

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PELTON INTERACTIVE, INC.,
Petitioner,

v.

NEC CORPORATION,
Patent Owner.

IPR2023-01241
Patent 9,769,427 B2

Before MICHAEL J. STRAUSS, CHARLES J. BOUDREAU, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner Peloton Interactive, Inc. (“Peloton”) filed a Petition (Paper 3, “Pet.”) under 35 U.S.C. §§ 311–319 requesting *inter partes* review (“IPR”) of claims 10–13, 19, 21, and 33 of U.S. Patent No. 9,769,427 B2 (Ex. 1001, “the ’427 patent”). Patent Owner NEC Corporation (“NEC”) filed a Preliminary Response (Paper 11, “Prelim. Resp.”).¹ Peloton also filed a Preliminary Reply (Paper 14, “Prelim. Reply”) relating to discretionary-denial issues, and NEC filed a Preliminary Sur-reply (Paper 15, “Prelim. Sur-reply”).

Peloton also filed a Statement Regarding Multiple Petitions, providing reasons to institute trial both in this case and related IPR2023-01240. Paper 2. NEC filed a Response. Paper 12.

Under the authority delegated to us by the Director of the USPTO under 37 C.F.R. § 42.4(a), we may institute an *inter partes* review when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c) (2023). Applying that standard, we institute an *inter partes* review of all the challenged claims of the ’427 patent for the reasons explained below. This is a preliminary decision, and we will base our final written decision on the full trial record.

¹ The parties identify themselves as the real parties in interest, and this is not contested on the preliminary record. *See* Pet. 1; Paper 7, 2.

II. BACKGROUND

A. THE '427 PATENT (EX. 1001)

The '427 patent describes “a content delivery system transmitting content data representing content to user equipment.” Ex. 1001, 1:5–7. Such systems, as known in the prior art, “includ[ed] a content transmitter, a content receiver, and a connection controller (SIP (Session Initiation Protocol) server).” *Id.* at 1:11–13. According to the '427 patent, the earlier systems could provide pre-stored content data to the content receiver, but were unable to insert user-relevant advertisements into the main content. *See Id.* at 1:14–47. Thus, an object of the claimed invention was “to provide a content delivery system capable of solving the problem that it is impossible to cause a user to view the user’s desired content and/or advertisement content selected according to the user.” *Id.* at 1:48–52.

Figure 1 is reproduced below:

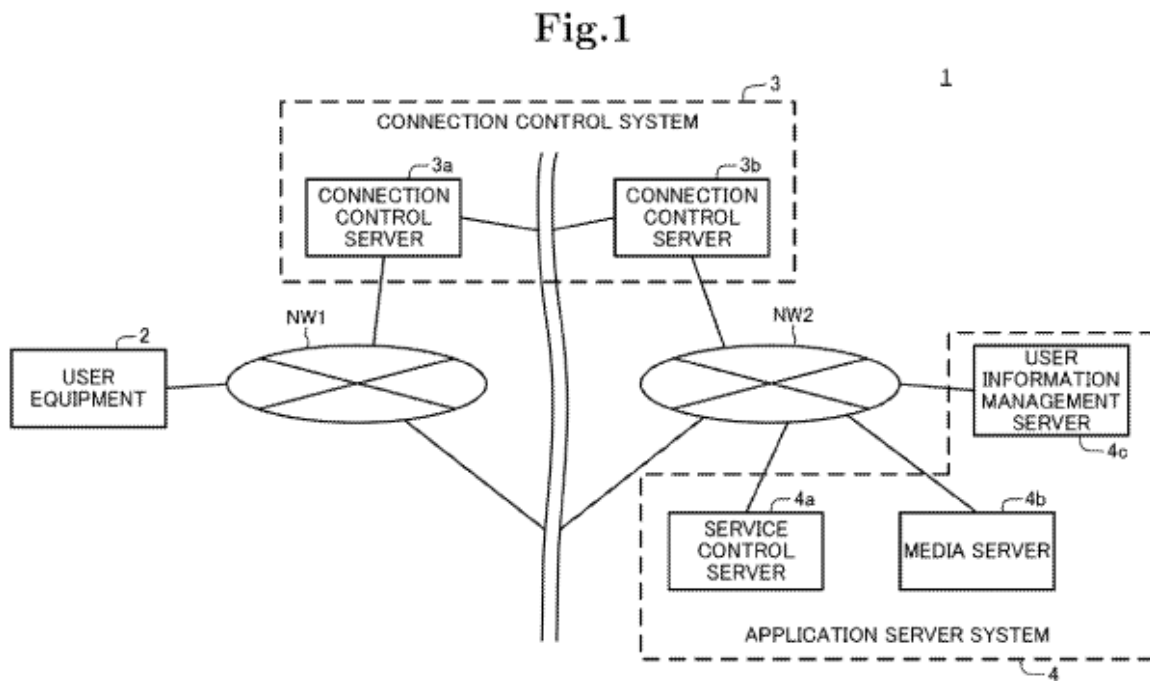


Figure 1 depicts content delivery system 1, which implements video on demand or Internet Protocol television (IPTV). Ex. 1001, 4:58–62. The system includes user equipment 2, connection-control system 3 (including servers 3*a* and 3*b*), and application-server system 4. *See id.* at 4:63–5:57. These components communicate with each other through internet communication lines NW1 and NW2. *See id.* at 5:4–10.

Connection control system 3 “is configured to establish, upon receiving a SIP message containing equipment specification information transmitted by the user equipment 2, [a] connection (session) between the application server system 4 and the user equipment 2.” Ex. 1001, 5:42–46. Application server 4 then provides the requested content to user equipment 2, with service control server 4*a* transmitting content data provided by media server 4*b*. *Id.* at 5:49–53. User information management server 4*c* stores, and provides to service control server 4*a*, profile information of the users of user equipment 2. *Id.* at 5:53–57.

Figure 2 of the ’427 patent, showing the system functionally in more detail, is reproduced below:

Fig.2

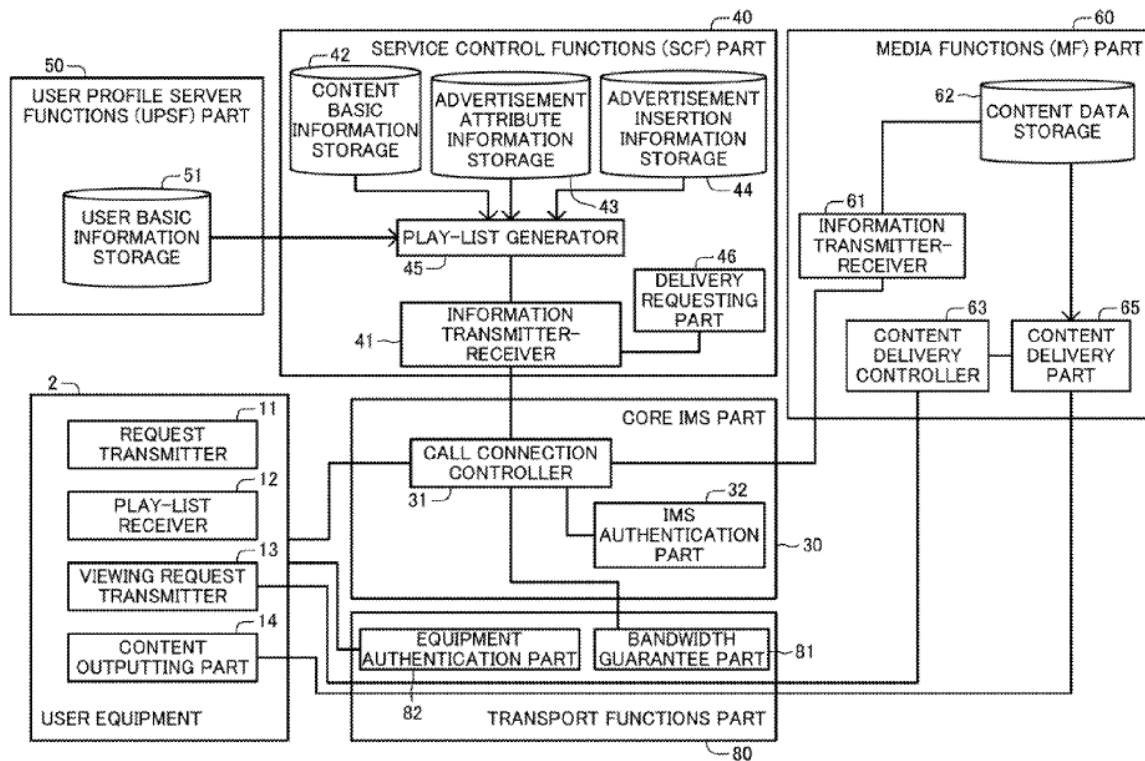
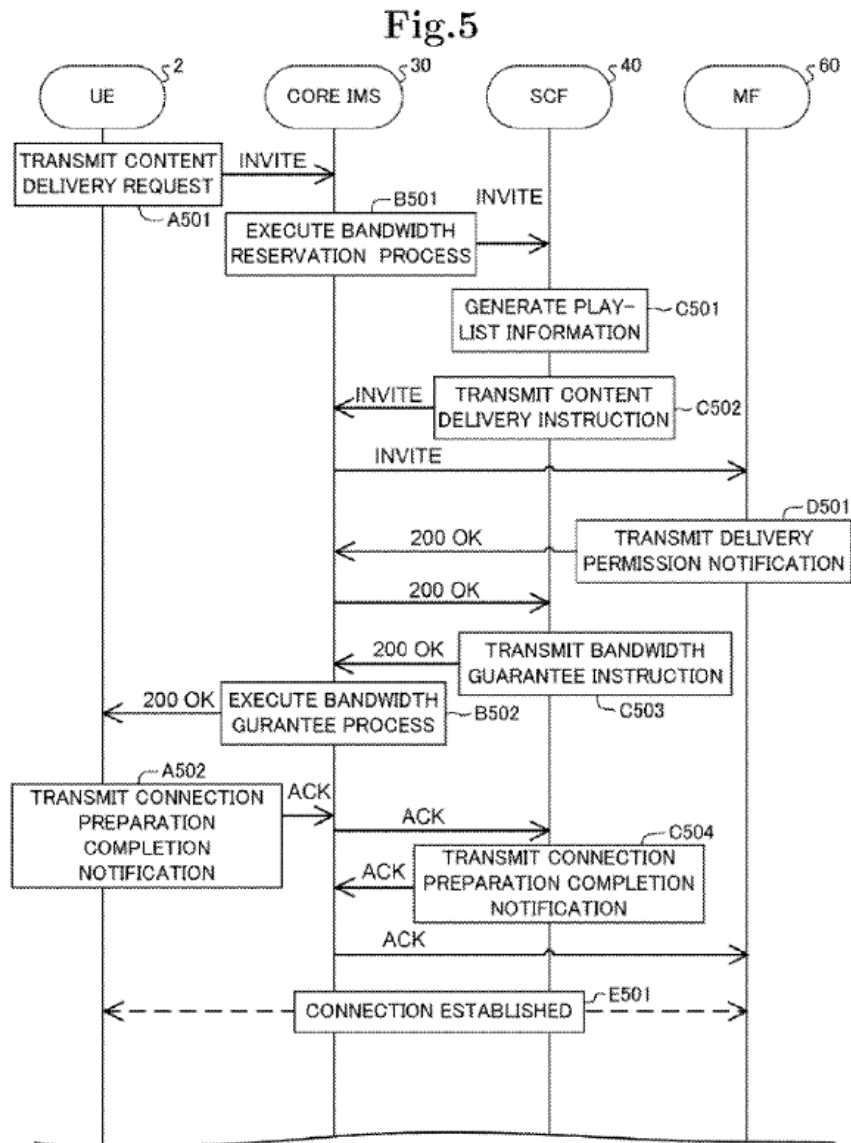


