Board’s

other claim construction determinations. And, CRFD does not dispute that Phan San Jose’s “pull” mode teaches that a physician can begin a session on a first device and then discontinue that session by suspending it, thereby causing the session history to be saved onto the MWS for continuation of the session at a later time.

Instead, CRFD contends that the Board erred in determining that Phan San Jose anticipates claim 1 of the ’233 patent as, in its view, Phan San Jose’s “pull” mode does not teach “specifying a second device.” CRFD argues that nothing in Phan San Jose describes “specifying” as part of a second device’s retrieval of session history from the MWS, and that, to anticipate, Phan San Jose must have provided more detail about the reinstantiation process. But claim 1 only requires “specifying a second device.” As the Board correctly noted, this is a broad limitation; it does not restrict specifying to a particular user or a particular device. *Iron Dome Final Written Decision*, at *20. Indeed, CRFD admitted at the oral hearing before the Board that *either* a user or another entity could specify the second step. *Id.* (citing J.A. 286 at ll. 14–22). And, according to the Board’s uncontested claim construction, the specifying step need not occur before the discontinuation of the first session, meaning that a user can specify a second device, or a second device can specify itself, *after* the first session has been discontinued and the session history has been transferred to the MWS.

The Board explained that “the MWS in Phan San Jose must receive enough information from the second device to be able to distinguish the chosen second device from other potential devices, even if only by virtue of the second device’s association with a user account; otherwise, the MWS would not be able to transmit the session history to the second device.” *Id.* at *21. As the Board found, Phan San Jose teaches that the user may select the second device on which a session will be resumed and

take action on that device to resume the session; such action causes the second device to communicate with the MWS to retrieve the session history. *Id.* at *20.

CRFD has not explained why the Board’s finding—that claim 1 does not prohibit a user from specifying a second device by taking action *on that second device* to resume the session—was erroneous. CRFD contends that nothing in Phan San Jose describes a user log-on action, but CRFD fails to explain how, under its theory, the session history could be sent to the second device without a user or a device instructing the MWS on where to send the data—thereby “specifying” the device. The fundamental flaw in CRFD’s theory is that it fails to acknowledge that, in order for the session history to be transmitted to the second device, the MWS must know the identity of the second device. CRFD’s arguments that Phan San Jose fails to provide the precise details of this identification process are unavailing, because the identification of the second device (or, in claim 1’s parlance, the “specifying” of such a device) is required for Phan San Jose’s operation.

CRFD also challenges the Board’s anticipation conclusion as to the “transmitting” limitation. The Board found that CRFD admitted that Phan San Jose discloses the “transmitting” step of claim 1 at the oral hearing. *See id.* at *17. CRFD’s attorney made the following statement at the oral hearing before the Board:

JUDGE ARBES: Counsel, do you agree that the pull mode of Phan San Jose discloses transmitting the session history after the session is discontinued limitation?

MR. FAHMI: I’m sorry, which mode, Your Honor?

JUDGE ARBES: The pull mode.

MR. FAHMI: *The pull mode teaches transfer after the session is discontinued, yes.* In fact, it has to because in the pull mode the application on the

first client is allowed to terminate after indicating that they wish to suspend the session.

J.A. 283 at ll. 3–11 (emphasis added); *see also Iron Dome Final Written Decision*, at *17 (citing J.A. 283 at ll. 3–9).

CRFD argues that this statement does not concede that Phan San Jose’s “pull” mode teaches transmitting a session history after the session is discontinued. Instead, it reflects CRFD’s agreement that, in Phan San Jose, transfer of a session to a second device occurs after a session is terminated on the first device. CRFD points to Phan San Jose in support of this position, arguing that, in that reference, the session data must be saved on the MWS *before* the application running on the first device can terminate: “If the user selects a ‘Suspend’ operation, his session shall be saved back to the MWS, allowing the application to terminate.” J.A. 349. But CRFD’s citation is incomplete; Phan San Jose explains that, after the session is saved back to the MWS, which allows the application to terminate, “at a later time the session can be reinstantiated.” *Id.* The Board cites the entire statement in its decision, and this statement is not inconsistent with the Board’s conclusion that Phan San Jose discloses this limitation. CRFD has not shown that the Board erred in this finding.

