

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PELOTON INTERACTIVE, INC.,
Petitioner

v.

NEC CORPORATION,
Patent Owner

IPR Case No. IPR2023-01240
U.S. Patent No. 9,769,427

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,769,427**

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EXHIBIT LIST

Exhibit No.	Description
Ex1001	U.S. Patent No. 9,769,427 to Taniguchi et al. (“the ’427 Patent”)
Ex1002	Prosecution history of the ’427 Patent (U.S. Patent Application No. 13/129,756) ¹
Ex1003	U.S. Patent Application Publication No. 2009/0094321 A1 to Ueda et al. (“Ueda”)
Ex1004	J. Rosenberg et al., <i>SIP: Session Initiation Protocol</i> (RFC 3261, Network Working Group, Internet Engineering Task Force, June 2002) (the “SIP Standard”)
Ex1005	M. Handley et al., <i>SDP: Session Description Protocol</i> (RFC 4566, Network Working Group, Internet Engineering Task Force, July 2006) (the “SDP Standard”)
Ex1006	U.S. Patent Application Publication No. 2009/0100496 A1 to Bechtolsheim et al. (“Bechtolsheim”)
Ex1007	U.S. Patent Application Publication No. 2010/0010884 A1 to Cohee et al. (“Cohee”).
Ex1008	Declaration of Cliff Reader, Ph.D.
Ex1009	Scheduling Order filed on March 20, 2023 in <i>NEC Corp. v. Peloton Interactive, Inc.</i> , No. 1:22-cv-00987-CFC (U.S. District Court, District of Delaware, filed July 28, 2022)
Ex1010	S. Bradner, <i>The Internet Standards Process – Revision 3</i> (RFC 2026, Network Working Group, October 1996) (the “Standards Process”)
Ex1011	O. Levin, <i>The Session Description Protocol (SDP) Label Attribute</i> (RFC 4574, Network Working Group, Internet Engineering Task Force, August 2006)
Ex1012	A. Melnikov et al., <i>Media Types</i> (Internet Assigned Numbers Authority, July 2019) (accessed at https://www.iana.org/assignments/media-types/media-types.xhtml)
Ex1013	P. Saint-Andre, <i>Deprecating the "X-" Prefix and Similar Constructs in Application Protocols</i> (RFC 6648, Internet Engineering Task Force, June 2012)

¹ Foreign references cited during the prosecution of the ’427 Patent have been omitted due to size considerations of the prosecution history.

Exhibit No.	Description
Ex1014	A. Makin et al., <i>Change Process for the Session Initiation Protocol (SIP)</i> (RFC 3427, Network Working Group, December 2002)
Ex1015	U.S. Patent Application Publication No. 2008/0005348 A1 to Kosiba et al.
Ex1016	Curriculum Vitae of Cliff Reader, Ph.D.

I. INTRODUCTION

The '427 Patent is an obvious combination of the prior art. While verbose, the Challenged Claims (defined below) essentially recite a server system that (1) establishes a connection with user equipment based on information about the equipment; (2) receives a request from the user equipment for “main content” stored on the server system; (3) uses attributes to select “sub content” stored on the server system for delivery with the main content; (4) transmits the main content, sub content, and a playlist to the user equipment; and (5) guarantees a communication bandwidth for transmitting content data at the same time that the playlist is transmitted. This functionality has been known since before the earliest possible priority date of the '427 Patent.

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8(a)(1)

As set forth below and pursuant to 37 C.F.R. §42.8(a)(1), Petitioner provides the following mandatory notices as part of this petition.

A. Real Party In Interest Under 37 C.F.R. §42.8(b)(1)

The real party-in-interest for Petitioner is Peloton Interactive, Inc. No other parties directed, controlled, or funded this IPR petition.

B. Related Matters Under 37 C.F.R. §42.8(b)(2)

To Petitioner's best knowledge, the '427 Patent is presently the subject of the following patent infringement lawsuits brought by the assignee, NEC:

- *NEC Corp. v. Peloton Interactive, Inc.*, No. 1:22-cv-00987-CFC (U.S. District Court, District of Delaware, filed July 28, 2022) (hereinafter, the “**Related Litigation**”); and
- *NEC Corp. v. Our Body Electric Inc.*, No. 1:22-cv-00986-CFC (U.S. District Court, District of Delaware, filed July 28, 2022).

To Petitioner’s best knowledge, the ’427 Patent was not previously challenged in an IPR petition.

C. Lead and Back-Up Counsel Under 37 C.F.R. §42.8(b)(3)

Pursuant to 37 C.F.R. §42.8(b)(3), Petitioner provides the following designation of counsel:

Lead Counsel	Backup Counsel
Darren M. Franklin (Reg. No. 51,701) dfranklin@sheppardmullin.com Sheppard, Mullin, Richter & Hampton 333 South Hope Street, 43rd Floor Los Angeles, California 90071-1422 Telephone: (213) 620-1780 Facsimile: (213) 620-1398	Daniel N. Yannuzzi (Reg. No. 36,727) dyannuzzi@sheppardmullin.com Mark W. Catanese (Reg. No. 64,279) mccatanese@sheppardmullin.com Sheppard, Mullin, Richter & Hampton 12275 El Camino Real, Suite 100 San Diego, California 92130-4092 Telephone: (858) 720-8900 Facsimile: (858) 509-3691

An appropriate power of attorney is filed concurrently herewith.

D. Service Information Under 37 C.F.R. §42.8(b)(4)

Service on Petitioner may be made by mail or hand delivery to: Sheppard Mullin Richter & Hampton LLP, 333 South Hope Street, 43rd Floor, Los Angeles, California 90071-1422. The telephone and facsimile numbers for lead and backup counsel are shown above. Petitioner also consents to electronic service by e-mail at dfranklin@sheppardmullin.com, dyannuzzi@sheppardmullin.com, and mcatanese@sheppardmullin.com.

III. PAYMENT OF FEES UNDER 37 C.F.R. §§42.15(a), 42.103

Petitioner has paid the required fees. The Office is authorized to charge any additional fees that might be due to Deposit Account. No. 50-4561.

IV. REQUIREMENTS FOR IPR

A. Standing

Petitioner certifies that the '427 Patent is available for IPR, this petition is timely filed, and Petitioner is not barred or estopped from requesting IPR on the grounds identified herein.

B. Identification of Challenge

Petitioner requests IPR and cancellation of claims 1-9, 14-18, 20, 22, 32 and 34-36 ("Challenged Claims") as follows:

Ground	Basis	Prior-Art References	Claims Challenged
1	§103	Ueda combined with SIP Standard and SDP Standard	1, 4-9, 14, 16, 18, 20, 22, 32 and 34-36

2	§103	Ueda combined with SIP Standard and Bechtolsheim	1, 4-9, 14, 16, 18, 20, 22, 32 and 34-36
3	§103	Ueda combined with SIP Standard , SDP Standard , and Cohee	2, 3, 15 and 17
4	§103	Ueda combined with SIP Standard , Bechtolsheim , and Cohee	2, 3, 15 and 17

V. SUMMARY OF THE '427 PATENT

A. Effective Filing Date

The '427 Patent issued from Application No. 13/129,756, filed on May 17, 2011. The application was a national-stage filing of PCT/JP2009/006140, filed on November 17, 2009, and claimed priority to Japanese Application No. 2008-294270, filed on November 18, 2008. The effective filing date of the '427 Patent is not earlier than November 18, 2008.

B. Person of Ordinary Skill in the Art (“POSITA”)

A POSITA in the field of the '427 Patent at the time of the alleged invention 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.² A person having less education but more relevant practical experience, or more education and less experience, might also meet this standard. Ex1008 ¶¶36-40.

² Reference herein to what a POSITA would have known, understood, or been motivated to do, and the like, refers to the time of the alleged invention.

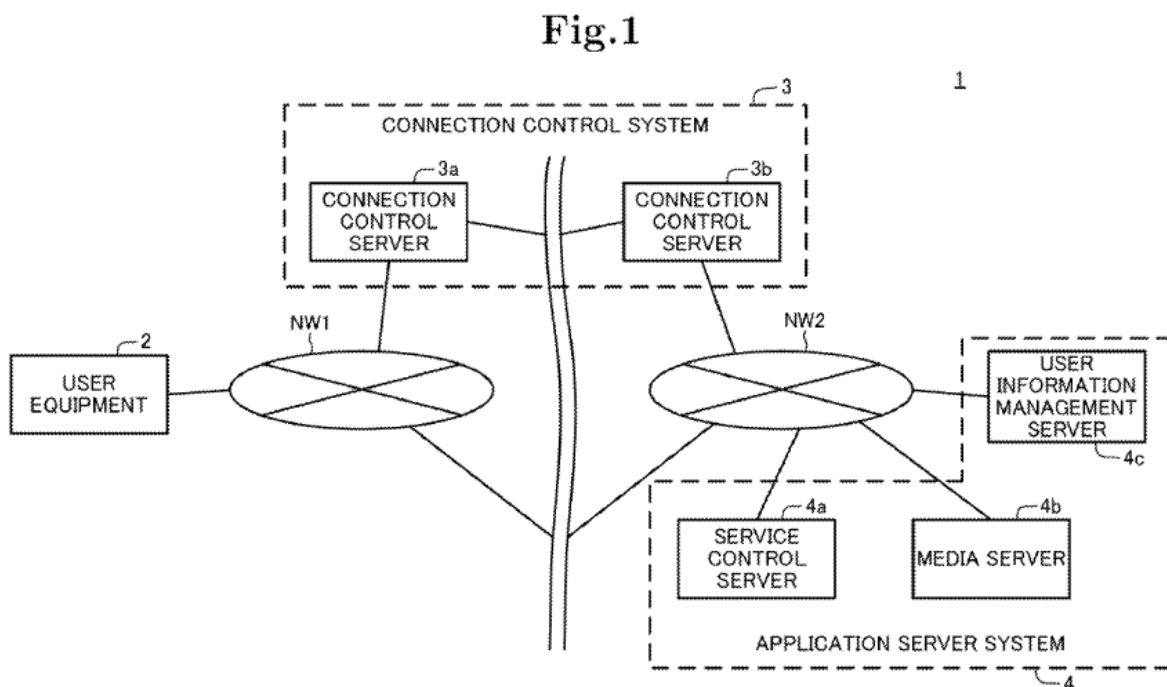
C. Specification

The '427 Patent describes video-on-demand (“VoD”) systems for transmitting video content to user equipment such as a television set-top box. Ex1001, 1:5-7, 4:58-62, 5:11-17. Admitted prior-art systems included a transmitter, a receiver, and a connection controller, such as a Session Initiation Protocol (“SIP”) server. Ex1001, 1:11-13.