Figure 2 is a block diagram showing functions of content delivery system 1. Ex. 1001, 5:59–60. The lower-central part of the figure depicts that the functions of connection control system 3 are divided into two parts: (1) core Internet Protocol multimedia subsystem (“IMS”) part 30 that includes call connection controller 31 and IMS authentication part 32; and (2) transport functions (“TF”) part 80, which includes equipment authentication part 82 and bandwidth guarantee part 81. *Id.* at 7:51–55. Other functional parts of the system depicted in Figure 2 include user equipment 2, service control functions (“SCF”) part 40, and media functions (“MF”) part 60.

Figure 5, reproduced below, depicts the process for establishing a connection between user equipment 2 and media server 4b to transmit media that an authenticated user has selected from a list of available content (*see* Ex. 1001, 13:14–49):



As shown above, Figure 5 begins when user equipment (UE) 2 sends “transmit content delivery request message” A501 to core IMS part 30 within connection control system 3. Ex. 1001, 13:50–58. SIP “INVITE” message A501 includes “main content identification information, user authentication success information as the user identification information for identifying the user, and equipment address information.” *Id.* at 13:50–58.

Core IMS part 30 then “executes a bandwidth reservation process [B501] as preparation for guaranteeing a communication bandwidth” and

transmits request A501 to SCF part 40 (part of service control server 4a). Ex. 1001, 13:59–64. SCF part 40 then uses user information to generate a playlist (C501) including main content and relevant advertisements stored in media server 4b and send that playlist (C502) to media functions (“MF”) part 60 (part of media server 4b) in a SIP message via core IMS part 30. *See id.* at 13:65–14:64.

Based on the available media delivery information and the generated media playlist, SCF part 40 “determines a communication bandwidth required for transmitting the main content data identified by the play-list information” and “transmits, to the core IMS part 30, a bandwidth guarantee instruction [C503] containing communication bandwidth information indicating the determined communication bandwidth.” Ex. 1001, 15:14–26. Bandwidth guarantee instruction C503 is in the form of a SIP “OK” message. *Id.* at 15:26–27. Core IMS part 30 then “transmits, to the transport functions [TF] part 80, the received communication bandwidth information and communication channel specification information for specifying a communication channel between the user equipment 2 and the media server 4b.” *Id.* at 15:30–34. TF part 80 “executes a process to guarantee the communication bandwidth information,” and then core IMS part 30 sends a “transmission preparation completion notification” SIP message (B502²) to

² Although the text of the ’427 patent identifies “B502” as the step of transmitting a “transmission preparation completion notification” SIP message to UE 2 (Ex. 1001, 15:41–48), “B502” appears in Figure 5 as the label for “execute bandwidth guarantee process.” At trial, the parties may wish to clarify their positions on how a person of ordinary skill in the art would have interpreted this apparent discrepancy.

user equipment 2. *Id.* at 15:41–56. After a series of acknowledgements, a connection is established between user equipment 2 and media server 4b (A502, C504, E501). *Id.* at 16:4–35.

B. CHALLENGED CLAIMS AND GROUNDS

Representative claim 10 is as follows:

- 10. A content delivery system comprising
 - [10a] an application server system and
 - [10b] one or more connection control servers,
 - the one or more connection control servers comprising a sixth receiver for receiving equipment specification information transmitted by user equipment and establishing connection between the application server system and the user equipment based on the received equipment specification information,
 - [10c] the application server system comprising:
 - a fourth transmitter for transmitting content data representing content to the user equipment with which connection is established by the sixth receiver;
 - [10d] a controller for controlling a service provided by the fourth transmitter; and
 - [10e] a second memory for storing profile information of a user of the user equipment,
 - [10f] the fourth transmitter comprising a memory for storing sub content data representing sub content and main content data representing main content,
 - [10g] the controller comprising:
 - a first receiver for receiving a content delivery request containing main content identification information for identifying the main content and transmitted by the user equipment, via the sixth receiver; and

- [10h] an [sic] processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content and preliminarily stored by the user profile server functions part, the controller or the one or more connection control servers; and
- [10i] a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the sixth receiver to the user equipment which has transmitted the content delivery request,
- [10j] wherein the first transmitter is configured to, at a same time that the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection, transmit the play-list information via the sixth receiver to the user equipment which has transmitted the content delivery request,
- [10k] the play-list information being information containing the main content identification information contained in the content delivery request and the selected sub content specification information, and the play-list information being information containing information indicating a sequence in which the main content identified by the main content identification information and the sub content specified by the selected sub content specification information are output,
- [10l] wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and outputting, based on the received main content data and sub content data, viewing content in which sub content represented by the sub content data is inserted in main content represented by the main content data.

Ex. 1001, 39:12–40:3 (Peloton’s reference numbers added).

Peloton argues four grounds for *inter partes* review, as summarized in the following table:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
10, 12, 21, 33	103(a) ³	Ueda, ⁴ SIP Standard, ⁵ SDP Standard ⁶
10, 12, 21, 33	103(a)	Ueda, SIP Standard, Bechtolsheim ⁷
11, 13, 19, 23	103(a)	Ueda, SIP Standard, SDP Standard, Cohee ⁸
11, 13, 19, 23	103(a)	Ueda, SIP Standard, Bechtolsheim, Cohee

Pet. 3–4.

C. DECLARATORY TESTIMONY

Peloton submits a declaration by Clifford Reader, Ph.D. Ex. 1008.

NEC submits a declaration by Jeremy R. Cooperstock, Ph.D. Ex. 2001.

³ 35 U.S.C. § 103(a) (2006). Section 103 was amended by the Leahy–Smith America Invents Act (“AIA”), Pub. L. No. 112-29 § 103, sec. (n)(1), 125 Stat. 284, 287, 293 (2011) (effective Mar. 16, 2013). This pre-AIA version of § 103 applies because the ’427 patent issued from an international application filed on November 17, 2009, which is before the effective date of the AIA amendments. *See* Ex. 1001, code (22).

⁴ Ueda et al., US 2009/0094321 A1 (published Apr. 9, 2009) (Ex. 1003).

⁵ J. Rosenberg et al., *SIP: Session Initiation Protocol* (RFC 3261, Network Working Grp., Internet Eng’g Task Force, 2002) (Ex. 1004).

⁶ M. Handley et al., *SDP: Session Description Protocol* (RFC 4566, Network Working Grp., Internet Eng’g Task Force, 2006) (Ex. 1005).

⁷ Bechtolsheim et al., US 2009/0100496 A1 (published Apr. 16, 2009) (Ex. 1006).

⁸ Cohee et al., US 2010/0010884 A1 (published Jan. 14, 2010) (Ex. 1007).

D. RELATED PROCEEDINGS

As related matters, the parties identify *NEC Corp. v. Peloton Interactive, Inc.*, No. 22-cv-00987 (filed D. Del. July 28, 2022) (“related district court case”); *NEC Corp. v. Our Body Electric, Inc.*, No. 22-cv-00986 (filed D. Del. July 28, 2022); and *NEC Corp. v. Tone It Up, Inc.*, No. 22-cv-00988 (filed D. Del. July 28, 2022). Pet. 1–2; Paper 7, 2.

Peloton has challenged different claims of the ’427 patent in the IPR2023-01240 proceeding.

III. DISCRETIONARY GROUNDS FOR DENYING INSTITUTION

Institution of *inter partes* review is at the Director’s discretion, which has been delegated to the Board under her guidance. *See* 35 U.S.C. § 314(a); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he [USPTO] is permitted, but never compelled, to institute an IPR proceeding.”); 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”).