Because substantial evidence supports the Board’s conclusion that Phan San Jose teaches all steps of claim 1 of the ’233 patent, we affirm the Board’s determination that Phan San Jose anticipates this claim.

3. Obviousness Over Phan San Jose and Phan Helsinki

Obviousness is a question of law based on subsidiary findings of fact. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1366 (Fed. Cir. 2016). An obviousness determination requires finding both “that a skilled artisan would have been motivated to combine the

teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Id.* at 1367–68 (quoting *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1360 (Fed. Cir. 2012)). We uphold the Board’s factual findings unless they are not supported by substantial evidence, while we review the Board’s legal conclusions de novo. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

CRFD has not raised nonobviousness arguments separate from the anticipation arguments we have rejected. CRFD contends that the “pull” mode taught in Phan San Jose and Phan Helsinki does not teach or suggest the specification of a second device to which the session history of the first device would be transmitted. Claims 4–6 and 8–11 depend either directly or indirectly from claim 1, and thus all include the “specifying a second device” limitation. For the reasons stated above, we hold that substantial evidence supports the Board’s conclusion that Phan San Jose, alone, discloses the “specifying a second device” limitation. CRFD therefore has not shown that the Board erred in concluding that claims 4–6 and 8–11 would have been obvious in view of Phan San Jose and Phan Helsinki.

B. *DISH Final Written Decision*
(Appeal No. 16-2298)

CRFD appeals the Board’s determinations in the *DISH Final Written Decision* that (1) claims 1, 4, 23, and 25 of the ’233 patent are anticipated by Phan Helsinki, and (2) claims 4 and 25 would have been obvious over Phan Helsinki in view of Phan San Jose. DISH Network Corporation, DISH DBS Corporation, DISH Network L.L.C., EchoStar Corporation, and EchoStar Technologies L.L.C. (collectively, “DISH”) argue that, if we reverse the Board’s decision as to the grounds CRFD appeals, we

should still conclude that claims 1, 4, 23, and 25 are unpatentable as obvious over the combination of Bates and Chan. For the reasons that follow, we affirm the Board's decision that claims 1, 4, 23, and 25 of the '233 patent are anticipated by Phan Helsinki, and therefore need not reach CRFD or DISH's obviousness arguments on the same claims.

1. Procedural History

DISH filed a petition requesting inter partes review of claims 1, 4, 23, and 25 of the '233 patent. *DISH Final Written Decision*, at *1. The Board instituted inter partes review on four proposed grounds: (1) claims 1, 4, 23, and 25 as anticipated by Phan Helsinki; (2) claims 4 and 25 as obvious over Phan Helsinki in combination with Phan San Jose; (3) claims 1 and 23 as anticipated by Bates; and (4) claims 1, 4, 23, and 25 as obvious over Bates and Chan. *Id.* at *7.

In its final written decision, the Board found claims 1, 4, 23, and 25 of the '233 patent anticipated by Phan Helsinki, and also found claims 4 and 25 would have been obvious over Phan Helsinki in view of Phan San Jose. *Id.* at *29, *33. On anticipation, the Board found that DISH presented sufficient evidence to show that Phan Helsinki discloses every limitation of claims 1, 4, 23, and 25. *Id.* at *20. The Board first rejected CRFD's contention that Phan Helsinki does not teach the "transmitting" step recited in claim 1, noting that, during the oral hearing, CRFD agreed that the "pull" mode described in Phan Helsinki discloses the "transmitting" step of claim 1. *Id.* at *21–22.

The Board then concluded that DISH provided sufficient evidence that Phan Helsinki discloses the specifying a second device limitation as recited in claim 1. *Id.* at *22–28. As in the *Iron Dome Final Written Decision*, here the Board found the specifying of a second device step, as claimed in claim 1, can take place *after* the discontinua-

tion of the session on the first device. *Id.* at *23–24. And, according to the Board, the second device in Phan Helsinki is specified when the user acts on the second device to resume the session. *Id.* at *25. The Board found that claim 1 “does not specify who or what does the specifying, or to whom or what the second device is specified.” *Id.* On this point, CRFD’s declarant acknowledged that, in the “pull” mode of Phan Helsinki and Phan San Jose, the “[s]econd device is specified at some point in time.” *Id.* at *26. The Board rejected CRFD’s contention that Phan Helsinki’s step of identifying a user through a unique user ID is not equivalent to claim 1’s step of specifying a second device, finding that the Phan Helsinki MWS must receive enough information from the second device to distinguish that device from other potential devices. Otherwise, the MWS would not be capable of transmitting the session history to the second device. *Id.* at *27.³