In the prior-art systems described in the “Background Art” section of the '427 Patent, the receiver (e.g., a set-top box) transmitted a content delivery request to the connection controller, which executed a process to reserve bandwidth and established a connection between the transmitter (a VoD system) and the receiver. Ex1001, 1:14-20. The system also executed a process to reserve a communication bandwidth between the transmitter and the receiver. Ex1001, 1:20-23. Viewing content was pre-stored in the transmitter and transmitted to the receiver upon establishment of the connection. Ex1001, 1:33-39. Advertising content was static and could not be changed according to the particular end user. Ex1001, 1:40-47.

The object of the alleged invention described in the '427 Patent is to provide content and “advertisement content selected according to the user.” Ex1001, 1:48-52; *see also id.*, 3:37-39. ***This is the only object of the alleged invention stated in the patent.***

Figure 1 (reproduced below) illustrates a content delivery system 1. The system includes a connection control system 3 and an application server system 4. Ex1001, 4:58-60-64, Fig. 1. Connection control system 3 includes SIP servers and is connected to user equipment (“UE”) 2 through a network. Ex1001, 4:63-67, 5:4-6, 5:35-41.



Connection control system 3 establishes, upon receiving a SIP message containing equipment specification information from UE 2, a connection (session) between the application server system 4 and UE 2 based on the received equipment specification information. Ex1001, 5:42-48, 7:51-53, 8:41-63. Application server system 4 receives a content delivery request, transmitted by UE 2 and containing user identification information, equipment address information, and main content

identification information. Ex1001, 9:31-39, 10:14-20. The application server system selects advertisement content data stored in association with advertisement attribute information in a storage 43, with the advertisement attribute information specified by user basic information and content basic information. Ex1001, 9:31-39, 10:14-64. The application server system additionally stores main content data and advertisement content data, and transmits the data to UE 2 when connection control system 3 establishes a connection between UE 2 and the application server system. Ex1001, 11:37-41, 11:53-60, 12:8-23. Connection control system 3 establishes the connection after executing a process to guarantee the communication bandwidth. Ex1001, 7:51-53, 8:41-9:4.

UE 2 receives the main content data and advertisement content data, and outputs viewing content in which the advertisement content is inserted in the main content. Ex1001, 5:62-67, 7:15-46. Advertisement content is inserted based upon play-list information transmitted by the application server system 4. Ex1001, 10:65-11:27. The play-list information also indicates a sequence in which the pieces of content are output. Ex1001, 6:57-62.

As discussed in Section IX, below, all of these functions were taught in the prior art before the earliest possible filing date of the '427 Patent.

D. Prosecution History

The original claims of the '427 Patent were rejected as anticipated by U.S. Publication No. 2008/0256216 A1 to Aarts, alone or in combination with U.S. Publication No. 2003/0105669 to Tsuchiya or U.S. Publication No. 2007/0223523 to Montpetit et al. Ex1002 at pp. 832-858, 739-775, 629-682, 519-578, 385-446, 256-323, 206-207, 80-140. The applicant subsequently amended the claims several times. Ex1002 at pp. 796-824, 695-731, 588-624, 472-506, 336-376, 209-244, 163-188, 50-75.

As discussed in the Section IX, below, the subject matter of the amended claims is not inventive.

VI. CLAIM CONSTRUCTION

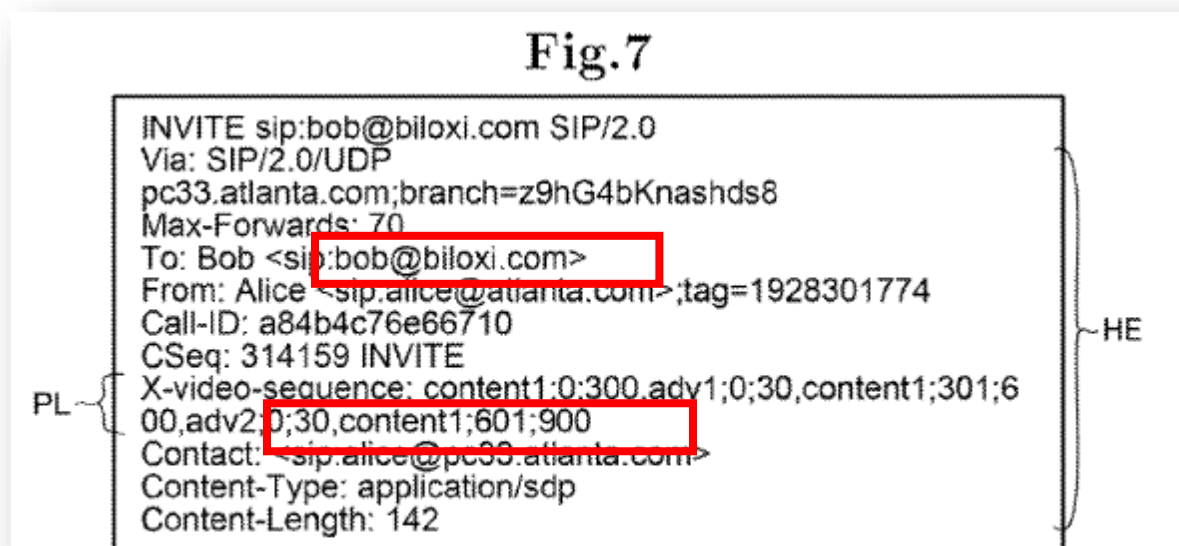
The Challenged Claims must be construed according to the ordinary and customary meaning as understood by a POSITA and the prosecution history. *See* 37 C.F.R. §42.100(b); 83 Fed. Reg. 51340, 51340-44 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005).

Petitioner reserves the right to present different constructions of the claim terms in litigation. Petitioner proposes the claim constructions below for purposes

of this petition only. Any claim terms that are not defined below are presumed to have their plain and ordinary meaning.³

A. “equipment specification information”

For purposes of this petition, this claim term should be construed to mean *an identifier for identifying the user equipment*. Ex1008 ¶63. Figures 7-11, 16 and 19 of the ’427 Patent each show a SIP INVITE message containing equipment specification information in the form of an identifier such as “alice@atlanta.com” or “alice@pc33.atlanta.com.” Figure 7 is reproduced below.



³ Petitioner does not concede that any claim terms meet the statutory requirements of 35 U.S.C. §112.

B. “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” (claims 1, 14, 18, 20, 22, 32 and 34-36)

For purposes of this petition, this claim term should be construed to cover at least the preferred (and only) embodiment described in the '427 Patent. The '427 Patent describes that connection control system 3 “receives the communication bandwidth information and the communication channel specification information from the call connection controller 31, and executes a process to guarantee a communication bandwidth represented by the communication bandwidth information for a communication channel specified by the received communication channel specification information (bandwidth guarantee process).” Ex1001, 8:64-9:4; *see also id.* 15:35-40. Figures 5, 13, 15 and 18 of the '427 Patent show message flows of a process for establishing a connection using SIP messages (Ex1001, 15:35-40), and that a core IMS part 30 of the connection control system 3 (Ex1001, 7:48-50) executes the bandwidth guarantee process at B502. The specification does not elaborate further on what is meant by “a process to guarantee a communication bandwidth,” indicating that this process is a standard process performed by SIP servers using SIP messages. Ex1008 ¶64.

C. “at a same time...transmit[ting] the play-list information...to the user equipment which has transmitted the content delivery request”

The independent claims recite that the play-list information is transmitted to the user equipment “at a same time” that the one or more connection control servers executes the process for guaranteeing the communication bandwidth required for transmitting content data as a process for establishing the connection. The phrase “at the same time” is used only once in the specification, Ex1001, 7:24-35, and not in relation to a process for guaranteeing a bandwidth (or more generally in relation to a process for establishing a connection).

In its Amendment in Response to Non-Final Office Action dated April 14, 2017, Patent Owner characterized claim 1 as stating that the first transmitter is “configured to transmit play-list information at a same time that the one or more connection control servers executes a process for establishing the connection.” Ex1002 at pp. 72-73. Patent Owner distinguished U.S. Patent No. 8,458,184 to Dorogusker, stating that “the present system can perform the process of establishing a connection and transmitting play-list information together in order to deliver the playlist information to the user immediately when the connection is established, thereby improving the user experience.” Ex1002 at pp. 72-73.

Without waiving its right to argue for a different construction in the Related Litigation, and for purposes of this IPR petition, this claim term should, at the very

least, be construed to cover the preferred (and only) embodiment described in the '427 Patent. As discussed above, the '427 Patent describes an application server system 4 that transmits, to the connection control server 3, “a bandwidth guarantee instruction containing communication bandwidth information indicating the determined communication bandwidth, and the received media delivery specification information and play-list information (step C503),” as an OK message of a SIP message. Ex1001, 15:21-25. “Upon completing the bandwidth guarantee process, the core IMS part 30 transmits a transmission preparation completion notification to the user equipment 2 (step B502),” which contains the play-list information and is also transmitted as an OK message of a SIP message. Ex1001, 15:41-48. The specification does not elaborate further on the timing of transmitting the play-list information relative to executing the bandwidth guarantee process, indicating that the timing of the OK messages with respect to the bandwidth guarantee process is a standard process performed by SIP servers using SIP messages. Ex1008 ¶67.

As discussed below, the combination of Ueda with SIP Standard results in Ueda's playlist being transmitted as part of a standard OK message to a standard SIP server. This is exactly what happens in the sole embodiment described in the '427 Patent. The combination thus is within the scope of the limitation “at a same

time...transmit[ting] the play-list information...to the user equipment which has transmitted the content delivery request.” Ex1008 ¶¶68.