A. DISCRETION UNDER SECTION 325(d)

Section 325(d) provides the Director and thus the Board particular discretion to reject a petition when “the same or substantially the same prior art or arguments previously were presented to the [Patent] Office.” In exercising this discretion, the Board uses a two-part framework in which we consider

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office;
- and (2) if either condition of [the] first part of the framework is

satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

Relevant to this analysis are six factors outlined in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph):

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18 (formatting added). “[T]he *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d).” *Advanced Bionics*, Paper 6 at 8 (footnote omitted). Factors (a), (b), and (d) pertain to the first part of the *Advanced Bionics* framework, while factors (c), (e), and (f) pertain to the second part of that framework. *Id.* at 10.

NEC argues that we should deny institution under § 325(d) because during prosecution of the '427 patent, the Examiner allegedly considered the SIP and the SDP Standards, and because Ueda, Bechtolsheim, and Cohee are allegedly cumulative to Aarts,⁹ which the Examiner cited during prosecution. *See* Prelim. Resp. 5–11.

First, according to NEC, the Examiner considered the SIP and SDP Standards because these references allegedly appear on the face of the '427 patent. Prelim. Resp. 7–8 (citing Ex. 1001, front page, 6:1–31, 13:14–58, 19:38–58, Figs. 7–9); *see also* Prelim. Sur-reply 4–5. Peloton disputes this because neither standard was cited in an information disclosure statement or asserted in a rejection. Prelim. Reply 4 & n.5 (citing Ex. 1002). However, because the text of the '427 patent specifically references these standards, we will assume, for this decision, that the Examiner considered them.¹⁰

NEC also argues that “Ueda’s disclosure is substantially the same as *Aarts*, prior art of record.” Prelim. Resp. 9 (citing Ex. 1003). According to NEC, the Examiner considered that Aarts discloses an application server system and an authentication service that generates advertisement information, for which Peloton similarly relies on Ueda. *Id.* at 9–10.

Peloton responds that the Examiner found that Aarts did not disclose the “play-list information” limitation for which Peloton now relies on Ueda,

⁹ Aarts, US 2008/0256216 A1 (published Oct. 16, 2008) (Ex. 2005).

¹⁰ Notwithstanding Patent Owner’s assertion that the “SIP Standard and SDP Standard . . . are cited on the face of the '427 Patent” and citation of “Ex. 1001, 1” as alleged support for that argument (Prelim. Resp. 7), we find no reference to either standard on the front page (i.e., the “face”) of the '427 patent.

and relied instead on a secondary reference. Prelim. Reply 2–3 (citing Ex. 2004, 15–16; *accord* Ex. 1002, 533–34).

NEC concedes this, but argues it “is of no moment” because Peloton has not explained why this limitation is a “central feature” of the claims, and “the play-list feature was not identified as a specific reason for patentability of the allowed claims.” Prelim. Sur-reply 2–3 & n.2 (citing Ex. 2007, 7). NEC argues that “the key features relied upon for Ueda are taught (and were examined) by Aarts during prosecution, so at best, Ueda is cumulative of Aarts.” *Id.* at 4.¹¹

We find Peloton’s argument persuasive that Aarts and Ueda differ materially, at least in that Aarts does not disclose “play-list information.” *See* Ex. 1002, 533–34. It does not matter whether that limitation is “central” to the challenged claims, because an obviousness determination “requires a suggestion of *all* limitations in a claim.” *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (emphasis added) (citing *In re Gulack*, 703 F.2d 1381, 1385 n.9 (Fed. Cir. 1983); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

We also find that the combinations of references raised during prosecution were, as a whole, substantially different than the combinations asserted in the Petition. For example, the Examiner found that Aarts does not specifically disclose the “guaranteeing a communication bandwidth”

¹¹ NEC also argues that Peloton failed to meet its burden with respect to showing that Bechtolsheim and Cohee were non-cumulative. Prelim. Resp. 8. Although Peloton responded to this (Prelim. Reply 1 n.3), we need not address this issue because we institute trial based on the non-cumulative combination of Ueda and the SIP and SDP Standards.

limitation, and relied on a secondary reference that Peloton does not assert in the Petition. *See* Ex. 1002, 86–87. This limitation is a main focus of NEC’s arguments in its Preliminary Response, and NEC raises issues that were not raised during prosecution. *See* Prelim. Resp. 12–13, 34–38.

Although we presume that the Examiner would have had the SIP and SDP Standards in mind as part of the background knowledge in the art, the Examiner did not consider these standards in combination with Ueda, and because the art combinations were substantially different, there is little overlap between issues addressed during prosecution and Peloton’s arguments in the Petition.

Because we find that the Examiner did not consider the same or substantially the same art or arguments as in the Petition, we need not determine, under the second part of the *Advanced Bionics* framework, whether Peloton has shown that the Examiner erred in a manner material to patentability, and we decline to deny institution under § 325(d).

B. CONCURRENTLY FILED PETITIONS

Concurrently with its Petition in this case, Peloton also filed a petition in IPR2023-01240, which challenges claims 1–9, 14–18, 20, 22, 32, and 34–36 of the ’427 patent. *See Peloton Interactive, Inc. v. NEC Corp.*, IPR2023-01240, Paper 3 (filed July 27, 2023).

NEC argues that we should deny institution under *General Plastic Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15–16 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i), which sets forth a number of factors that may merit denial of institution under § 314(a) when a

party files a “follow-on” petition challenging the same patent as a previous petition. Paper 12, 1–5.

General Plastic applies to the situation where a petitioner filed multiple, staggered petitions “challenging the same patent and same claims.” *See Gen. Plastic*, IPR2016-01357, Paper 19 at 9–10, 16–17; *see also Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, Paper 11 at 9 (PTAB Apr. 2, 2019) (precedential). But here, Peloton initiated this proceeding and IPR2023-01240 on the same day. These circumstances do not implicate the roadmapping concerns that *General Plastic* seeks to alleviate. *See Gen. Plastic*, IPR2016-01357, Paper 19 at 16–17.

Discretionary denial on the basis that a petitioner has filed multiple concurrent petitions challenging the same patent is addressed in the Consolidated Trial Practice Guide (Nov. 2019) (“Trial Practice Guide”), <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf>. The Trial Practice Guide states that, “[b]ased on the Board’s experience, one petition should be sufficient to challenge the claims of a patent in most situations,” because too many petitions “may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns.” *Id.* at 59. But “there may be circumstances in which more than petition may be necessary.” *Id.*

Peloton argues that this is one of those circumstances. Paper 2, 1–6. According to Peloton, two petitions are needed to address the volume of asserted claims, which are long and complex, and have material differences. *Id.* at 1–4. In particular, Peloton argues that it would require “almost 41% of the word count limit” allowed for a petition simply to list the claims verbatim without commentary. *Id.* at 4. Peloton contends that dividing the

arguments between two petitions in this way would not be burdensome on the Board given the overlapping prior art grounds, which assert identical references and similar arguments. *Id.* at 5–6.

NEC disagrees, arguing that the claims challenged in this proceeding are not challenged in the related district court case, and that the two petitions are remarkably similar so Peloton should have been able to compress its arguments into one petition. *See* Paper 12, 3–5.

We agree with NEC that the two petitions are very similar and present similar issues. However, Peloton has the burden of identifying, “with particularity, each claim challenged, the grounds on which the challenge to each claim is based and the evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3). Under the circumstances, where there are many asserted independent claims and the claims themselves are long, we determine that this is one of the situations where good cause has been shown as to why two petitions are necessary for Peloton to properly address each claim limitation in the ’427 patent. Although we appreciate that this Petition challenges claims that are not presently asserted in the related district court case, Peloton contends that NEC “has reserved the right to supplement its initial infringement contentions.” Paper 2, 2.

Concerns about the burden on the Board and on NEC are mitigated by the similarity between the two petitions. And Peloton has indicated that it would not oppose consolidating the two proceedings, “which would streamline briefing, motion practice, and hearings.” Paper 2, 6.

For the above reasons, we decline to exercise our discretion to deny institution on the ground that Peloton has filed two concurrent petitions challenging the same patent.

IV. GROUNDS OF THE PETITION

For the reasons below, we determine that Peloton has demonstrated a reasonable likelihood that it would prevail in showing that at least one of claims 10–13, 19, 21, and 33 of the '427 patent is unpatentable under a ground of the Petition.

A. LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim is obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical “person of ordinary skill in the art,” from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Peloton argues that a person of ordinary skill in the art “would have had a bachelor’s degree, or equivalent, in electrical engineering, computer science, or a related field, and 2–3 years of experience researching, designing, or developing content delivery systems and related hardware, software, and firmware, or equivalent experience.” Pet. 4 (citing Ex. 1008 ¶¶ 36–40). NEC agrees. *See* Prelim. Resp. 4 (citing Ex. 2001 ¶ 22).

Because it is presently uncontested, supported by testimonial evidence, and appears consistent with the types of problems and solutions in

the '427 patent, we adopt the above articulation of the level of ordinary skill for this decision.

B. CLAIM CONSTRUCTION

In an *inter partes* review, we construe a patent claim “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) (2023). This generally includes “construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313, 1321.

Peloton argues that we should specifically construe three terms, which we discuss below.

1. “*equipment specification information*”

First, Peloton contends that we should interpret the term *equipment specification information* to mean “an identifier for identifying the user equipment” because in several figures of the '427 patent, SIP messages include SIP URIs (Uniform Resource Identifiers) associated with the user requesting the content. *See* Pet. 9 (emphasis omitted).

NEC disagrees with Peloton’s proposed construction and argues that “this term should be given its plain and ordinary meaning.” Prelim. Resp. 12. NEC contends that no particular construction is necessary because the term is not relevant to the contested issues in the Petition. *See id.* Based on the preliminary evidence, we agree with NEC that the term has its ordinary

and customary meaning, but we need not construe the term explicitly at this stage. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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))).