The Board also concluded that DISH had shown by a preponderance of the evidence that claims 4 and 25 are unpatentable as obvious over Phan Helsinki in view of Phan San Jose. *Id.* at *31–33. The Board first concluded that a person of ordinary skill in the art would have considered the teachings of Phan Helsinki and Phan San Jose regarding the same research project together and combined their teachings. *Id.* at *29–32. Based on this conclusion, the Board found that a person of ordinary skill would have understood that including content adaptation, as recited in claims 4 and 25, and as described in Phan San Jose, would have been an obvious improvement to the disclosed system in Phan Helsinki. *Id.* at *32.

³ The Board noted that independent claim 23 “recites similar limitations to claim 1,” and found that the additional limitations of claims 4 and 25 are disclosed in Phan Helsinki’s “device profiling” and “presentation conversion” functionalities. *Id.* at *28.

The Board found, however, that DISH had not shown by a preponderance of the evidence that claims 1 and 23 of the '233 patent were anticipated by Bates, nor that claims 1, 4, 23, and 25 were unpatentable as obvious over Bates and Chan. *Id.* at *33–46.

2. Anticipation by Phan Helsinki

In this appeal, CRFD does not challenge the Board's claim construction or whether Phan Helsinki discloses a second device for resuming the session. Rather, CRFD's only challenge is that the Board erred in finding that Phan Helsinki anticipates claims 1, 4, 23, and 25 of the '233 patent by finding that Phan Helsinki teaches “specifying a second device” in the “pull” mode.⁴

CRFD contends that the second device described in Phan Helsinki is identified based on the use of a user ID within the relevant client application, not by “specifying” a second device. Under this theory, CRFD argues that Phan Helsinki teaches that any unspecified second device can resume a session in “pull” mode, when the second device contacts the MWS through use of a user ID. Put another way, CRFD asserts that Phan Helsinki does not

⁴ CRFD contends that claim 23, like claim 1, recites “specifying a second device” and is therefore patentable over Phan Helsinki for the same reasons as claim 1. As claims 4 and 25 have the same relevant limitations and depend from claims 1 and 23, respectively, with the same limitations, CRFD contends that claims 4 and 25 are each patentable over Phan Helsinki for at least the same reasons as claims 1 and 23. CRFD acknowledged that, as to this appeal and the limitation at issue, it did not argue claims 23 and 25 in a manner separate from how it argued claims 1 and 4. Oral Arg. at 1:01–1:34, <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2016-2298.mp3>.

teach or suggest that the user ID is associated with any particular device such that the device could self-specify.

We disagree, and conclude that substantial evidence supports the Board's determination that Phan Helsinki anticipates the "specifying a second device" limitation. The Board found that Phan Helsinki teaches the step of specifying a second device through the user's selection of a device on which to resume the session by taking action on that device, which causes the second device's client application to communicate with the MWS to retrieve the session state. *Id.* at *25. And the Board determined that Phan Helsinki discloses a second device that is specified when a user "logs on to *or starts a new device* to continue the session." *Id.* at *24 (emphasis added).

CRFD concedes that Phan Helsinki teaches that any second device may resume the session in "pull" mode, as Phan Helsinki allows any second device that contacts the MWS to resume the session based on a user ID. Phan Helsinki explains that, "[w]hen a user changes devices or spawns a new branch of a session to a new device, the middleware server authenticates the user *on the new device.*" J.A. 1345 (emphasis added). The new device then receives the session data from the MWS, which permits "seamless access to data *from any device* on a variety of networks." J.A. 1344 (emphasis added). The MWS acts to "facilitate migration [of application sessions] *between devices.*" J.A. 1345 (emphasis added). As the Board found, these teachings indicate that the user's actions to resume a session on the second device "specify" that device to the MWS, as required by claims 1, 4, 23, and 25.