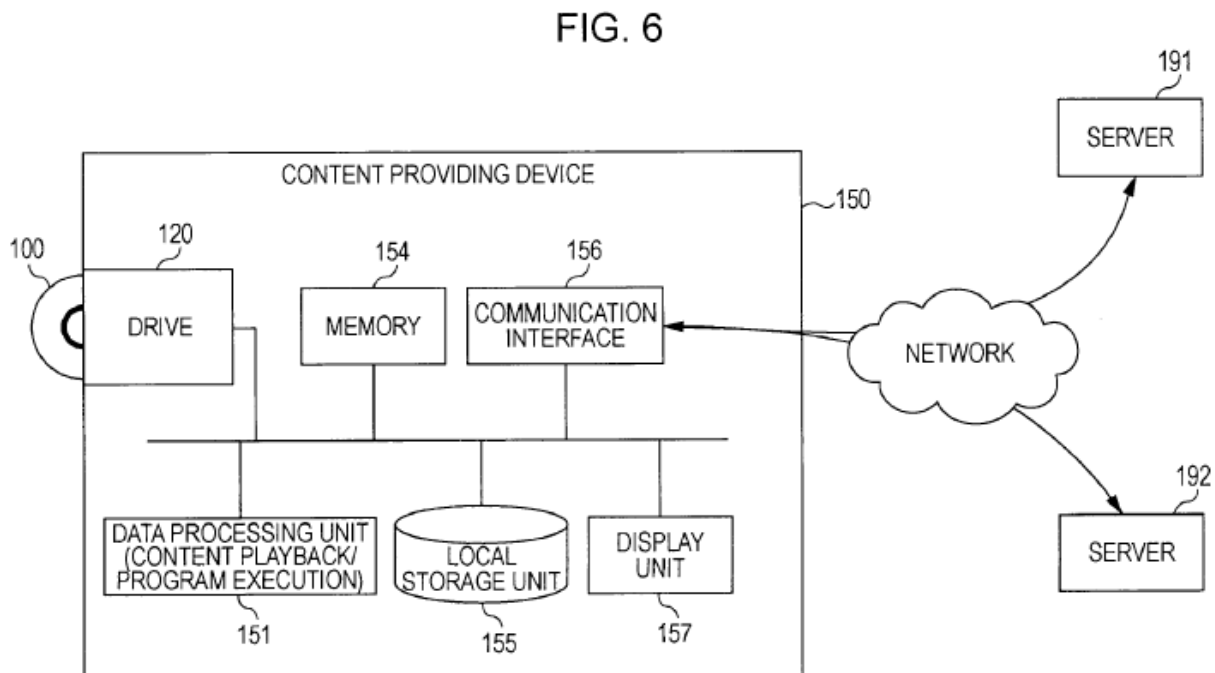
VII. SUMMARY OF THE RELIED-UPON PRIOR ART

None of relied-upon references was cited by the examiner during prosecution.

A. Ueda (U.S. Publication No. 2009/0094321)

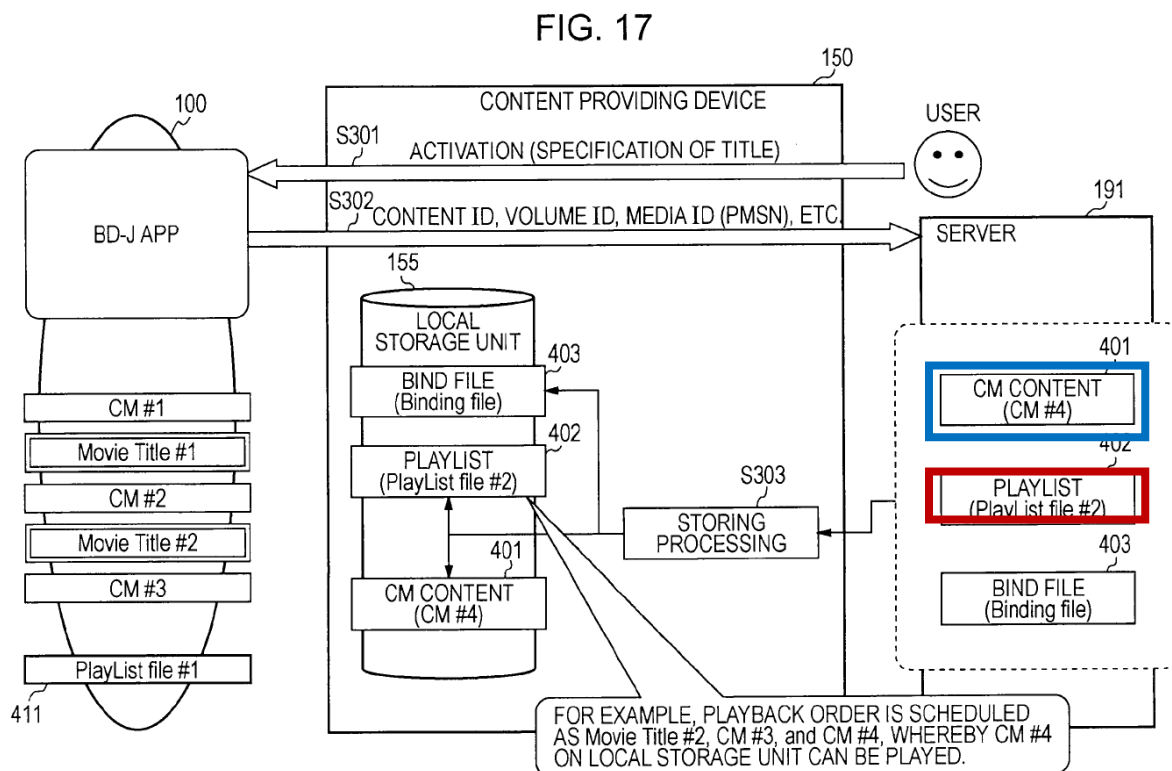
Ueda was filed on September 19, 2008. Ex1003. Ueda qualifies as prior art under at least pre-AIA 35 U.S.C. §102(e).

Ueda teaches a content delivery system comprising a server 191 that delivers content and a playlist to a user equipment (content providing device 150). *See, e.g.*, Ex1003 ¶¶0122, 0151-0155, Figs. 7, 24. The overall system is shown in Figure 6, reproduced below.

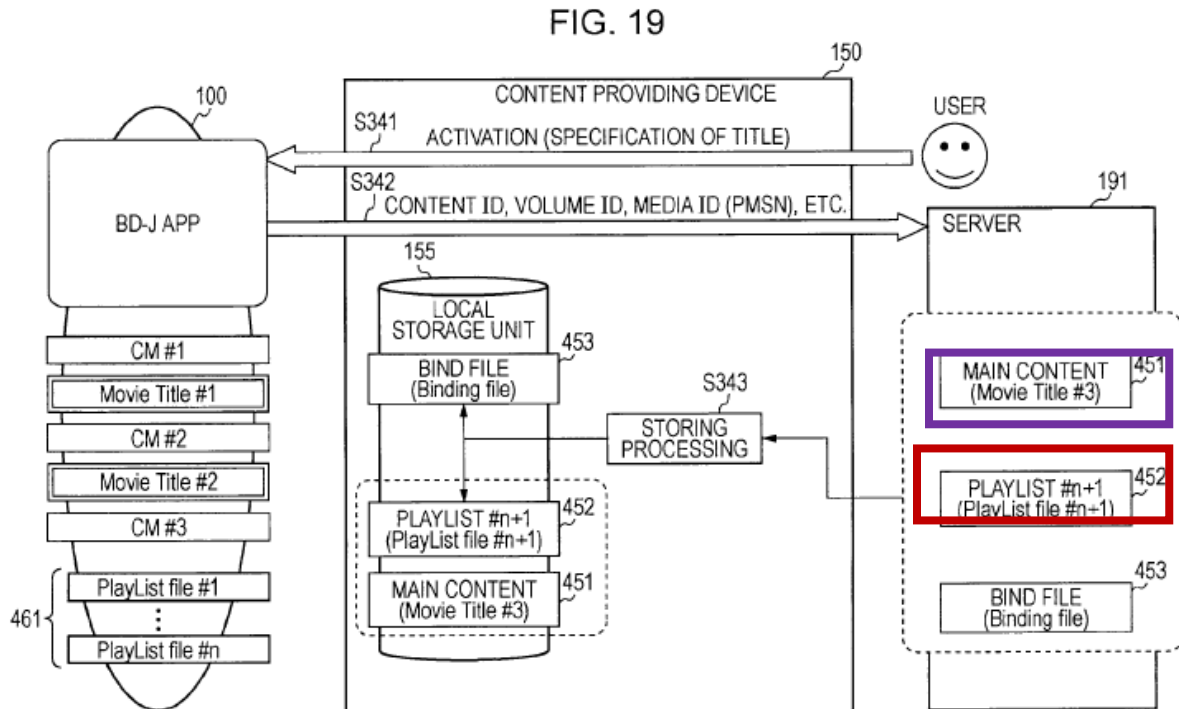


Server 191 receives a user ID and/or a content providing device ID transmitted by content providing device 150. Server 191 then establishes a connection with content providing device 150 based on the received equipment specification information. *See, e.g.*, Ex1003 ¶¶0147, 0148, 0169, 0243, 0258, 0275, 0343, 0344, 0374, 0380, 0388, 0389, 0435, 0441, Figs. 7, 24.

Server 191 comprises a database for storing **commercial content**. *See, e.g.*, Ex1003 ¶¶0119, 0241, 0244, 0245, 0248, 0259, 0413, 0438, 0439, 0443, Figs. 17, 30. The commercial (CM) content is shown in Figures 17 and 30, along with a **playlist**. Figure 17 is reproduced below.



Server 191 may also comprise a database for storing **main content data**, such as a movie. *See, e.g.*, Ex1003 ¶¶0271-0273, 0276-0277, Fig. 19. The main content 451 is shown in Figure 19 of Ueda, along with a playlist, an example of which is shown in Figure 20. Figure 19 is reproduced below.



Server 191 selects the commercial content for the individual user based on user-preference or personal information. *See, e.g.*, Ex1003 ¶¶0017, 0019-0023, 0028, 0441-0443. This information may relate to an attribute such as a user interest (e.g., cars), travel destination (e.g., South Korea), or product type (e.g., South Korean products). Ex1003 ¶0439.

B. SIP Standard

SIP Standard was published in June 2002. Ex1004, p. 1; Ex1008 ¶79. SIP Standard qualifies as prior art under at least pre-AIA 35 U.S.C. §102(a), (b).

SIP Standard is an IETF (Internet Engineering Task Force) protocol that describes Session Initiation Protocol (“SIP”), which is “an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants.” Ex1004, p. 1, Abstract. SIP uses “proxy servers to help route requests to the user’s current location, authenticate and authorize users for services,...and provide features to users.” Ex1004, p. 1, Abstract. These proxy servers establish connections (media sessions) between users as shown in Figure 1, reproduced below, based on a logical address or logical identity. Ex1004, pp. 11, 35 (§8.1.1), 37 (§8.1.1.3). Once the media session has begun, the users can exchange media packets. Ex1004, p. 16, Fig. 1, pp. 77-86 (§13).