2. “*the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection*”

Second, Peloton argues that we should construe the phrase *the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection* “to cover at least the preferred (and only) embodiment described in the ’427 Patent,” which according to Peloton is not described in any substantial detail apart from the sending of associated SIP messages. Pet. 10 (citing Ex. 1001, 7:48–50, 8:64–9:4, 15:35–40, Figs. 5, 13, 15, 18; Ex. 1008 ¶ 64). Peloton argues that a person of ordinary skill in the art would have understood the bandwidth guarantee to be “a standard process performed by SIP servers using SIP messages.” *Id.* (citing Ex. 1008 ¶ 64).

NEC argues that the recited bandwidth guarantee process is distinct from the associated SIP messages described in the ’427 patent. Prelim. Resp. 13–14 (citing Ex. 1001, 15:49–56; Ex. 2001 ¶ 44). Rather, NEC argues that in the ’427 patent disclosure, the recited bandwidth guarantee process takes place in the transport functions (TF) part of connection control system 3, which works independently from messages that would be part of the SIP

Standard. *See id.* at 14–15 (citing Ex. 1001, 15:29–40; Ex. 1004, 1, 9). NEC also argues that the bandwidth guarantee process must at least include a “bandwidth reservation process” to reserve bandwidth needed to transmit the content. *Id.* at 13, 15 (citing Ex. 1001, 13:59–64; Ex. 2001 ¶ 47). Thus, NEC argues that the term should be construed to mean “a process as part of the connection process, for reserving or otherwise mandating that a bandwidth is available for transmission,” which NEC contends is the term’s ordinary and customary meaning. *Id.* at 15 (citing Ex. 2001 ¶ 47).

First, the parties’ experts seem to agree that, whatever the bandwidth guarantee process is, in the ’427 patent it takes place in bandwidth guarantee part 81 (a component of TF part 80) based on information received from call connection controller 31 (a component of core IMS part 30). *See* Ex. 1008 ¶¶ 51, 64; Ex. 2001 ¶ 44. We agree based on the preliminary evidence, although it is not clear to us at this stage how this description relates to Figure 5 of the ’427 patent, which includes box B502 labeled “execute bandwidth gu[a]rantee process” associated with core IMS part 30. According to the textual part of the disclosure, step B502 is a “transmission preparation completion notification to the user equipment 2” that takes place “[u]pon completing the bandwidth guarantee process.” Ex. 1001, 15:41–43, Fig. 5.

Second, the preliminary evidence does not appear to support NEC’s argument that a “bandwidth reservation process” is part of executing the recited bandwidth guarantee process.¹² The ’427 patent discloses that “the

¹² We note that the ’427 patent describes “a process to reserve communication bandwidth of a communication channel between the content transmitter and the content receiver” as part of the background knowledge in the art at the time of the claimed invention. Ex. 1001, 1:20–23.

core IMS part 30 executes a bandwidth reservation process *as preparation for* guaranteeing a communication bandwidth.” Ex. 1001, 13:60–62 (emphasis added). This suggests that the bandwidth reservation is completed in IMS part 30 *before* the bandwidth guarantee process, which takes place in TF part 80, a different part of the system. Figure 5 supports this interpretation because it depicts “execute bandwidth reservation process” B501 as taking place well in advance of “execute bandwidth gu[a]rantee process” B502, with several intervening steps.

Overall, we agree with Peloton that the ’427 patent does not appear to provide substantial detail about what it means for a connection control server to execute a process for guaranteeing a communication bandwidth. At this stage, given the lack of explanation in the ’427 patent, we find it reasonable that a person of ordinary skill in the art would have understood the recited process to involve well-known steps that did not need further elaboration.

Neither party argues that the term departs from its ordinary and customary meaning, and we do not need to construe the term explicitly for this decision. However, we invite the parties to elaborate at trial on their positions as to the meaning of this term.

3. “*at a same time . . . transmitting the play-list information . . . to the user equipment which has transmitted the content delivery request*”

Peloton argues that the phrase *at a same time . . . transmit[ting] the play-list information . . . to the user equipment which has transmitted the content delivery request* should “be construed to cover the preferred (and only) embodiment described in the ’427 Patent,” which involves transmitting the playlist “as part of a standard OK message to a standard SIP

server.” Pet. 11–13 (citing Ex. 1001, 7:24–35, 15:21–25, 15:41–48; Ex. 1002, 72–73; Ex. 1008 ¶¶ 67–68). As to the timing, Peloton appears to interpret the phrase (including the omitted language reflected by the ellipsis) as requiring the play-list to be transmitted at the same time the bandwidth-guarantee process is executed. *See* Pet. 11.

NEC contends that Peloton misconstrues the timing aspect of this term, which only requires the play-list information to be sent “at a same time” that the connection is established. *See* Prelim. Resp. 15–17 & n.7 (citing Ex. 1001, 19:13–22; Ex. 1002, 72–73; Ex. 2001 ¶¶ 52–53). We agree. Although the claim language itself may be somewhat ambiguous, during prosecution, the applicant clearly argued this interpretation to the Examiner, and a person of ordinary skill in the art would have considered this argument in interpreting the claims. Ex. 1002, 72–73.¹³

Apart from this timing issue, we do not specifically need to construe this term for our decision to institute trial.

C. OBVIOUSNESS OF CLAIM 10 BASED ON UEDA, THE SIP STANDARD, AND THE SDP STANDARD

In its first ground, Peloton argues that claim 10 is unpatentable under § 103(a) as obvious over Ueda in view of the SIP Standard and the SDP Standard. Pet. 3, 22–69.

¹³ Peloton’s proposed construction appears to be narrower than NEC’s proposed construction because the bandwidth guarantee process takes place *as part of* the larger process for establishing the connection. Thus, Peloton’s arguments under limitation 1g, below, also establish that the play-list information is sent at the same time the connection is established. *See infra* Section IV.C.11.

A claim is unpatentable under § 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). When a ground in a petition is based on a combination of references, we consider “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

We base our obviousness inquiry on factual considerations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

Considering these factors,¹⁴ we determine that Peloton has shown a reasonable likelihood that claim 10 is unpatentable as obvious over Ueda in view of the SIP and SDP Standards, for the reasons explained below.

1. Overview of Ueda

Ueda describes “[a] content providing device serving as a server for executing content providing processing as to a client,” where “content which interests a user or commercial content can be selectively provided to the

¹⁴ Neither party argues at this stage that there are objective indicia of obviousness or non-obviousness, so this factor is not part of our analysis. *See* Pet. 83 (stating that Peloton “is unaware of any secondary considerations of non-obviousness); *see generally* Prelim. Resp.

user.” Ex. 1003, code (57). The main embodiment is in the context of a disc player (e.g., Blu-ray Disc player) in which the user is provided with fixed content defined by a playlist. *See id.* ¶¶ 5–7. Ueda addresses embodiments in which the fixed content on the disc “such as a commercial or the like is preferably changed to the latest commercial or latest preview information,” or where, “even with a main content such as a movie content or the like, in a case wherein an update version . . . has been created after the release of a disc, . . . the update version thereof is preferably provided to a user.” *Id.* ¶ 11.

Figure 6, reproduced below, reflects Ueda’s overall system.

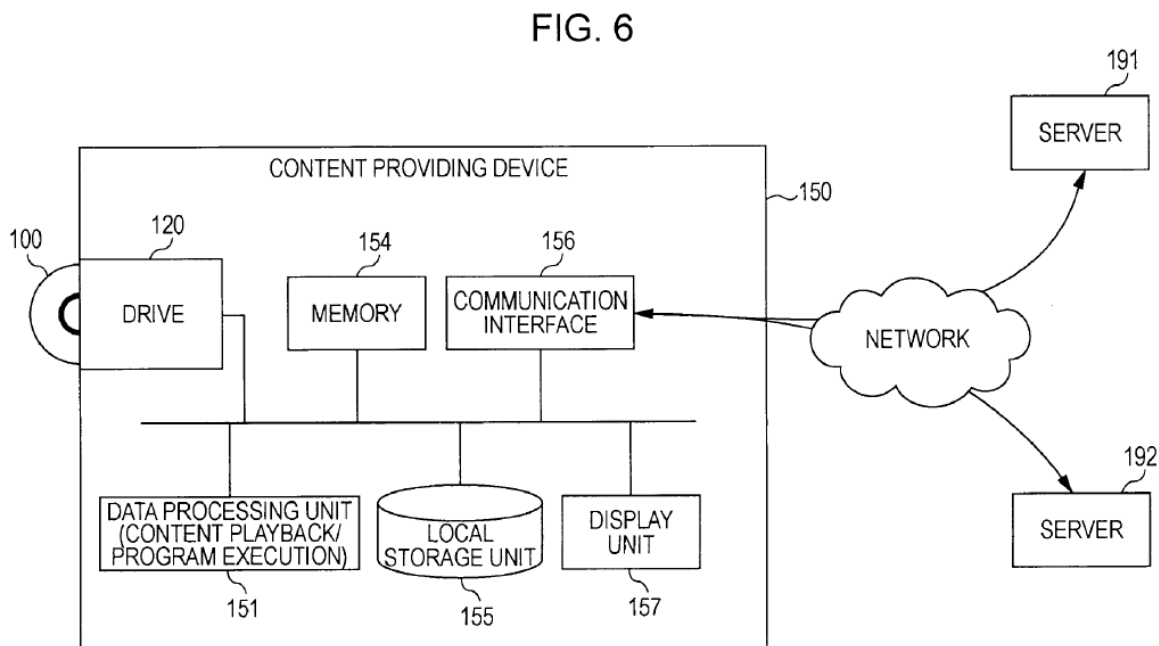


Figure 6 depicts content-providing device 150 which includes disc 100 and disk drive 120, display unit 157, and communication interface 156 for communicating through a network with servers 191 and 192. *See Ex. 1003* ¶¶ 118–120. “The content providing device 150 obtains a sub content which is available along with playback of a content stored in the disk 100, for example, such as . . . commercial content . . . through servers 191 and 192.”