CRFD's expert testimony and its own attorney argument also support the Board's finding of anticipation. As the Board noted, Dr. Mohapatra acknowledged that the "[s]econd device is specified at some point in time, yes, in the pull model." J.A. 1773, at 67:23–24. Dr. Mohapatra

further noted that the second device would identify itself using at least its unique IP address when making a request to the MWS to resume the session. J.A. 1747–48, at 41:3–42:2. CRFD’s attempts to recast this testimony are unpersuasive, particularly given CRFD’s concession before the Board that, in Phan Helsinki, “at some point the middleware server knows what the second device is.” J.A. 372, at 24:3–4.

We further agree with the Board that the second device in Phan Helsinki must be specified at some point, because otherwise the MWS would not know where to send the saved session state. And, as the Board pointed out, even if the second device must be specified to the MWS, the second device must provide enough information to the MWS so that the server can distinguish between the potential devices to which it could transfer the session history. *DISH Final Written Decision*, at *27. The Board concluded that the user account discussed in Phan Helsinki could act to provide the information needed to distinguish the second device from other potential devices. *Id.* We agree with the Board that the user’s action of indicating which device should resume the session is the act of specifying. As the claims do not limit who or what performs the “specifying” step, we find substantial evidence supporting the Board’s conclusion that Phan Helsinki discloses the specifying step.

For these reasons, we affirm the Board’s conclusion that Phan Helsinki anticipates claims 1, 4, 23, and 25 of the ’233 patent.⁵ We need not reach CRFD’s contentions

⁵ The parties dispute whether the teachings of Phan San Jose can be used, in any form, in this anticipation analysis. Although the Board rejected the use of Phan San Jose to support CRFD’s arguments as to Phan Helsinki, it did so because it did not see the relevance of Phan San Jose to the ground of anticipation based on

that the Board erred in finding that claims 4 and 25 would not have been obvious over Phan San Jose and Phan Helsinki, as we conclude those claims are anticipated by Phan Helsinki. We also need not reach DISH's counterargument that claims 1 and 23 would have been obvious over the combination of Bates and Chan, as we affirm the Board's decision that those claims are anticipated by Phan Helsinki as to this appeal.

C. *Hulu Final Written Decision*
(Appeal No. 16-2437)

Hulu appeals the Board's determination in the *Hulu Final Written Decision* that (1) claims 1–3, 23, and 24 are not anticipated by Bates, (2) claims 1–6, 8–11, 23–25, and 29–31 would not have been obvious over Bates and Chan; (3) claims 13, 14, 34, and 35 would not have been obvious over Bates and Zou; and (4) claims 15, 17–20, 36, and 38–41 would not have been obvious over Bates, Zou, and Chan. For the reasons stated below, we reverse the Board's determinations of nonobviousness, and do not reach the Board's determination on anticipation.

1. Procedural History

Hulu filed a petition requesting inter partes review of claims 1–6, 8–11, 13–15, 17–20, 23–25, 29–31, 34–36, and 38–41 of the '233 patent. *Hulu Final Written Decision*, at *1. The Board instituted review on four grounds of unpatentability: (1) claims 1–3, 23, and 24 as anticipated by Bates; (2) claims 1–6, 8–11, 23–25, and 29–31 as obvious

Phan Helsinki. *DISH Final Written Decision*, at *21–22. For the reasons explained above, we find it unnecessary to look beyond the four corners of Phan Helsinki to determine whether it teaches the step of specifying a second device, and thus need not decide whether use of Phan San Jose as an extrinsic reference in this anticipation analysis would be appropriate.

over Bates and Chan; (3) claims 13, 14, 34, and 35 as obvious over Bates and Zou; and (4) claims 15, 17–20, 36, and 38–41 as obvious over Bates, Zou, and Chan. *Id.* at *6.

In the final written decision, the Board concluded that Hulu had not shown by a preponderance of the evidence that any of the challenged claims were unpatentable based on the grounds on which the Board instituted review. At the outset, the Board construed the term “session” to mean “a series of information transactions between communicating devices during a particular time period.” *Id.* at *8. The parties agreed that the claims require that the session must be discontinued before the session history may be transmitted. *Id.* at *10.