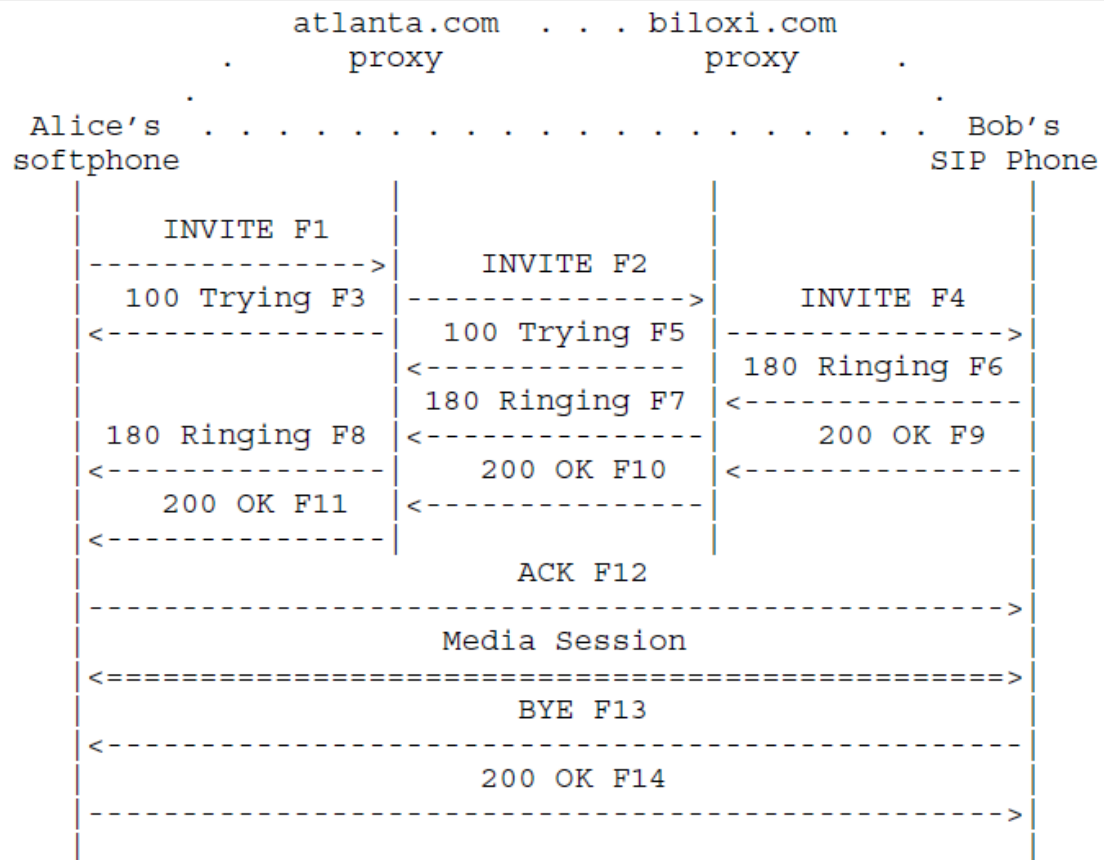


Figure 1: SIP session setup example with SIP trapezoid

C. SDP Standard

SDP Standard was published in July 2006. Ex1005, p. 1; Ex1008 ¶88. SDP Standard qualifies as prior art under at least pre-AIA 35 U.S.C. §102(a), (b).

Like SIP Standard, SDP Standard is an IETF protocol “for describing multimedia sessions for the purposes of session announcement, session invitation, and other forms of multimedia session initiation.” Ex1004, pp. 1 (Abstract), 10 (§2). SDP Standard teaches that “[t]he SIP messages used to create sessions carry session

descriptions that allow participants to agree on a set of compatible media types...are commonly formatted using SDP.” Ex1005 p. 4 (§3.1); *see also, e.g., id.* p. 5. An SDP description includes the media comprising the session, information needed to receive those media, and “information about the *bandwidth* to be used by the session.” Ex1005, p 5; *see also id.*, pp. 1, 4, 5, 8-9, 16 (§5.8).

D. Bechtolsheim

Bechtolsheim was filed on April 24, 2007. Ex1006. Bechtolsheim qualifies as prior art under at least pre-AIA 35 U.S.C. §102(e).

Figure 1 (reproduced below) shows a cable television system 10, which includes a content-on-demand (COD) application server 160 and a stream system 130. Ex1006 ¶¶0017, 0023-0024, Fig. 1. Stream system 130 establishes a connection with a set top box (STB) 120. Ex1006 ¶¶0023, 0046, Fig. 1. Stream system 130 also puts together a playlist of the content segments for a movie, with the content segments specifying chapters of the movie and commercials. Ex1006 ¶0033. At the same time that the playlist is put together, the stream system 130 executes a process for guaranteeing a communication bandwidth for transmitting content data. Ex1006 ¶¶0034, 0038, 0049.

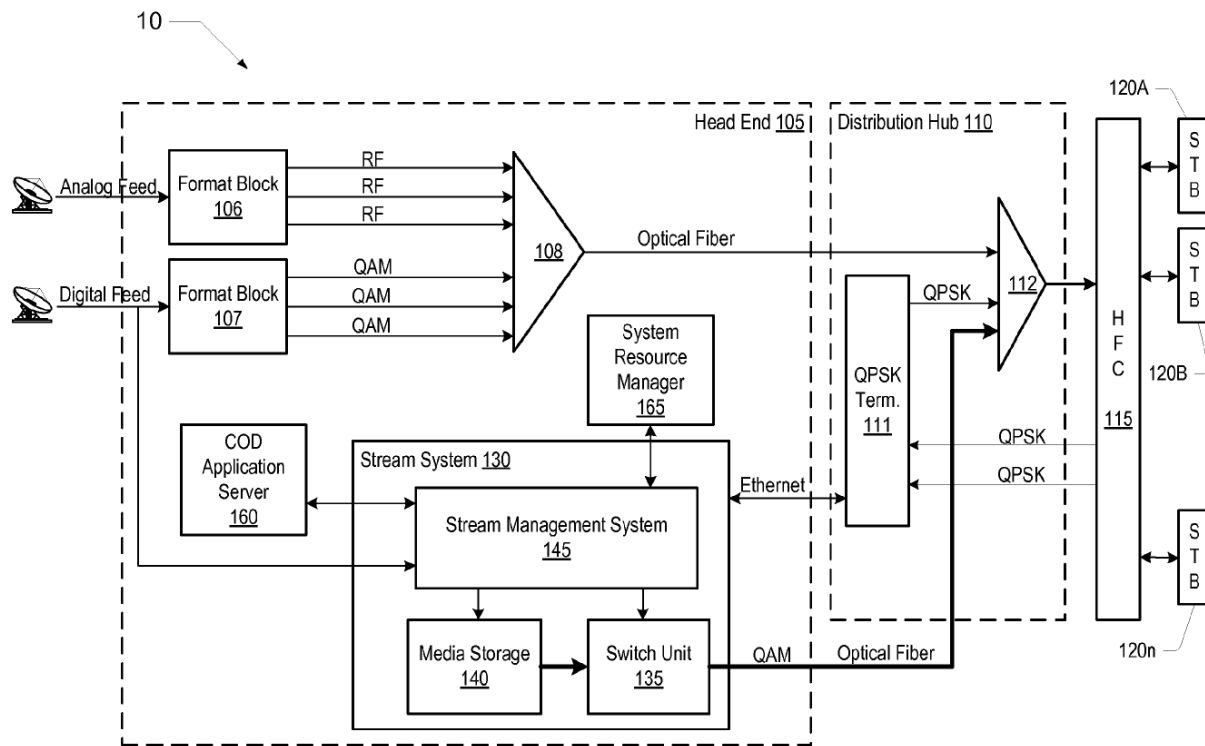


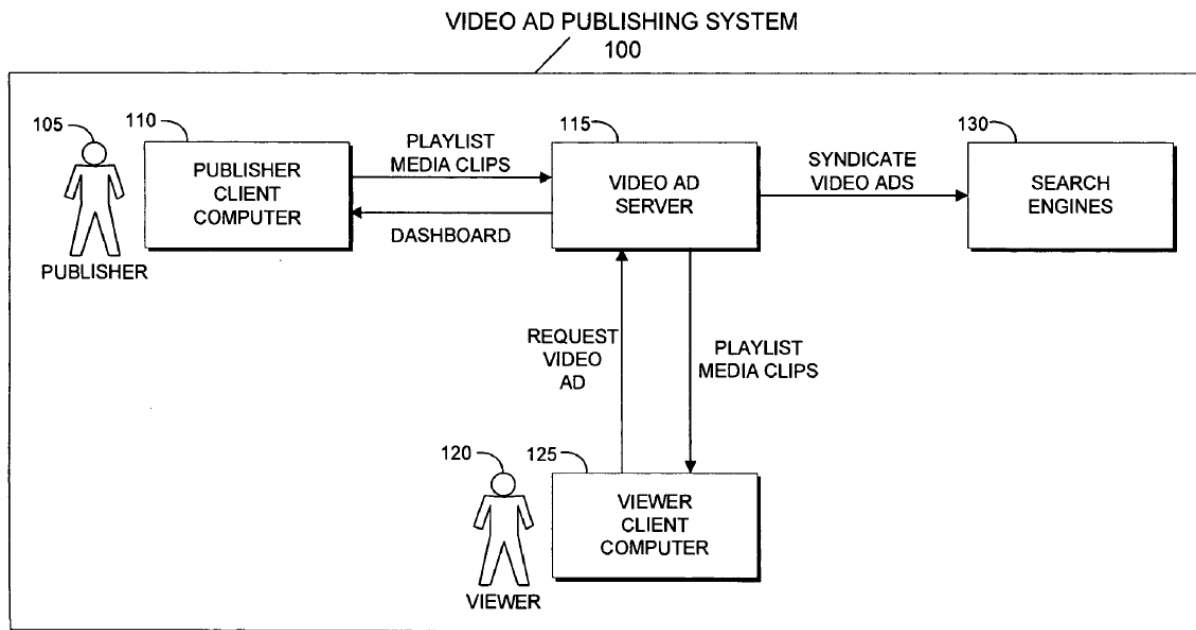
FIG. 1

E. Cohee

Cohee was filed on July 14, 2008. Ex1007. Cohee qualifies as prior art under at least pre-AIA 35 U.S.C. §102(e).

Figure 1 (reproduced below) shows a video ad publishing system 100. Ex1007 ¶0037, Fig. 1. The video ad publishing system 100 comprises a video ad server 115 storing media clips (Ex1007 ¶¶0037, 0053, 0057, 0062, 0064, 0072-0073, Figs. 7 and 8) and a viewer client computer 125. Ex1007, Figs. 1, 5, 7, 8. Viewer client computer 125 transmits a media file request to the video ad server 115. Ex1007 ¶¶0057, 0063, Figs. 4, 5, 6. The video ad server transmits a playlist for a

video ad to the viewer client computer 125 based on a playback request of the video ad. Ex1007 ¶¶0057, 0063, Figs. 4 (435), 6 (625).