Id. ¶ 119. According to Ueda, “content to be downloaded from the server is not restricted to a commercial, and for example, a main content such as an AV stream content, . . . playlist,” and control information “is downloaded in some cases.” *Id.* ¶ 239.

2. *Overview of the SIP Standard*

The SIP Standard is “an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants,” including “multimedia distribution.” Ex. 1004, 1. The standard “makes use of elements called proxy servers to help route requests to the user’s current location, authenticate and authorize users for services, . . . and provide features to users.” *Id.* It is designed to “run[] on top of several different transport protocols.” *Id.* Such transport protocols may include “Real-time Transport Protocol (RTP) . . . for transporting real-time data and providing QoS [quality of service] feedback, the Real-Time streaming protocol (RTSP) . . . for controlling delivery of streaming media, . . . and the Session Description Protocol (SDP) . . . for describing multimedia sessions.” *Id.* at 9–10.

Some of the basic functions of the SIP Standard are “location of an end point, signal of a desire to communicate, negotiation of session parameters to establish the session, and teardown of the session once established.” Ex. 1004, 11. Figure 1, reproduced below, depicts the process of establishing and tearing down a session (in this case a telephone call) between “Alice’s softphone” on a computer and “Bob’s SIP Phone” via two proxy servers, one in Atlanta where Alice is located, and the other in Biloxi where Bob is located:

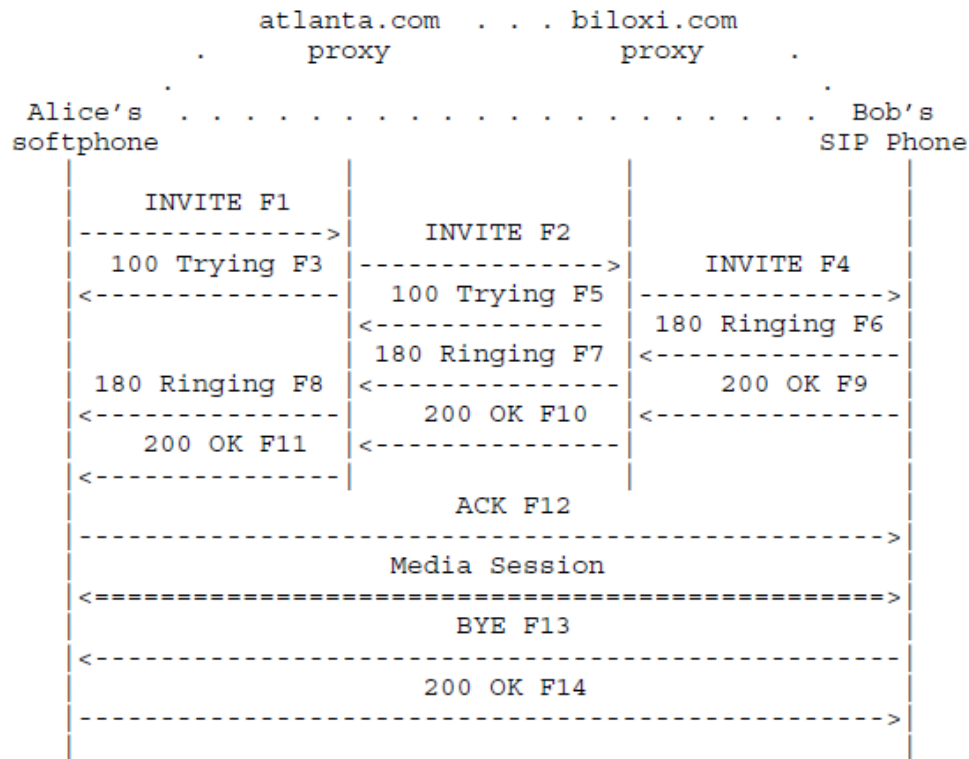


Figure 1: SIP session setup example with SIP trapezoid

Alice and Bob refer to each other using their respective SIP URI (Uniform Resource Identifier) identities, such as “sip:alice@atlanta.com” and “sip:bob@biloxi.com,” which are similar to email addresses. Ex. 1004, 11–12. As depicted above in Figure 1, “the transaction begins with Alice’s softphone sending an INVITE request addressed to Bob’s SIP URI.” *Id.* This INVITE request “specifies the action that the requestor (Alice) wants the server (Bob) to take,” and “contains a number of header fields” including “a unique identifier for the call, the destination address, Alice’s address, and information about the type of session that Alice wishes to establish with Bob.” *Id.*

“Since the softphone does not know the location of Bob or the SIP server in the biloxi.com domain, the softphone sends the INVITE to the SIP server that serves Alice’s domain, atlanta.com.” Ex. 1004, 14. The

atlanta.com SIP server forwards the request to the biloxi.com proxy server, which in turn forwards it to Bob's SIP phone, who can choose to answer. *Id.* Meanwhile, "100 Trying" and "180 Ringing" messages are returned to indicate, respectively, that the proxy servers are trying to connect or that Bob's phone is ringing. *Id.* at 14–15. When Bob answers the call, a "200 OK" message is returned, through the proxy servers, and after a direct acknowledgement ("ACK") that bypasses the proxy servers, "Alice and Bob's media session has now begun, and they send media packets using the format to which they agreed in the exchange of SDP." *Id.* at 14–16. "At the end of the call, Bob disconnects (hangs up) first and generates a BYE message. This BYE is routed directly to Alice's softphone, again bypassing the proxies. Alice confirms receipt of the BYE with a 200 (OK) response, which terminates the session and the BYE transaction." *Id.* at 17.

According to the SIP Standard, if a proxy server receives a "6xx" response, the "proxy SHOULD cancel all client pending transactions." Ex. 1004, 109. One such "6xx" response is "606 Not Acceptable," which means that "[t]he user's agent was contacted successfully but some aspects of the session description such as the requested media, bandwidth, or addressing style were not acceptable." *Id.* at 192. The response can contain "a Warning header field describing why the session described cannot be supported." *Id.* For example, the Warning field can be "370 Insufficient bandwidth," meaning that "[t]he bandwidth specified in the session description or defined by the media exceeds that known to be available." *Id.* at 182.

The SIP Standard, itself, does not describe "[t]he details of the session, such as the type of media, codec, or sampling rate," but "the body of

a SIP message contains a description of the session, encoded in some other protocol format” such as “Session description Protocol (SDP),” and “is carried by the SIP message in a way that is analogous to a document attachment being carried by an email message.” Ex. 1004, 13–14; *see also* Ex. 1005, 4.

3. *Overview of the SDP Standard*

The SDP Standard “describ[es] multimedia sessions for the purposes of session announcement, session invitation, and other forms of multimedia session initiation.” Ex. 1005, 1. SDP syntax can, for example, describe “an appropriate set of parameters for media delivery” between “[a]n RTSP client and server.” *Id.* at 4. An SDP description of a session can “denote[] the proposed bandwidth to be used by the session or media,” which may be a “proposed upper limit to the bandwidth used” by multiple RTP sessions or the “session bandwidth” as defined by the RTP standard. *Id.* at 16. An SDP session description may also include specific information about the media stream such as names, titles, addresses, or attributes. *See id.* at 9. It appears to have been understood at the time of the claimed invention that an SDP description could also convey the order in which multiple streams are presented within a session. *See* Ex. 1011, 3.

4. *General Motivation to Combine Ueda and the SIP Standard*

Peloton argues that a person of ordinary skill in the art “would have been motivated to combine SIP Standard with Ueda in order to provide intermediating resources for media sessions between agents,” which would “assist content providing device 150 with locating server 191 on the Internet,

signaling its desire to communicate with server 191, and characterizing the communication session.” Pet. 22–23 (citing Ex. 1004, 1, 8–9, 11; Ex. 1008 ¶ 104). According to Peloton, the SIP Standard provides “well-known techniques . . . to improve the operation of Ueda and yield a predictable result of establishing a media session between agents.” Pet. 23 (citing Ex. 1008 ¶ 105; Ex. 1010, 3).

Alternatively, Peloton argues that it would have been obvious “to substitute a known element in the form of the authentication processing unit from Ueda’s server 191 with another known element in the form of the proxies of SIP Standard.” Pet. 23 (Ex. 1004, 1, 10, 37; Ex. 1008 ¶ 106).

In response, NEC argues that Peloton’s “proposed motivation to combine is conclusory and cursory,” and that “Ueda already provides for the alleged ‘advantages’ and [Peloton] provides no reason why a [person of ordinary skill in the art] would have abandoned these techniques and gone through the effort to replace them with techniques from a different reference.” Prelim. Resp. 20–21 (citing Ex. 2001 ¶ 67; *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016); *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-00582, Paper 34 at 22 (PTAB Aug. 5, 2019)). NEC also argues that the proposed combination would not have been necessary because “SIP’s proxy servers are intended for scenarios in which the user agents are not at a fixed, known address,” whereas in Ueda, content providing device 150 already knows the location of server 191. Prelim. Resp. 21–24 (citing Ex. 1003 ¶¶ 126–132, 228, 230, Fig. 15; Ex. 2001 ¶¶ 67–70).

We disagree with NEC that, in showing a reason to incorporate the SIP Standard’s teachings about proxy servers, Peloton must necessarily show

that Ueda's system was deficient or inferior. A patent challenger "does not need to show that there was a known problem with the prior art system in order to articulate the required rational underpinning for the proposed combination." *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1002–03 (Fed. Cir. 2016). Also, "when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). At this stage, the evidence suggests that it was within the ordinary skill in the art to modify Ueda's system by replacing direct communication between content providing device 150 and server 191 with an indirect connection in the form of proxy servers using well-known, predictable techniques as described in the SIP Standard.