The Board concluded that Bates does not anticipate claims 1–3, 23, and 24 of the ’233 patent because it does not expressly or inherently disclose transmitting a session history from a first device “after said session is discontinued on said first device,” as required by these claims. *Id.* at *13–28. The Board concluded that nothing in Bates explicitly discloses when a “session” ends, and that a “session” as defined in the ’233 patent occurs during the period of time Bates references as a “browsing session.” *Id.* at *16–18. Because Figure 7 of Bates “depicts the steps performed by the client computer ‘during a browsing session,’” *id.* at *18, and because “the client computer begins processing an event at step **704**, determines whether the event is a share event (e.g., ‘upon user request,’ ‘at shutdown,’ or ‘at idle period’) at step **710**, and transmits the browser information at step **720**,” *id.*, the Board concluded that “transmission of the session history in Bates occurs *during* the session, not *after* the session is discontinued as required by the claims.” *Id.* (emphasis in original). The Board found that Bates does not explicitly disclose when a “session” ends and, as all steps depicted in Figure 7 occur during a browsing session, the “session” ends after transmission of the browser information. *Id.* at

*19–20. Although Hulu argued that, when certain “share events” occur (“upon user request,” “at shutdown,” and “at idle period”), transmission of the session history could or would necessarily occur after discontinuation of the session, the Board credited CRFD’s expert testimony that “it is at least equally likely that transmission occurs *before* discontinuing the session” for each of these share events. *Id.* at *21–22 (emphasis in original).⁶

With respect to obviousness, the Board first noted that Hulu relied solely on Bates for teaching the claimed step of transmitting a session history of a first device from the first device to a session transfer module “after said session is discontinued on said first device.” *Id.* at *31. Although Hulu argued, in a different asserted ground upon which the Board did not institute review, that it would have been obvious based on Bates to transmit the session history “after said session is discontinued on said first device,” the Board found that Hulu had failed to make this argument in the asserted grounds on which the Board instituted review. *Id.* at *31 n.3. Even if Hulu had made this argument as part of an instituted ground, however, the Board explained that it would not have been persuaded because Hulu failed to provide “a sufficient reason for why a person of ordinary skill in the art would have modified the sequence of operations in Bates to discontinue the session before transmitting the browser information.” *Id.* As the Board concluded in its anticipation analysis that Bates does not teach the “after said session is discontinued on said first device” limitation, the Board concluded that Hulu had not shown by a preponderance of the evidence that claims 1–6, 8–11, 13–15, 17–

⁶ The Board also found that three of Hulu’s arguments made in reply offered new theories not argued in Hulu’s petition, and therefore declined to consider them. *Id.* at *24–28.

20, 23–25, 29–31, 34–36, and 38–41 would have been obvious over Bates in view of Chan and/or Zou. *Id.* at *31.

2. Obviousness of Challenged Claims

Hulu challenges the Board’s determination that various claims of the ’233 patent would not have been obvious on the grounds on which the Board instituted review. On appeal, the only claim limitation in dispute for these grounds is “transmitting a session history of said first device from said first device to a session transfer module *after* said session is discontinued on said first device.” ’233 patent, col. 9, ll. 35–37 (emphasis added). We conclude that the Board erred, both in how it performed its obviousness analysis and in the merits of its determination of nonobviousness.

Hulu first contends the Board failed to conduct a separate analysis on obviousness as to each of the instituted grounds. Instead, according to Hulu, the Board improperly relied on its finding that Bates did not anticipate various asserted claims of the ’233 patent to support its finding of nonobviousness without considering whether Bates *suggests* transmission of session history after discontinuation.

We agree that the Board legally erred in its treatment of Hulu’s obviousness challenge. Although Hulu raised separate arguments as to the obviousness of certain claims, the Board performed limited fact-finding in its obviousness inquiry, only examining the level of ordinary skill in the art and then relying primarily on its determination that Bates did not anticipate the challenged claims. *Hulu Final Written Decision*, at *28–31. But “[t]he tests for anticipation and obviousness are different.” *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008). As noted, anticipation is a question of fact, while obviousness is a question of law based on underlying factual findings. *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015).