VIII. Discretionary Analysis for Review

Denial of institution under 35 U.S.C. §325(d) would be inappropriate because this petition relies on grounds and arguments not previously presented to the Office. The relied-upon art was not considered during prosecution.

The *General Plastic* factors do not weigh against institution, as this is the first IPR petition filed against the '427 Patent. Petitioner is concurrently filing a second IPR petition against the '427 Patent addressing claims that are not challenged in this petition. This is due to the number and length of the claims in the '427 Patent.

The *Fintiv* factors favor institution, which best serves the efficiency and integrity of the system. The related district court case is in its early stages. While some initial fact discovery has occurred, Patent Owner's infringement claim chart was just served on June 26, 2023 and claim-construction briefing will not begin until November 1, 2023. Per the District Court's Scheduling Order (Ex1009 at 21-23), the claim construction hearing will not occur until February 13, 2024, and the trial will not occur until March 31, 2025. Moreover, if institution is granted, Petitioner will not assert grounds in the district court that were raised or reasonably could have been raised in this Petition, and intends to file a *Sotera* stipulation to that effect. Thus, *Fintiv* factors one (stay likelihood), two (trial date), three (proceeding investment), and four (issue overlap) all favor institution.

Only *Fintiv* factor five raises a potential question. While Petitioner and Patent Owner are the same parties in the district court, this is "far from an unusual circumstance." *Sand Revolution II, LLC v. Continental Intermodal Grp.-Trucking LLC*, IPR2019-01393, Paper 24 (June 16, 2020) (instituting where parties were the same) (informative).

This petition is strong on the merits, showing that the Challenged Claims are obvious. Petitioner's expeditious analysis of the dozens of claims of Patent Owner's three asserted patents in the Related Litigation weighs against a

discretionary denial. Thus, *Fintiv* factor six (other circumstances) favors institution.

IX. DETAILED EXPLANATION

A. Motivation to Combine (All Grounds)

1. Ueda, SIP Standard, and SDP Standard

Ueda teaches a server 191 that delivers content and a playlist to content providing device 150 through a network. *See, e.g.*, Ex1003 ¶¶0122, 0151-0155, Figs. 6, 7, 24; *see also* Section VII.A, *supra*. Server 191 generates an allowed processing list (Figure 7, S102) and/or has an authentication processing unit (Figure 24). *See, e.g.*, Ex1003 ¶¶0148, 0344-0345, Figs. 7, 24. Ueda also teaches establishing a connection between server 191 and content providing device 150. *See, e.g.*, Ex1003 ¶¶0147, 0148, 0169, 0243, 0258, 0275, 0343, 0344, 0374, 0380, 0388, 0389, 0435, 0441, Figs. 7, 24.

A POSITA would have been motivated to combine SIP Standard with Ueda in order to provide intermediating resources for media sessions between agents, yielding a predictable result of establishing a connection between the agents. Ex1008 ¶104. SIP standard teaches proxy servers that establish a connection between endpoints for a media session. Ex1004, p. 1, Abstract. The motivation would have been to 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. *See, e.g.*, Ex1004, pp. 8-9, 11; Ex1008 ¶104.

A POSITA thus would have used the well-known techniques taught by SIP Standard to improve the operation of Ueda and yield the predictable result of establishing a media session between agents. Ex1008¶105. Additionally, a POSITA would have understood that Internet standards, such as those promulgated by the IETF, enjoy general public support, are recognizably useful in standardizing interactions over the Internet, and are stable and technically competent. Ex1008 ¶105; Ex1010, p. 3 §1.1. As such, a POSITA would have looked to Internet standards, such as SIP Standard, as well-known, established techniques for establishing connections between agents over the Internet. Ex1008 ¶105.

Additionally or alternatively, a POSITA would have been motivated 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. Ex1008 ¶106. SIP Standard teaches that proxy servers "authenticate and authorize users for services" and "[r]ecipients of requests can authenticate the originator of a request in order to ascertain that they are who their From header field claims they are...." Ex1004, pp. 1, 37; *see also, e.g., id.* p. 10. Security, therefore, would have provided further motivation for a POSITA to combine the proxy servers of SIP Standard with Ueda. Ex1008 ¶106.

Accordingly, it would have been obvious for a POSITA to select SIP Standard from other Internet protocols, with a reasonable expectation of success in intermediating a media session between the server 191 and content providing device 150 of Ueda. Ex1008 ¶107.

SDP Standard, like SIP Standard, is an IETF protocol. *See* Section VII.C, *supra*. SDP Standard states that “**SIP messages...are commonly formatted using SDP.**” Ex1005 p. 4 (§3.1); *see also, e.g., id.* p. 5. Further, SDP Standard is used “for describing multimedia sessions for the purposes of session announcement, session invitation, and other forms of multimedia session initiation.” Ex1004, p. 1 (Abstract), p. 10 (§2). Thus, a POSITA would have been motivated to combine SDP Standard with Ueda and SIP Standard to convey media details, transport addresses, and other metadata to participants for initiating multimedia sessions. Ex1008 ¶109-110. SIP Standard and SDP Standard themselves teach such a motivation. *See, e.g.,* Ex1004, p. 10; Ex1005, pp. 1, 4 (§3.1), 13-14.

2. Ueda, SIP Standard, and Bechtolsheim

Bechtolsheim teaches determining bandwidth requirements for segments of content data and guaranteeing this bandwidth at the same time that a playlist is prepared. *See* Section VII.D, *supra*. A POSITA would have been motivated to combine Bechtolsheim with Ueda to maintain video quality and avoid requiring a higher bandwidth than available. Ex1008 ¶111. Bechtolsheim itself teaches such a

motivation. *See, e.g.*, Ex1006 ¶0038 (“[A] stream which consistently requires higher bandwidth than the configured rate may produce[] poorer quality video.”).

A POSITA would have been motivated to combine Bechtolsheim with SIP Standard to provide for describing multimedia sessions and timing information, such as bandwidth requirements, in metadata for initiating multimedia sessions. Ex1008 ¶112; *see also, e.g.*, Ex1004, pp. 9 (§2), 10 (§2); Ex1006 ¶¶0034, 0038, 0049.

3. Ueda and Cohee

Cohee teaches transmitting a request for a media clip referenced in a playlist. *See* Section VII.E, *supra*.

A POSITA would have been motivated to combine Cohee with Ueda to make it possible for media clips to reside at any location, including at a remote server on the Internet. Ex1008 ¶113; *see also, e.g.*, Ex1007 ¶0053. Additional motivations include: reducing dedication of end-user equipment local storage resources for storing main content and sub content, and reducing privacy risks for content providers that could occur by permitting local storage of content. Ex1008 ¶113.

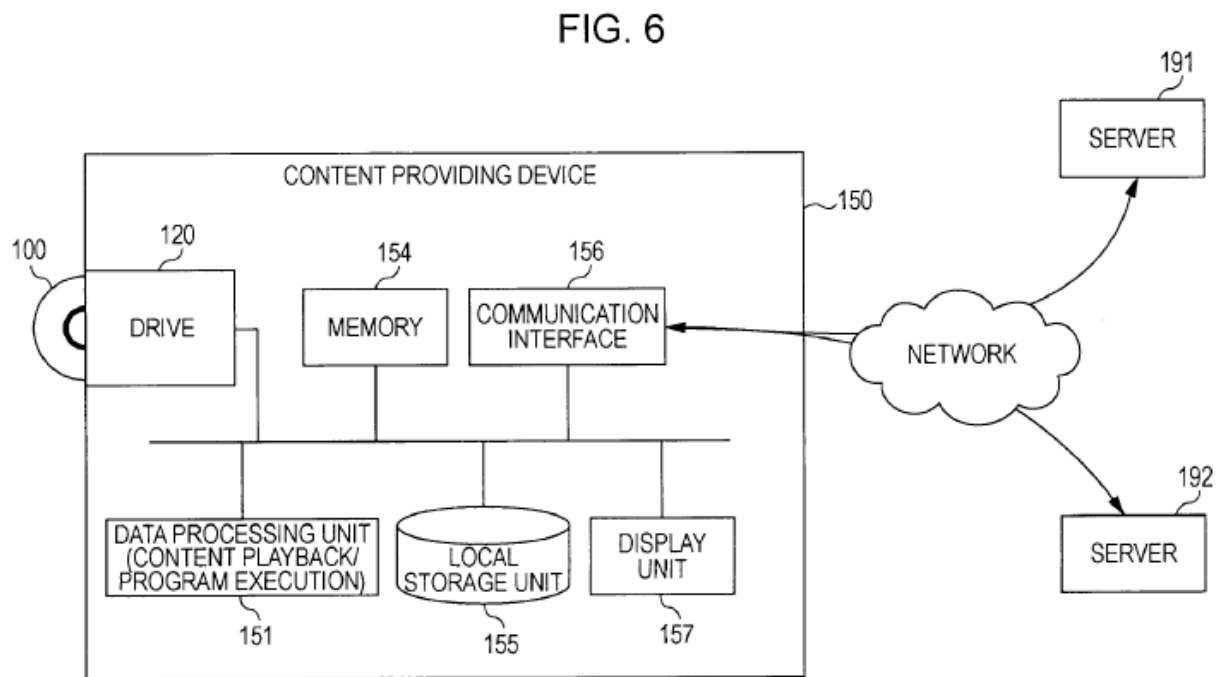
B. Ground 1

Ueda combined with SIP Standard and SDP Standard renders obvious claims 1, 4-9, 14, 16, 18, 20, 22, 32 and 34-36.

1. Claim 1 [preamble]: “A content delivery system comprising”

Ueda teaches the preamble. Ex1008 ¶¶115-117.

Figure 6 of Ueda (reproduced below) teaches a content delivery system. Content providing device 150 can obtain download content from server 191. Ex1003 ¶¶0037, 0117-0119, Fig. 6.