Next, NEC argues that "[t]here is an inherent incompatibility with Ueda and the SIP Standard with respect to" the use of a SIP message in Ueda's system to signal content providing device 150's desire to communicate with server 191. Prelim. Resp. 24–25 (citing Ex. 1003 ¶¶ 121–141; Ex. 2001 ¶ 69). According to NEC, in the SIP standard the user "will *directly* specify the media stream of interest," whereas in Ueda, the server sends content-management applications to the requester and these applications, when executed, allow the user to select content for download. *See id.* at 25 (citing Ex. 1003 ¶¶ 136, 141, 147–149, 172; Ex. 2001 ¶ 69).

We find nothing in the SIP Standard, or in the preliminary record as a whole, suggesting that the use of proxy servers or SIP messages requires a user to specify a media stream of interest directly, or that it is unfeasible for

the content-selection process to involve downloading and executing an application from the server.

Next, NEC argues that “characterizing the communication session” would not have been a motivation to modify Ueda because Ueda already accomplishes this without using proxy servers or the SIP Standard: content providing device 150 transmits a pre-selected identifier (stored on the disc) to server 191, which uses the identifier to determine whether to send new commercial content. Prelim. Resp. 25–26 (citing Ex. 1003 ¶¶ 221–230, Fig. 15). According to NEC, using the SIP Standard for this process introduces a redundancy that “cautions against combining the references as [Peloton] has proposed.” *Id.* at 26–27 (citing Ex. 2001 ¶ 71; *South-Tek Sys., LLC v. Engineered Corrosion Sols., LLC*, 748 F. App’x 1003, 1007 (Fed. Cir. 2018)).

At this stage, the evidence does not suggest there would be any redundancy in using proxy servers or the SIP Standard as part of “characterizing the communication session.” The SIP Standard describes itself as “an agile, general-purpose tool for creating, modifying, and terminating sessions that works . . . without dependency on the type of session that is being established.” Ex. 1004, 9. Thus, it appears that the SIP Standard is generalizable enough to be the framework by which all of Ueda’s messages are transmitted, without introducing redundancy.

Next, NEC argues that a person of ordinary skill in the art would not have turned to the SIP Standard to authenticate or authorize users because “Ueda either 1) already has a security mechanism in place or 2) operates without any need for further verification/authentication.” Prelim. Resp. 27–

28 (citing Ex. 1003 ¶¶ 150, 340, 344–346, 354, 360, 365, Fig. 25; Ex. 2001 ¶¶ 72–75).

To the extent that Ueda does not disclose authorization or authentication, the evidence suggests that this functionality would have been understood as a useful addition to Ueda’s design. Indeed, as NEC notes, Ueda teaches authentication in at least one of its embodiments. Prelim. Resp. 27–28 (citing Ex. 1003, Fig. 25). Ueda also teaches that “various procedures” (including, presumably, authentication as suggested in the SIP Standard) can be used for “registration processing, . . . authentication processing, or the like.” Ex. 1003 ¶ 340.

Finally, NEC argues that Peloton has failed to explain, in a non-conclusory way, why a person of ordinary skill in the art modifying Ueda with the teachings of the SIP Standard would reasonably have expected the combination to succeed in achieving the claimed invention. Prelim. Resp. 28–29 (citing *Johns Manville Corp. v. Knauf Insulation, Inc.*, IPR2018-00827, Paper 9 at 13 (PTAB Oct. 16, 2018) (informative); *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016)).

We deem Peloton’s showing of a reasonable expectation of success to be sufficient, at this stage, given the well-known and predictable nature of the SIP Standard, the degree of predictability within the relevant art, and the level of ordinary skill to which the parties have agreed. *See supra* Section IV.A.

5. *General Motivation to Combine Ueda, the SIP Standard, and the SDP Standard*

Peloton argues that a person of ordinary skill in the art “would have been motivated to combine the SDP Standard with Ueda and the SIP Standard to convey media details, transport addresses, and other metadata to participants for initiating multimedia sessions,” as the SIP and SDP Standards themselves teach. Pet. 24 (citing Ex. 1004, 1, 10; Ex. 1005, 1, 4, 5, 13–15; Ex. 1008 ¶¶ 109–110).

In response, NEC argues that even if Peloton has shown a reason to incorporate the SDP Standard into SIP messages, Peloton has not explained, in a non-conclusory way, why a person of ordinary skill in the art “would choose to modify Ueda with SDP” because Ueda already contemplates providing the information that SDP would provide. Prelim. Resp. 29–31 (citing Ex. 1003 ¶ 16; Ex. 2001 ¶ 78). NEC points to disclosures in Ueda that allegedly convey media details, transport addresses, and other metadata without using the SDP Standard. *Id.* at 31–32 (citing Ex. 1003, Fig. 30; Ex. 2001 ¶ 81; *South-Tek Sys.*, 748 F. App’x at 1007).

As we discuss above in the context of the combination of Ueda with the SIP Standard, the preliminary evidence suggests that a person of ordinary skill in the art would have been able to incorporate Ueda’s media details, transport addresses, and other metadata into SIP-encapsulated SDP session descriptions without redundancy. The preliminary evidence does not suggest that this information would have been conveyed *twice* between content providing device 150 and server 191, just once in the form of SDP-containing SIP messages.

NEC also argues that Peloton has not, in a non-conclusory way, explained “whether and how SIP and SDP may be integrated into Ueda,” or even argued that there would have been a reasonable expectation of success in combining Ueda and the SIP Standard with the SDP Standard. Prelim. Resp. 33–34 (citing Ex. 1003, Figs. 6, 7, 17–19, 21, 24, 26, 29, 30; *Intelligent Bio-Sys*, 821 F.3d at 1367–68; *Johns Manville*, IPR2018-00827, Paper 9 at 13–14; *Trutek Corp v. Regents of the Univ. of Mich.*, IPR2022-00674, Paper 10 at 25 (PTAB Sept. 28, 2022)).

As we explain above, the preliminary evidence supports Peloton’s argument that a person of ordinary skill in the art would have known how to combine Ueda with the teachings of the SIP Standard. *See supra* Section IV.C.4. And Peloton has shown that the SIP and SDP Standards explicitly teach their mutual interoperability. *See* Pet. 17–18 (citing Ex. 1004, 1, 10; Ex. 1005, 1, 4–5, 8–9, 16); *see also* Ex. 1004, 13–14 (explaining that a SDP description can be included in the body of a SIP message).

For the above reasons, Peloton has shown, with sufficient particularity at this preliminary stage, that there would have been a general motivation to combine Ueda with the SIP and SDP Standards, with a reasonable expectation of success.

6. Preamble

The preamble of claim 10 recites “[a] content delivery system comprising” certain steps. Ex. 1001, 39:12.

Peloton argues that Ueda discloses a content delivery system. Pet. 26 (citing Ex. 1003 ¶¶ 37, 117–119, Fig. 6; Ex. 1008 ¶¶ 115–117). NEC does not contest this. *See generally* Prelim. Resp. We agree that Ueda discloses a content delivery system, so we need not decide whether the preamble is

limiting. *See, e.g.*, Ex. 1003, 23, claim 6 (“A content providing system . . .”).

7. *Limitation 10a*

Limitation 10a recites “an application server system.” Ex. 1001, 39:12–13. Peloton argues that Ueda’s server 191 is part of an application server system as recited. Pet. 26–27 (citing Ex. 1003 ¶¶ 122, 151–155, Figs. 6, 7, 17, 19, 24, 30–33; Ex. 1008 ¶¶ 118–121).

NEC does not contest this. *See generally* Prelim. Resp. At this stage, we agree with Peloton that Ueda discloses an “application server system.” *See, e.g.*, Ex. 1003, Fig. 7.

8. *Limitation 10b*

Limitation 10b recites “one or more connection control servers, the one or more connection control servers comprising a sixth receiver for receiving equipment specification information transmitted by user equipment and establishing connection between the application server system and the user equipment based on the received equipment specification information.” Ex. 1001, 39:13–19.

Peloton argues that Ueda teaches limitation 1b in view of the SIP Standard. Pet. 27–34. In particular, Peloton argues that “equipment specification information” in Ueda corresponds at least to a user ID and content providing device ID, which content providing device 150 (the alleged “user equipment”) transmits to server 191 (the alleged “application server system”). Pet. 27–29 (citing Ex. 1003 ¶¶ 147–148, 169, 243, 258, 275, 343–345, 374, 380, 388–389, 435, 441, Figs. 7, 24, 26–28, 30). Peloton also argues that Ueda discloses that the connection between content

providing device 150 and server 191 is *based on* the alleged equipment specification information because “[t]his connection is established ‘as a condition that the validity of the disc or the validity of the content providing device has been confirmed.’” Pet. 29–31 (quoting Ex. 1003 ¶ 345¹⁵) (citing Ex. 1003 ¶¶ 118–119, 147–148, 169, 243, 258, 275, 343–344, 374, 380, 388, 389, 435, 441, Figs. 6, 24, 26–28, 30).

Apart from NEC’s disagreement with Peloton’s proposed construction for the term *equipment specification information*, which we address above, NEC does not specifically contest the above arguments at this stage. *See supra* Section IV.B.1; *see generally* Prelim. Resp. Without adopting Peloton’s proposed construction, we find Peloton’s argument sufficiently persuasive. Taken at face value, the term *equipment specification information* would appear to encompass identifiers or other information that specifies which equipment, or which user’s equipment, is requesting a connection with an application server system. And a person of ordinary skill in the art would have understood that server 191 establishes this connection based on authentication conditions that take into consideration the user ID or equipment ID. *See* Ex. 1003 ¶¶ 343–345.