And, “the various unenforceability and invalidity defenses that may be raised by a defendant—inequitable conduct, the several forms of anticipation and loss of right under § 102, and obviousness under § 103—require different elements of proof.” *Duro-Last, Inc. v. Custom Seal, Inc.*, 321 F.3d 1098, 1107–08 (Fed. Cir. 2003). Even if a reference’s teachings are insufficient to find anticipation, that same reference’s teachings may be used to find obviousness. See, e.g., *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1335 (Fed. Cir. 2016) (“A claimed invention may be obvious even when the prior art does not teach each claim limitation, so long as the record contains some reason why one of skill in the art would modify the prior art to obtain the claimed invention.”), *overruled on other grounds*, *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1296 n.1 (Fed. Cir. 2017) (*en banc*). Whatever the merits of the Board’s determination that Bates does not anticipate the ’233 patent’s transmitting session history limitation, its findings on anticipation are insufficient as a matter of law to decide the obviousness inquiry.

Hulu next argues that, contrary to the Board’s finding, it would have been obvious, based on Bates, to transmit session history after session discontinuation. *Hulu Final Written Decision*, at *31 n.3. Hulu explains that it explicitly made this argument in its petition, where it contended that claims 1–3, 23, and 24 would have been obvious in view of Bates alone. J.A. 69–70 (“It would also have been obvious that in Bates, the browser information can be transferred after discontinuation of the session on the first device; Bates explicitly discloses that transfer can occur at a variety of user-chosen times, which could include after discontinuation.”). Hulu then incorporated this argument into other grounds of unpatentability—Bates in view of Chan, at least as to claims 1–3, 23, and 24, and Bates in view of Zou—by direct citation to this argument in the petition. J.A. 74; J.A. 83. The Board did not institute review on the obviousness of

the '233 patent over Bates alone, due to its finding that such institution would be redundant. J.A. 109.

We agree with Hulu that the Board erred on this point, as Hulu expressly incorporated this argument as part of other grounds of unpatentability on which the Board instituted trial.⁷ Hulu relies solely on the teachings of Bates to satisfy the transmitting limitation as to all asserted claims. The Board, in its discretion, elected to not institute review on Bates alone for redundancy reasons, but instituted review on obviousness grounds that include the only reference—Bates—cited in that ground. To bar Hulu from pressing an argument it raised in a ground the Board found “redundant” and that it expressly incorporated into other proposed grounds of unpatentability on which the Board instituted would not only unfairly prejudice Hulu, but would also raise questions about the propriety of the Board’s redundancy decision. As the parties agree, our obviousness analysis on this limitation is controlled by the teachings and suggestions of Bates, and the Board’s decision to not review the obviousness ground of Bates alone for redundancy reasons cannot control the breadth of the obviousness inquiry it took below, and that we must review here.

Finally, Hulu contends that the Board misread the Bates reference in concluding that it did not render obvious the transmitting limitation. At the outset, we reject

⁷ Although Hulu did not expressly incorporate this argument into its petition as to proposed Ground 5, Bates in view of Zou, in further view of Chan, Ground 5 also does not address the “transmitting” limitation at issue in this appeal. Hulu does explain in this ground, however, that it would have been obvious to combine Bates and Zou and Bates and Chan. J.A. 86. We believe this incorporation suffices to support the argument Hulu now presses on appeal.

CRFD’s argument that Hulu has raised a new obviousness argument on appeal as to its contention that Bates provided only two choices for transmitting a session history: either before or after the session has been discontinued. Hulu made this argument both before the Board and in its opening brief. Appellant Br. at 28–30; J.A. 69; J.A. 484–85. Before the Board, Hulu argued and offered expert testimony to support its position that “[i]t would also have been obvious that in Bates, the browser information can be transferred *after* discontinuation of the session on the first device.” J.A. 69 (emphasis added); J.A. 484–85.

The parties agree that a person of ordinary skill would have understood that Bates’s system could transmit browser information prior to or after discontinuation of a session. In fact, CRFD admitted in its patent owner response that “transmissions that occur when an application or computer is being shutdown need not necessarily be concurrent with a transmission after a session is discontinued. It is *equally likely* that the transmission is made as part of the shutdown process – i.e., concurrently with the session being terminated.” J.A. 136 (emphasis added). This admission corresponds with Dr. Mohapatra’s testimony as to how transmission would occur in response to three share events in Bates:

For example, a transmission that occurs “immediately upon user request” is not necessarily concurrent with a transmission after a session is discontinued. User requests may occur at any time, and are especially likely to occur during a browsing session as a user comes across interesting information or performs actions that the user wishes to preserve as browsing history or other session events. Therefore, *it is equally, if not more, likely* that such a user request will be made (and a corresponding transmission of session state

effected) while the user is engaged in a current session.