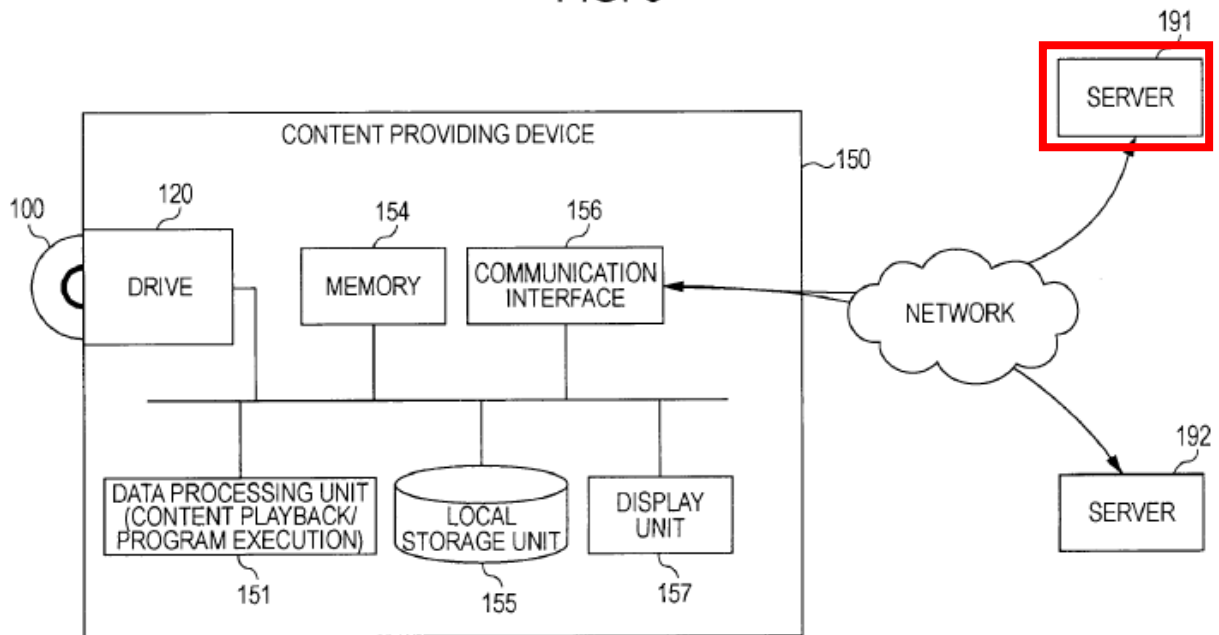
To the extent that the preamble is limiting, Ueda teaches it.

a. [1a]: “an application server system”

Ueda teaches [1a]. Ex1008 ¶¶118-121.

Figure 6 teaches that the content delivery system comprises a server 191 (“**an application server system**”). Ex1003, Fig. 6. Server 191 delivers content management application 332, management data 333, content 334, and bind file 335 to content providing device 150. Ex1003 ¶¶0122, 0151-0155, Fig. 7; *see also, e.g., id.* Figs. 17, 19, 24, 30, 31-33 (server 730).

FIG. 6



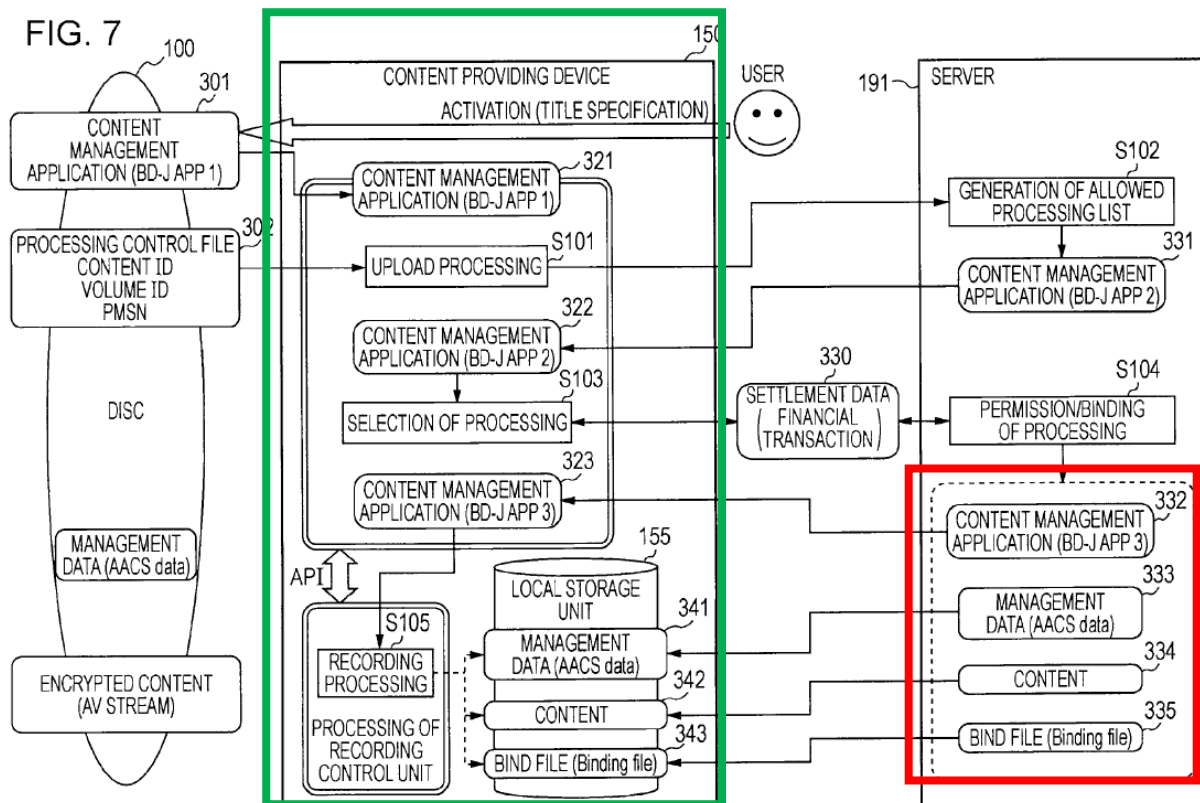
- b. **[1b]: “and one or more connection control servers, the one or more connection control servers being configured to receive equipment specification information transmitted by a user equipment and establish a connection between the application server system and the user equipment based on the received equipment specification information”**

Ueda in view of SIP Standard teaches [1b]. Ex1008 ¶¶122-142.

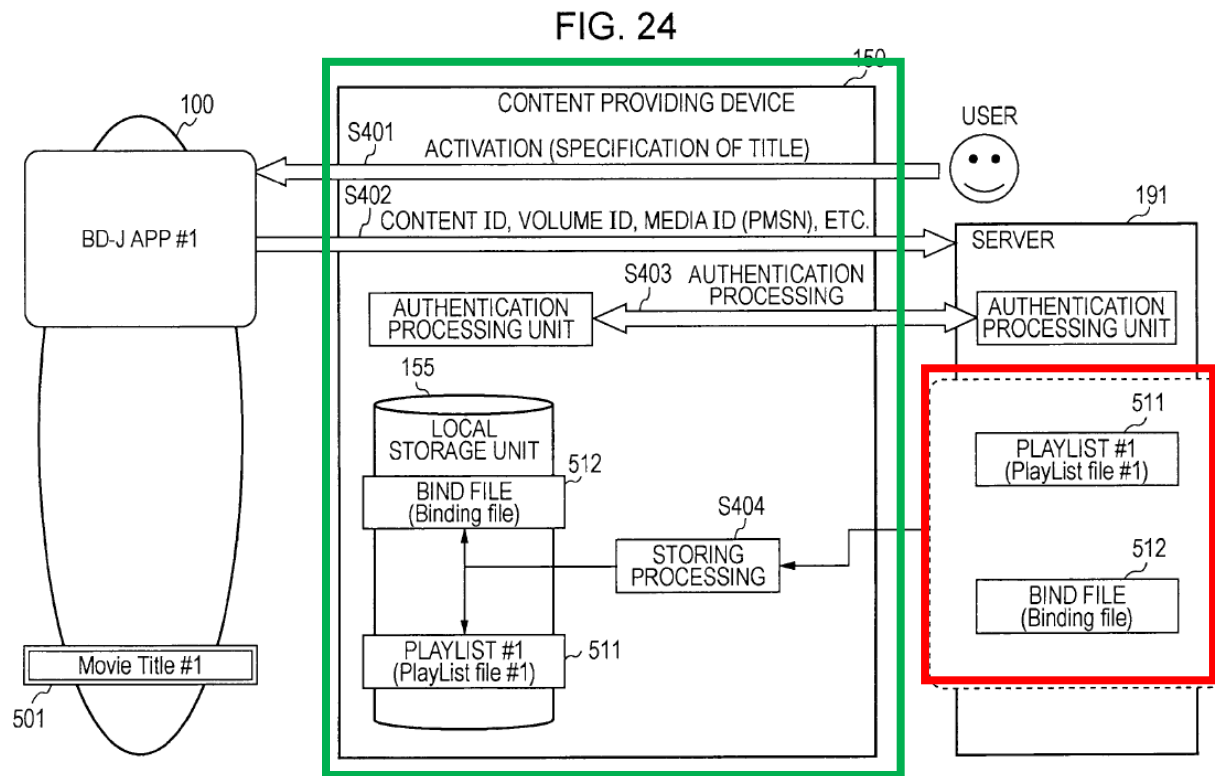
(1) Ueda teaches “equipment specification information transmitted by a user equipment.”

In S101, content providing device 150 (“user equipment”) transmits an identifier for identifying the user equipment as “identification information of at least one of a *user ID and content providing device ID* to the server 191 for performing content (download content) providing processing.” Ex1003 ¶0147; *see also, e.g., id.* ¶¶0169, 0243, 0258, 0275. Thereafter, as indicated in Figure 7 (reproduced below),

server 191 “generates an allowed processing list, which is a list of processing which the **user equipment** (content providing device 150) is allowed to perform, based on the identification information included in the received data, e.g., a content ID or user ID” from content providing device 150. Ex1003 ¶0148, Fig. 7 (S102).



Additionally or alternatively, as shown in Figure 24 (reproduced below), server 191 can have an authentication processing unit that controls the connection between server 191 (“**application server system**”) and content providing device 150 (“**user equipment**”). *See, e.g.*, Ex1003 ¶¶0344-0345.