Limitation 10b also requires one or more “connection control servers” to make the connection between the application server system and the user equipment. Ex. 1001, 39:17–19. Peloton relies on the teachings of the SIP Standard for this aspect of the limitation. *See* Pet. 31–34. According to Peloton, the SIP Standard teaches the use of proxy servers between two endpoint devices (such as user equipment and a server). Pet. 31–33 (citing

¹⁵ Peloton mistakenly cites paragraph 344 as the quotation source.

Ex. 1004, 1, 9, 11–12, 15–16, 77–86, Fig. 1). Peloton argues that the SIP proxy servers establish the connection based on logical addresses or identities transmitted from the user equipment. Pet. 33 (citing Ex. 1001, Fig. 9; Ex. 1004, 11–12, 35, 37). Peloton contends that it would have been obvious to replace Ueda’s direct connection with a proxy-mediated connection as the SIP Standard teaches, for the reasons addressed above. *Id.* (citing Ex. 1008 ¶ 142); *See supra* Section IV.C.4. According to Peloton, in this combination the user ID or equipment ID from content providing device 150 would serve the role of the logical identifiers used in the SIP Standard for establishing a connection. Pet. 33–34 (citing Ex. 1008 ¶ 142).

We address NEC’s general arguments about the motivation to combine above, and we determine that Peloton has sufficiently established a reason to combine Ueda with the teachings of the SIP Standard. *See supra* Section IV.C.4. Apart from this, NEC does not specifically address limitation 10b at this stage. *See generally* Prelim. Resp. For the reasons we address above, the preliminary evidence suggests that introducing proxy servers in the context of limitation 10b would have been straightforward, predictable, and within the level of ordinary skill in the art to which the parties have agreed.

9. *Limitations 10c–10h*

Limitation 10c recites “the application server system comprising: a fourth transmitter for transmitting content data representing content to the user equipment with which connection is established by the sixth receiver.” Ex. 1001, 39:20–23. Peloton argues that Ueda’s content providing device 150 receives content data, and a person of ordinary skill in the art would

have understood that this necessarily requires a transmitter for transmitting the content data. Pet. 34 (citing Ex. 1008 ¶ 146).

Limitation 10d recites “a controller for controlling a service provided by the fourth transmitter.” Ex. 1001, 39:24–25. Peloton argues that Ueda’s server 191 controls the services of delivering content and a playlist to content providing device 150, as well as generating allowed processing lists and performing authentication. Pet. 35 (citing Ex. 1003 ¶¶ 122, 148, 151–155, 344–345, Figs. 7, 24; Ex. 1008 ¶¶ 149–150).

Limitation 10e recites “a second memory for storing profile information of a user of the user equipment.” Ex. 1001, 39:26–27. Peloton argues that Ueda discloses that personal information and user management information are stored in a database in server 191. Pet. 35 (citing Ex. 1003 ¶¶ 432, 441, 369–370, 383–388, 438, Fig. 30; Ex. 1008 ¶¶ 151–154).

Limitation 10f recites “the fourth transmitter comprising a memory for storing sub content data representing sub content and main content data representing main content.” Ex. 1001, 39:28–30. Peloton argues that Ueda discloses this limitation, and points to memory within server 191 that stores sub content (e.g., commercials) and main content (e.g., movies). Pet. 36–39 (citing Ex. 1003 ¶¶ 119, 146, 150, 241, 245, 248, 259, 271–273, 276–277, 413, 438–439, 443, Figs. 17, 19, 24, 30; Ex. 1008 ¶¶ 158, 162). Peloton also argues that the embodiments describing the storage of main and commercial content are part of the same system, or alternatively that a person of ordinary skill in the art would have stored both main and commercial content in the same server. Pet. 39–40. According to Dr. Reader, this would allow server 191 to “control which processing the content providing device 150 is allowed to perform based on an identification of the user or the user

equipment,” or to “authenticate the validity of the content providing device 150 based on such an identification.” Ex. 1008 ¶ 167.

Limitation 10g recites “the controller comprising: a first receiver for receiving a content delivery request containing main content identification information for identifying the main content and transmitted by the user equipment, via the sixth receiver.” Ex. 1001, 39:31–35. According to Peloton, Ueda teaches that content providing device 150 sends a download request (content delivery request), and that server 191 would necessarily have a receiver to receive this request. Pet. 41 (citing Ex. 1003 ¶¶ 118, 244, 259, 276, 279, 299, 344, 370, 372, 385–388, 438, 485, 509, 529, Fig. 6; Ex. 1008 ¶ 173). Peloton also argues that Ueda’s content delivery request necessarily includes information that identifies main content, “[o]therwise, server 191 would not know which main content to transmit.” Pet. 39–40 (citing Ex. 1003 ¶¶ 276–279, 370, Fig. 19; Ex. 1008 ¶ 175). Further, Peloton argues that for the same reasons as discussed above in limitation 10b, it would have been obvious in view of the SIP Standard to receive the request via the six receiver of the one or more connection control servers. Pet. 43 (citing Ex. 1008 ¶¶ 177–181); *see supra* Section IV.C.8.

Limitation 10h recites “an [sic] processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content and preliminarily stored by the user profile server functions part, the controller or the one or more connection control servers.” Ex. 1001, 39:36–41. Peloton argues that the recited processor corresponds to the data processing unit in Ueda’s server 191, which “analyzes the user’s preference on the client side to provide a content adapted to the user’s preferences. Thus, *content which interests a*

user or commercial content can be selectively provided to the user.” Pet. 44 (quoting Ex. 1003, code (57)) (citing Ex. 1003 ¶¶ 17, 19–23, 28, 119, 441–443). Peloton also argues that user-preference and personal information stored in server 191 is “used to select commercial content relate[d] to an attribute such as a user interest (e.g., cars), a travel destination (e.g., South Korea), or a product type (e.g., South Korean products).” Pet. 45 (citing Ex. 1003 ¶¶ 432, 438–440). And according to Peloton, a person of ordinary skill in the art would have understood that Ueda’s sub content data and attribution information are preliminary stored by server 191. Pet. 46–47 (citing Ex. 1003 ¶¶ 17, 19–23, 28, 244, 259, 276–279, 299, 344, 370, 372, 385–388, 432, 438, 441–443, 485, 509, 529, code (57), Fig. 30).

Other than its arguments directed to the general combination of Ueda and the SIP Standard, NEC does not specifically challenge Peloton’s arguments regarding limitations 10c–10h. *See generally* Prelim. Resp; *supra* Section IV.C.4. We find the arguments sufficiently persuasive at this stage.

10. Limitation 10i

Limitation 10i recites “a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the sixth receiver to the user equipment which has transmitted the content delivery request.” *Id.* at 39:42–46.

Peloton argues that Ueda’s server 191 transmits a playlist specifying sub content to content providing device 150, as recited, which would necessarily require a transmitter. Pet. 47–49 (citing Ex. 1003 ¶¶ 241, 244–248, 253–254, 281, 399–405, 438, Figs. 6, 17, 19, 20, 24, 30; Ex. 1008 ¶ 200). According to Peloton, a person of ordinary skill in the art would have had reason to carry out this transmission through proxy servers as taught in

the SIP Standard, for reasons discussed above. Pet. 49–50 (citing Ex. 1004, 10, 12–15, 170; Ex. 1008 ¶¶ 204, 206); *see supra* Section IV.C.4.

As discussed above, we determine that Peloton has sufficiently shown that there would have been a reason to incorporate proxy servers, according to the SIP Standard, as intermediate connections between content providing device 150 and server 191. *See supra* Section IV.C.4. Thus, the evidence suggests at this stage that using proxy servers to transmit selected sub content specification information, as recited in limitation 1f, would have been a straightforward and predictable modification of Ueda’s disclosure. Apart from this issue, NEC does not specifically address limitation 1f at this stage. *See generally* Prelim. Resp.

11. Limitation 10j

Limitation 10j recites

wherein the first transmitter is configured to, at a same time that the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection, transmit the play-list information via the sixth receiver to the user equipment which has transmitted the content delivery request.

Ex. 1001, 39:46–53.

Peloton argues that the SIP Standard teaches executing a process for guaranteeing the necessary communication bandwidth for transmitting the requested content, as indicated by the transmission of SIP messages reflecting either (1) there is insufficient bandwidth for the requested content transmission (a “606 Not Acceptable” response with a header “Warning 370,” which means there is insufficient bandwidth or (2) a “200 OK” message if the connection is acceptable. Pet. 51–53 (citing Ex. 1001, Figs. 5,

12, 13, 15, 18; Ex. 1004, 12 (Fig. 1), 15, 16, 29, 77–78, 109, 114, 182, 188–190, 192, 260). According to Dr. Reader, the bandwidth guarantee process would include “checking that the bandwidth specified in the session description or defined by the media does not exceed the available bandwidth,” as “part of a process for establishing the connection, such that a session initiation request is canceled if the proxy servers receive a 606 Not Acceptable Response with the Warning 370 reason code.” Ex. 1008 ¶ 213.

Peloton also argues that the SIP Standard and the SDP Standard teach transmitting Ueda’s playlist at the same time as the above “606 Not Acceptable” or “200 OK” message, either in the body of the same SIP message as an SDP description, or as a proprietary or experimental field in the SIP header. Pet. 53–56 (citing Ex. 1004, 13, 33, 109, 170, 181–182, 192; Ex. 1005, 1, 4–5, 8–10, 12–13, 16, 21–22; Ex. 1008 ¶¶ 219–225; Ex. 1011, 3). According to Peloton, it would have been obvious to do this because “Ueda’s playlist characterizes the media session and prevents resource misuse if a separate connection were established solely to transmit the playlist.” Pet. 56–58 (citing Ex. 1008 ¶¶ 226–228).