J.A. 852–53 (emphasis added).

Likewise, transmissions that occur when an application or a computer is being shutdown need not necessarily occur after a session is discontinued. *It is equally likely* that the transmission is made as part of the shutdown process – i.e., concurrently with the session being terminated.

J.A. 853 (emphasis added).

Similarly, transmissions that occur when a computer is idle *do not necessarily occur after* a session is discontinued.

J.A. 854 (emphasis added). As part of its anticipation analysis, the Board found Dr. Mohapatra’s testimony on these share events persuasive and supported by the text of Bates. *Hulu Final Written Decision*, at *22.

But, even in light of CRFD’s admission and Dr. Mohapatra’s testimony, the Board failed to consider whether Bates *suggests* transmitting a session history after discontinuation when considering whether the asserted claims would have been obvious. Based on the Board’s findings and credibility determinations, we conclude that a person of ordinary skill would have two predictable choices for when the Bates system would transmit browser information, providing a person of ordinary skill with a simple design choice as to whether to specify transmission after discontinuation to meet Bates’s goal to preserve the entire session history. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”); *id.* at 417 (“If a person of

ordinary skill can implement a predictable variation, § 103 likely bars its patentability.”).

As the Board acknowledged, the motivation to modify Bates to transmit a session history after discontinuation of the session exists in Bates itself. The Board found that one of Bates’s goals is to preserve session history; quoting discussion of a step shown in Figure 8 of Bates, the Board found that “it is true that Bates’s system ‘preserves the *current status* of a browsing session to be resumed at another location.’” *Hulu Final Written Decision*, at *31 n.3 (quoting Bates, col. 11, ll. 6–8) (emphasis in original). Even in light of this finding, the Board concluded that Hulu had failed to provide a sufficient reason for why a person of ordinary skill would have modified the sequence of operations in Bates to discontinue the session before transmitting the browser information. The Board found that the goal of preserving the current status of a browsing session “is accomplished if the browser information is transmitted upon user request, at shutdown, or at an idle period during a browsing session.” *Id.*

That some embodiments identified by the Board could transmit session history before or during discontinuation and thus would satisfy the goal expressed in Bates is not dispositive of an obviousness inquiry. Indeed, given this goal, it is illogical to conclude that a person of ordinary skill would not have considered ways in which the *entire* session history could be transferred. The Board construed the term “discontinued” to require that the session be “terminated or otherwise stopped, with the ability to be resumed.” *Id.* at *8. If a transfer occurs before discontinuation of a session, additional information transactions may occur after the transfer but prior to discontinuation, but these additional information transactions would be lost if a session transferred before discontinuation.

CRFD points to the prosecution history of the ’233 patent in support of the Board’s position that a person of

ordinary skill would not depart from the explicit teachings of Bates as to times for preserving browsing information: immediately upon user request, at shutdown, and when the user's computer is idle. *See id.* at *31 n.3. When the applicant amended claim 1 during prosecution to add the "transmitting" step, the step recited "transmitting a session history of said first device from said first device to a session transfer module *during a transition* of said session from said first device to said second device." J.A. 308 (emphasis added). The examiner rejected the claims after concluding that a prior art reference (Belfiore)⁸ discloses transmitting a session history during transition of a session between devices. J.A. 373. The applicant then amended claim 1 to replace the phrase "during a transition of said session from said first device to said second device" with "after said session is discontinued on said first device," and the '233 patent issued with this limitation. J.A. 384; J.A. 405; J.A. 409.

During prosecution, the applicant distinguished the claims at issue from those in Belfiore by contending that Belfiore continuously updates the session history information, which causes continuous network traffic or requires a large centralized storage space. According to the applicant, neither of these features are required when practicing the '233 patent. J.A. 398. The '233 examiner concluded that Belfiore could be distinguished from the claims at issue here, because the Belfiore reference discloses a system and method in which "the session history information is transmitted periodically from the first device to a session server prior to termination of the session on the first device." J.A. 409.