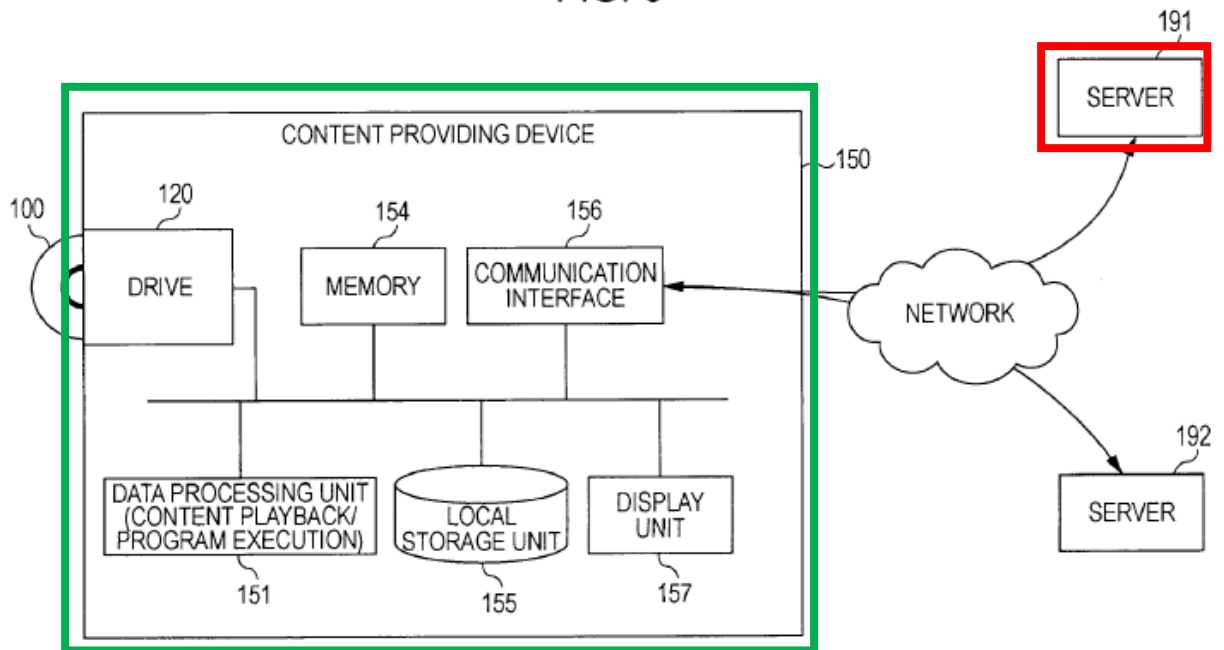
So that the authentication processing unit can perform authentication processing in S403, content providing device 150 (“user equipment”) transmits equipment specification information (*a user ID and/or a content providing device ID*) to server 191 in S402. Ex1003 ¶¶0343 (S402), 0374, 0380, 0388 (“[U]ser information, device ID, and so forth are transmitted only once at the time of first content download processing.”), 0389, 0435, 0441, Figs. 26-28, 30.

- (2) Ueda teaches “a connection between the application server system and the user equipment based on the received equipment specification information.”

Figure 6 (reproduced below) teaches an application server system (server 191) connected to user equipment (content providing device 150) through a network.

Ex1003, ¶0118, Fig. 6;. As discussed above for Figures 7 and 24, server 191 receives equipment specification information from content providing device 150 (the user ID and/or the content providing device ID). Content providing device 150 thereafter obtains content from server 191. Ex1003 ¶0119, Fig. 6.

FIG. 6



A connection thus is established between (1) server 191 (“application server system”) and (2) content providing device 150 (“user equipment”). Figure 7 depicts the connection as arrows from server 191 to content providing device 150. See Ex1003 ¶0148. As noted above, identification information transmitted by content providing device 150 may include “at least one of a *user ID and content providing device ID.*” Ex1003 ¶0147; *see also id.* ¶¶0169, 0243, 0258, 0275.

The connection is further shown in Figure 24 by the arrow depicting the transmission of playlist 511 and bind file 512 from server 191 to content providing device 150. This connection is established “as a condition that the validity of the disc or the validity of the content providing device has been confirmed.” Ex1003 ¶¶0344. The validity of content providing device 150 is confirmed through equipment specification information (a user ID and/or a content providing device ID). *See, e.g.*, Ex1003 ¶¶0343, 0374, 0380, 0388, 0389, 0435, 0441, Figs. 26-28, 30. Server 191 thus is connected to the user equipment (content providing device 150) based on received equipment specification information (the user ID and/or the content providing device ID).

- (3) **SIP Standard teaches “one or more connection control servers being configured to receive equipment specification information transmitted by a user equipment and establish a connection” between a server system and “the user equipment based on the received equipment specification information.”**

SIP Standard teaches **one or more connection control servers** as one or more proxy servers between two endpoints. *See, e.g.*, Ex1004, p. 1 (Abstract) (“**proxy servers to help route requests to the user’s current location, authenticate and authorize users for service**”), p. 9 (§2). Figure 1 (reproduced below) shows two proxy servers between **user equipment** (Alice’s softphone or “Alice”) and a **server system** (Bob’s SIP phone or “Bob”).

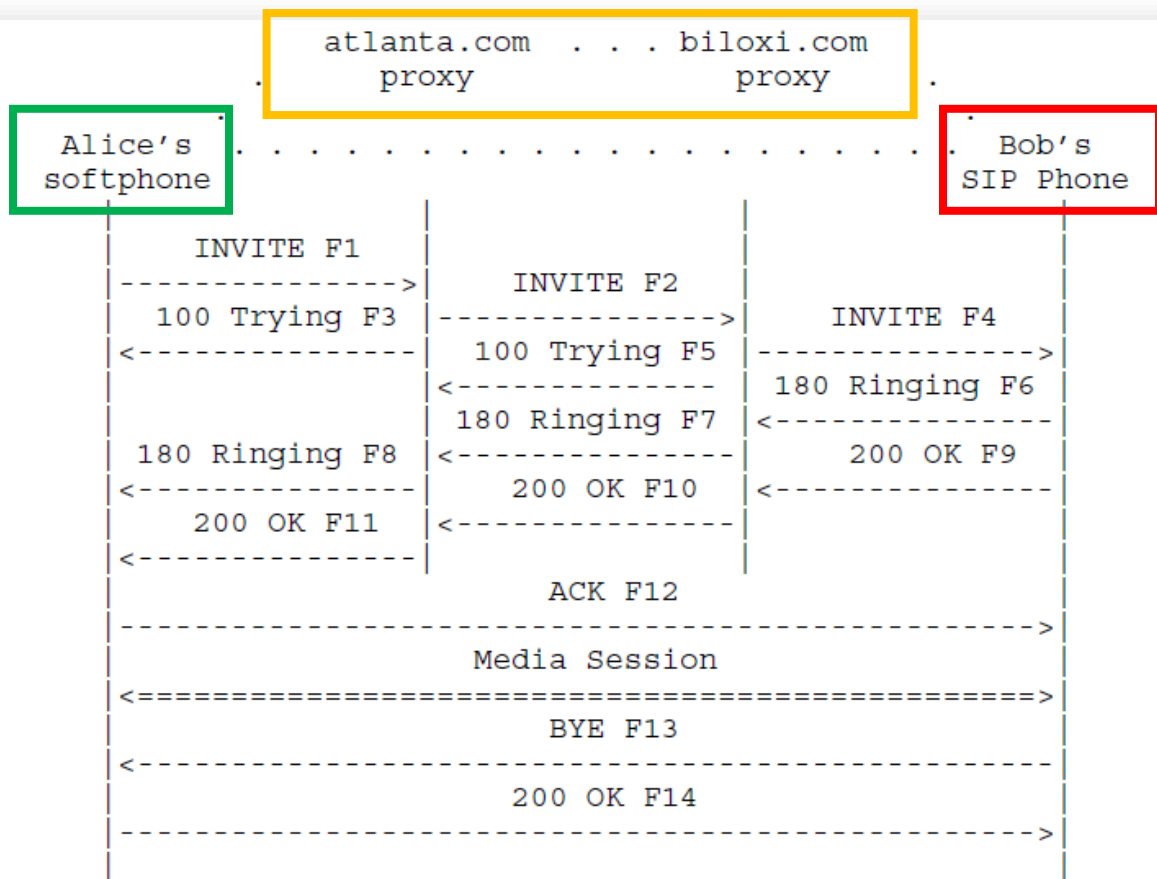


Figure 1: SIP session setup example with SIP trapezoid

Figure 1 shows an example of SIP message exchange between Alice and Bob through “two SIP proxy servers that act on behalf of Alice and Bob to facilitate the session establishment.” Ex1004, pp. 11-12, Fig. 1. Alice transmits a SIP message (INVITE F1) containing Bob’s SIP identity to the proxy servers and ultimately to Bob. Ex1004, pp. 11-12, Fig. 1. Bob responds with a 200 (OK) F9 message, which is routed back through the proxy servers to Alice. Ex1004, pp. 15, 16, Fig. 1. Alice next sends an ACK message to Bob. Ex1004, p. 16. The proxy servers thus establish

a connection (media session) between Alice and Bob, and they can exchange media packets. Ex1004, p. 16, Fig. 1; *see also id.* pp. 77-86 (§13).

SIP Standard teaches that the proxy servers receive a logical address or logical identity transmitted by user equipment and establish a connection based on this logical address or logical identity. *See, e.g.,* Ex1004, pp. 11 (the INVITE message from Alice includes *Alice's address*), 35 (§8.1.1), 37 (§8.1.1.3). The INVITE FI message on page 12 of SIP Standard is identical to the header (HE) shown in Figure 9 of the '427 Patent.

Thus, SIP Standard teaches that Alice (“user equipment”) transmits Alice’s logical identity, such as a logical address, to proxy servers (“connection control servers”), which use that information to establish a connection between Alice (“user equipment”) and Bob (server system).

(4) Ueda combined with SIP Standard teaches [1b].

As discussed above in Section IX.A, it would have been obvious for a POSITA to implement one or more connection control servers in the network of Ueda as proxy servers between server 191 and content providing device 150. Ex1008 ¶141. As so implemented, these proxy servers would necessarily and inherently have received equipment specification information (e.g., the user ID and/or content providing device ID of Ueda) from content providing device 150, which would have been used by the proxy servers to establish the connection.

Ex1008 ¶141. This is because, in SIP, a user equipment is required to transmit a logical identity or logical address to the proxy servers, which use this information to establish the connection. Ex1008 ¶141.