NEC responds, first, that Peloton has failed to show that the “606 Not Acceptable” or “200 OK” messages constitute a “process for guaranteeing a communication bandwidth.” Prelim. Resp. 34–35 (citing Ex. 2001 ¶¶ 84–89). According to NEC, the SIP Standard explicitly excludes from its scope any network resource reservation capabilities, and such capabilities would have been handled separately in the context of a transport protocol such as RTP, as is the case in the ’427 patent disclosure. *Id.* at 35 (citing Ex. 1001, 12:13–16; Ex. 1004, 1, 9–10; Ex. 2001 ¶¶ 84–86). Moreover, NEC argues, the SIP Standard “does not provide commands that must be executed by the

receiver,” and thus cannot “guarantee” a bandwidth requirement. *Id.* at 36 (citing Ex. 2001 ¶ 87). It is not enough, according to NEC, that the process control server cancels the connection-establishing process after receiving a 606 Not Acceptable response with Warning 370, because such a cancellation step occurs before a connection is established and thus cannot be part of a “process for *establishing the connection*.” And according to NEC, the SIP messages and warnings are merely flags that do not “mandate a particular action to be taken by the implementer,” so there is no guarantee that (1) the bandwidth guarantee establishes a connection, or (2) the flags won’t simply be ignored. *Id.* at 36–38 (citing Ex. 2001 ¶¶ 89–91).

We do not understand Peloton to be arguing that the SIP messages, themselves, constitute the recited “process for guaranteeing a communication bandwidth.” Rather, as Dr. Reader opines, the guaranteeing process involves “checking that the bandwidth specified in the session description or defined by the media does not exceed the available bandwidth” and then either continuing or aborting the process for establishing the connection. *See* Ex. 1008 ¶ 213; *see also* Pet. 52 (“If a 6xx response, indicating that a request cannot be fulfilled, is received, the proxy server cancels all client pending transactions.” (citing Ex. 1004, 109, 114, 192, 260)). The “606 Not Acceptable” or “200 OK” SIP messages would reflect the *result* of executing that process, and the process of establishing a connection would be aborted if the SIP message indicates that the required bandwidth is unacceptable.

The ’427 patent does not appear to expressly limit what a “process for guaranteeing a communication bandwidth” could be, and we find Peloton’s argument reasonable at this stage that this broad, functional language

encompasses simply checking that the required bandwidth is acceptable, and if not, aborting the connection process. Also, on its face, claim 10 does not appear to require a connection to be established in all cases, so long as for any established connection, the bandwidth is guaranteed. *See* Ex. 1001, 39:48–51.

Based on the preliminary record, Peloton has sufficiently shown, at this stage, that a person of ordinary art would have had reason to modify Ueda by having proxy servers execute a process to check if the required bandwidth is available, and only allow the connection to proceed if the result is “200 OK” rather than “606 Not Acceptable” with a “Warning 370.” The SIP Standard teaches that this cancellation “SHOULD” be the outcome of a “606 Not Acceptable” response, and the evidence suggests that adopting this teaching from the standard would have, in itself, been motivation enough to include such a bandwidth guarantee in Ueda’s modified system. *See, e.g.*, Ex. 1004, 109.

Next, NEC argues that Peloton has not shown that the SIP and SDP Standards teach sending a playlist, as defined in the challenged claims, because Peloton has not persuasively explained which SDP header fields a person of ordinary skill in the art would have used, or why. Prelim. Resp. 38–40 (citing Ex. 1001, 37:21–30, 41:4–15, 42:17–27; Ex. 2001 ¶¶ 94–97). NEC also contends that “‘play-list information’ covers much more than ‘information specifying the media,’” and Peloton’s showing for the combination of Ueda, the SIP Standard, and the SDP Standard is conclusory and based on hindsight. *Id.* at 41–45 (citing Ex. 1001, 37:14–19; Ex. 2001 ¶¶ 83–87; *DSS Tech. Mgmt., Inc. v. Apple, Inc.*, 885 F.3d 1367 (Fed. Cir. 2018); *Johns Manville*, IPR2018-00827, Paper 9 at 20; *Polaris Indus., Inc. v.*

Artic Cat, Inc., 882 F.3d 1056, 1068 (Fed. Cir. 2018); *InTouch Techs., Inc. v. VGO Comms., Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014); *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016); *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016)).

Peloton does not rely solely on the SDP Standard for teaching the sending of a playlist, but also relies on Ueda, which discloses sending a playlist containing both commercial and main content, as we discuss in more detail below in the context of limitation 10k. *See infra* Section IV.C.12. Peloton relies on the SIP Standard and the SDP Standard for teaching that Ueda’s playlist, as with other data describing a session, may be formatted and transmitted as a payload within a standard SIP message, for example using SDP fields. At this stage, we find it sufficiently persuasive that a person of ordinary skill in the art would have recognized SDP as a known way to format “play-list information,” since SDP has specific fields to convey the features of a playlist such as metadata and links to the content. *See* Pet. 53–55.

At this stage, we do not regard Peloton’s arguments to be based on improper hindsight bias. Although Peloton argues that the SDP Standard “can” or “could” be used to format Ueda’s playlist, the evidence suggests that doing so would merely be “[t]he combination of familiar elements according to known methods,” and that kind of combination “is likely to be obvious when it does no more than yield predictable results,” which appears to be the case here. *KSR*, 550 U.S. at 416. As such, the Petition relies on the predictable combination of the prior art according to known methods, not on the ’427 patent itself, for teaching the combination.

Finally, NEC argues that Ueda teaches away from providing “play-list information” at the same time as establishing a connection, because Ueda teaches successfully completing user authentication *before* transmitting the playlist. Prelim. Resp. 45–46 (citing Ex. 1003 ¶¶ 56, 365, Fig. 25; Ex. 2001 ¶ 100). According to NEC, Peloton’s “argument fails to consider, or reconcile, this ordering of Ueda, which would prevent implementation of the proposed combination with the SDP Standard, in which the playlist is transmitted as part of the Session Initiation.” *Id.* at 46.

We do not understand claim 10 to restrict the timing of user authentication. In the ’427 patent disclosure, user authentication occurs before the process of establishing a connection as depicted in Figure 5. *See* Ex. 1001, 12:36–55, Fig. 4 (user authentication occurs when user equipment 2 is powered-up); *id.* at 13:50–58 (SIP message A501, at the beginning of Figure 5, includes “user authentication success information”). But we find nothing in the claim language, itself, that requires any particular timing for authentication. Nor do we understand Peloton’s motivation-to-combine argument to hinge on the timing of authentication. Thus, we do not regard Ueda’s Figure 25 to “criticize, discredit, or otherwise discourage” the claimed invention. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

For the above reasons, we find that Peloton has sufficiently shown, at this stage, that Ueda teaches limitation 10j in view of the SIP Standard and the SDP Standard.

12. Limitations 10k and 10l

Limitation 10k recites

the play-list information being information containing the main content identification information contained in the content

delivery request and the selected sub content specification information, and the play-list information being information containing information indicating a sequence in which the main content identified by the main content identification information and the sub content specified by the selected sub content specification information are output.

Ex. 1001, 39:54–63. Peloton argues that Ueda’s playlist identifies both sub content (e.g., a commercial) and main content (e.g., a movie) and indicates the sequence in which they are played. Pet. 59 (citing Ex. 1003 ¶¶ 7, 9–10, 98, 101, 158–159, 183, 235, 248, 253–254, 273, 281, 356, 399–405, 424, 438, Figs. 20, 30).

Limitation 10l recites

wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and outputting, based on the received main content data and sub content data, viewing content in which sub content represented by the sub content data is inserted in main content represented by the main content data.

Ex. 1001, 39:64–40:3. Peloton argues that Ueda’s communication interface 156 in Figure 6 includes a receiver to receive the main content data and sub content data transmitted from server 191, and that this data is output in the playlist order. Pet. 60–61 (citing Ex. 1003 ¶¶ 7, 9–10, 98, 101, 118–119, 158–159, 163–164, 183, 193–198, 213, 220–221, 235, 239, 244–248, 253–254, 273, 276, 279, 281, 356, 399–405, 413, 438–439, 443, Figs. 6, 17, 19, 20, 30; Ex. 1008 ¶¶ 211–222).

At this stage, NEC does not contest Peloton’s arguments for limitations 10k or 10l. *See generally* Prelim. Resp. We find the arguments sufficiently persuasive at this stage.

13. Conclusion as to Claim 10

For the above reasons, we determine that Peloton has shown, sufficiently persuasively at this stage, that Ueda in combination with the SIP and SDP Standards teaches all the limitations of claim 10, and that a person of ordinary skill in the art would have had reason to combine the features of each reference as Peloton argues in the Petition. We therefore determine that Peloton is reasonably likely to prevail in showing that claim 10 is unpatentable under § 103(a) as obvious over Ueda in view of the SIP Standard and the SDP Standard.

D. OTHER CLAIMS AND GROUNDS

Because Peloton has shown a reasonable likelihood of prevailing with respect to claim 10 on its first ground based on Ueda, the SIP Standard, and the SDP Standard, we will institute on all claims and all grounds raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); *AC Techs. S.A. v. Amazon.com, Inc.*, 912 F.3d 1358, 1364 (Fed. Cir. 2019) (“[I]f the Board institutes an IPR, it must . . . address all grounds of unpatentability raised by the petitioner.”). At this stage, we need not address the other claims or the merits of Peloton’s other grounds.

V. CONCLUSION

For the reasons above, Peloton has shown that there is a reasonable likelihood it would prevail with respect to at least one of the claims challenged in the Petition. Thus, we institute trial on all asserted grounds and all challenged claims. *See* 37 C.F.R. § 42.108(a) (2023).

VI. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 10–13, 19, 21, and 33 of the '427 patent is instituted with respect to all the grounds set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, *inter partes* review of the '427 patent commences on the entry date of this Order, and the Board hereby gives notice of the institution of a trial.

IPR2023-01241
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