CRFD compares Belfiore to Bates, as Bates teaches the need for storage for emails in a certain embodiment

⁸ U.S. Patent Application Publication No. 2002/0059425, later issued as U.S. Patent No. 6,990,513.

and periodic transfer of browser information in another. Bates, col. 3, ll. 59–65; *id.* col. 8, ll. 5–6. But CRFD’s comparison fails, as it assumes that, even if Bates discloses an embodiment with a similar solution to that explained in Belfiore, Bates cannot contain *other* teachings that disclose or suggest the claimed embodiment. The Board found, and the parties acknowledge, that Bates discloses multiple embodiments. As we noted above, Bates at least suggests the transmission of session history *after* a first device has discontinued a session, to preserve the browsing history prior to resuming the session on another device. “A reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *In re Applied Materials*, 692 F.3d at 1298.⁹

⁹ Hulu relies solely on Bates to teach or suggest the transmitting limitation of the asserted claims of the ’233 patent. Hulu cited Chan for its disclosures related to session transfer modules, J.A. 73, and Zou for its teachings concerning a “server-side implementation of session transfer between computers,” J.A. 81. But CRFD contends that the features of the Chan and Zou systems would have directed a person of ordinary skill *away* from combining Bates with Chan and/or Zou. The Board did not make a finding of teaching away, and this conclusion is consistent with our conclusions about what a person of ordinary skill would understand about Bates. Even Hulu acknowledges that Chan and Zou add nothing toward the transmitting limitation at issue here. And CRFD’s argument fails to account for the logical result of the Board’s factual findings, that Bates would at least *suggest* transmission after discontinuation of a session. Even if Chan and Zou teach or suggest transmission before discontinuation or during discontinuation, this does not negate this

The Board's failure to perform a proper obviousness analysis, and its misreading of the Bates reference, led it to err in its obviousness determination as to the asserted claims of the '233 patent. For the foregoing reasons, we reverse the Board's determination that Hulu did not show, by a preponderance of the evidence, the obviousness of claims 1–6, 8–11, 13–15, 17–20, 23–25, 29–31, 34–36, and 38–41 of the '233 patent. We need not address Hulu's anticipation challenge to claims 1–3, 23, and 24 of the '233 patent or its related procedural arguments, because our decision on obviousness invalidates all claims Hulu argued were anticipated.

III. CONCLUSION

Substantial evidence supports the Board's findings that (1) claim 1 of the '233 patent is anticipated by Phan San Jose and (2) claims 4–6 and 8–11 of the '233 patent would have been obvious over the combination of Phan San Jose and Phan Helsinki, and we affirm the Board's determinations as to these claims and references in the *Iron Dome Final Written Decision*. Substantial evidence also supports the Board's determination that claims 1, 4, 23, and 25 of the '233 patent are anticipated by Phan Helsinki, and we affirm the Board's determination as to these claims and references in the *DISH Final Written Decision*. For the reasons stated above, however, we reverse the Board's determinations in the *Hulu Final Written Decision* as to the obviousness of various claims, and conclude that (1) claims 1–6, 8–11, 23–25, and 29–31 would have been obvious over Bates and Chan, (2) claims 13, 14, 34, and 35 would have been obvious over Bates

teaching of Bates as it pertains to the obviousness of the transmitting limitation of the asserted claims.

and Zou, and (3) claims 15, 17–20, 36, and 38–41 would have been obvious over Bates, Zou, and Chan.¹⁰

**AFFIRMED IN APPEAL NOS. 16-2198 AND 16-2298;
REVERSED IN APPEAL NO. 16-2437**

COSTS

Costs to Hulu in Appeal No. 16-2437.

¹⁰ Given the repetitive nature of the issues we have considered across these three appeals, we question whether the Board could have managed these IPRs in a more efficient manner. The record does not reflect any attempt to consolidate these cases to enhance the efficiency of the Board's examination of the grounds raised against the '233 patent, even though the petitions were filed within two months of each other and the Board published its decisions to institute review of various claims offered by the petitioners at similar times. Each of these petitions challenged claim 1, along with various other claims, based on two sets of prior art that overlapped over various parts of the proceedings. It is hard to see how the Director would not have been authorized under 35 U.S.C. § 315(d) to consolidate these matters.