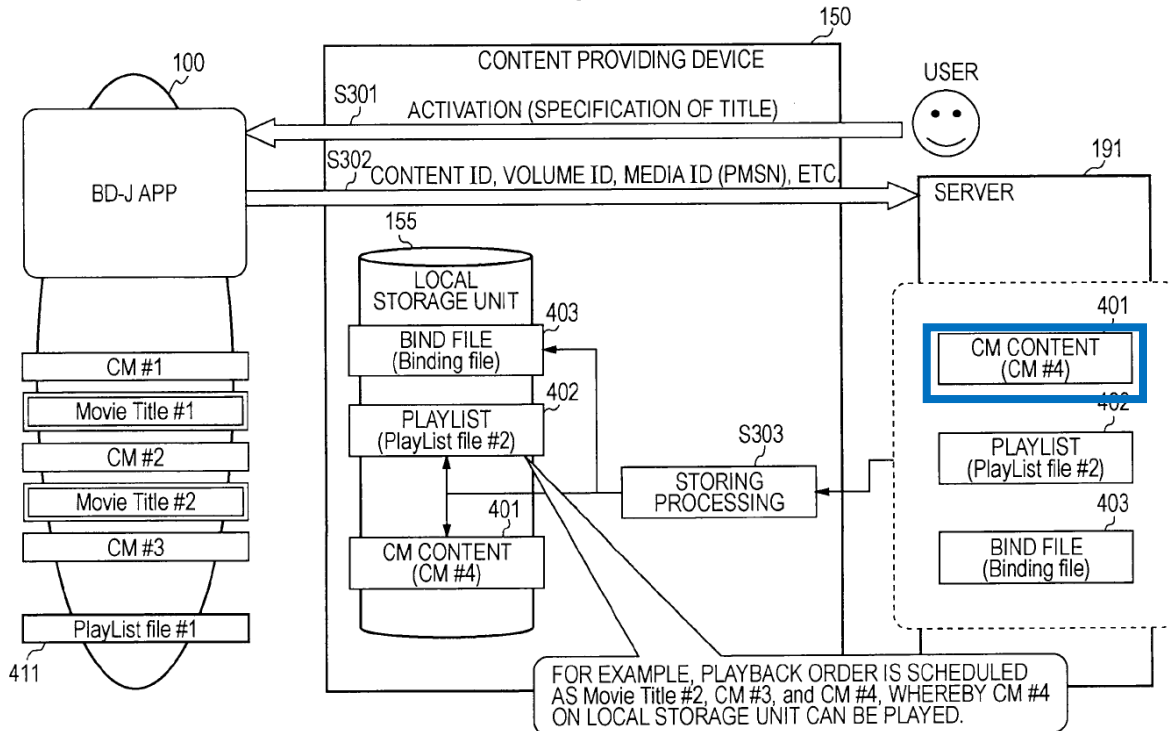
- c. **[1c]: “the application server system comprising: a memory for storing sub content data representing sub content and main content data representing main content”**

Ueda teaches [1c]. Ex1008 ¶¶143-157.

(1) Sub Content

Figure 17 (reproduced below) teaches that server 191 comprises a **memory for storing sub content data representing sub content**—the commercial (CM) content 401. The commercial content 401 is “downloaded and obtained from the server 191” by content providing device 150. Ex1003 ¶0241; *see also id.* ¶¶0245, 0248.

FIG. 17

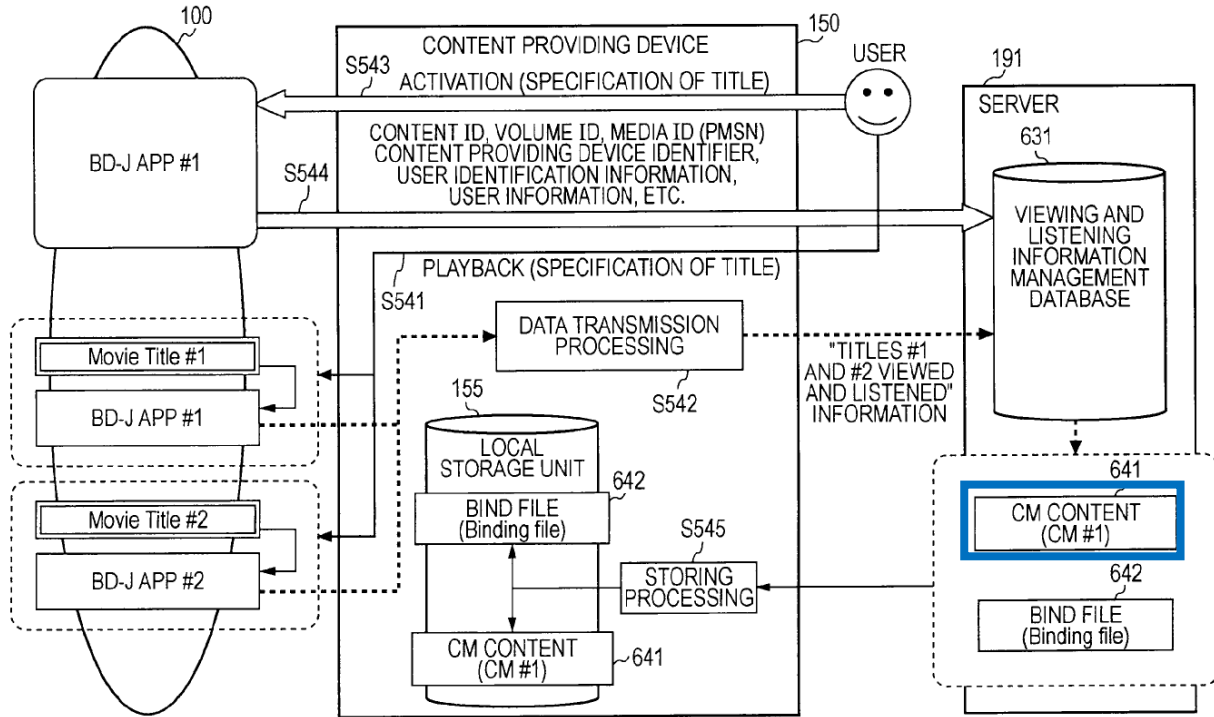


The commercial content 401 is sub content data representing sub content. Ueda explicitly identifies commercial content as “sub content.” *See, e.g.*, Ex1003 ¶0119.

Server 191 obtains the commercial content 401 “from a database,” which is a type of memory. Ex1003 ¶0244; *see also, e.g., id.* ¶0259. A POSITA would have understood that server 191 would necessarily and inherently have included a memory for storing the commercial content 401. Ex1008 ¶146.

Additionally, Figure 30 (reproduced below) teaches that server 191 comprises a **memory for storing sub content data representing sub content**—the commercial (CM) content 641. *See* Ex1003 ¶0438; *see also id.* ¶¶0413, 0439, 0443.

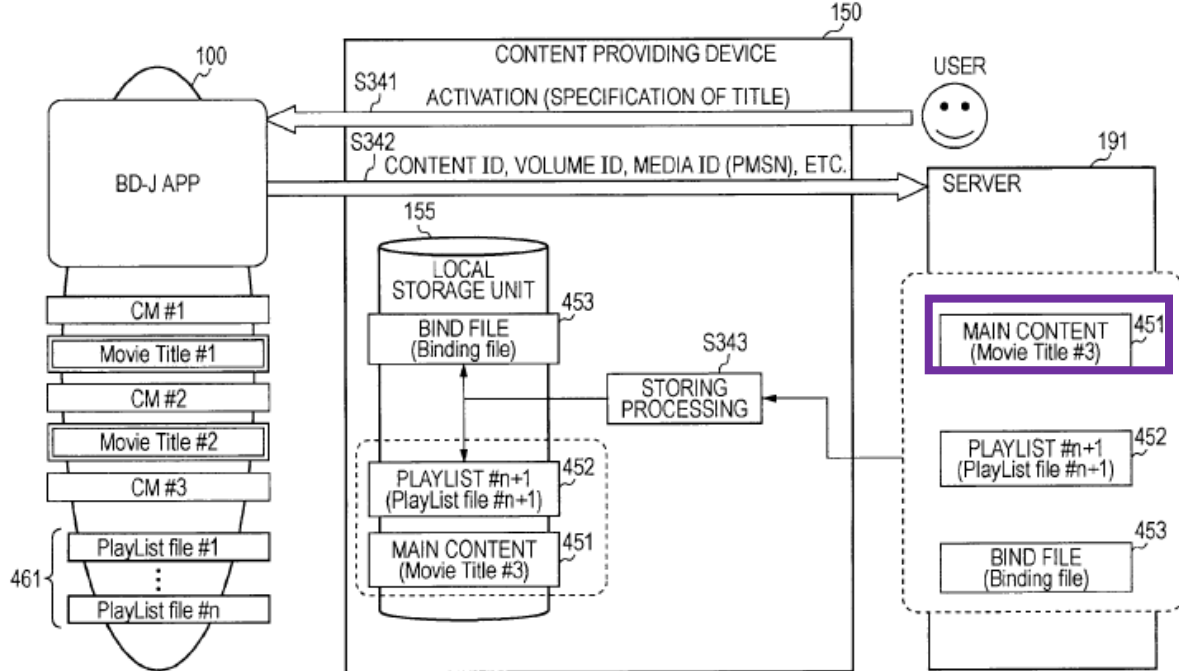
FIG. 30



(2) Main Content

Figure 19 (reproduced below) teaches that server 191 comprises a **memory for storing main content data representing the main content 451**. Ueda teaches that “the main content (Movie Title #3) 451...is a download content” from server 191. Ex1003 ¶0272; *see also, e.g., id.* ¶¶0271, 0273, 0276-0277.

FIG. 19



Server 191 obtains the main content 451 “from a database,” i.e., a memory. Ex1003 ¶0276. As discussed above, a POSITA would have understood that server 191 would necessarily and inherently have included a memory for storing the main content 451. Ex1008 ¶150.

(3) Figures 7, 17, 19, 24 and 30 can be combined.

Ueda contemplates that the disclosures of each of Figures 7, 17, 19, 24 and 30 can be combined. Ueda uses the same reference numbers in these figures for the content providing device (150) and the server (191). Thus, Ueda contemplates using the same server 191 and the same content providing device 150 in each figure, confirming that the functionality of the content providing device 150 and the server 191 in one figure can be used in the other figures.

Figures 17, 19 and 30 thus show examples of downloading different types of content from the memory of server 191, and Ueda makes clear both commercial and main content can be stored in and downloaded from a single server. *See, e.g.*, Ex1003 ¶0239 (“the 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...is downloaded in some cases.”).

Further, Ueda explicitly contemplates using the server 191 in Figure 7 with the same server 191 in Figures 17 and 19. *See, e.g.*, Ex1003 ¶¶0242-0243, 0274-0275; Ex1008 ¶154.

Additionally or alternatively, a POSITA would have understood that the figures could be combined. Ex1008 ¶155-156. For example, a POSITA would have been motivated to combine these figures so that both the main content 451 and commercial content 401/641 is stored in and downloaded from the same server, as taught in paragraph 0239 of Ueda. Ex1008 ¶156.

- d. **[1d]: “a first receiver for receiving a content delivery request transmitted by the user equipment and containing main content identification information for identifying the main content”**

Ueda teaches [1d]. Ex1008 ¶158-164.

(1) Ueda teaches “a first receiver for receiving a content delivery request transmitted by the user equipment.”

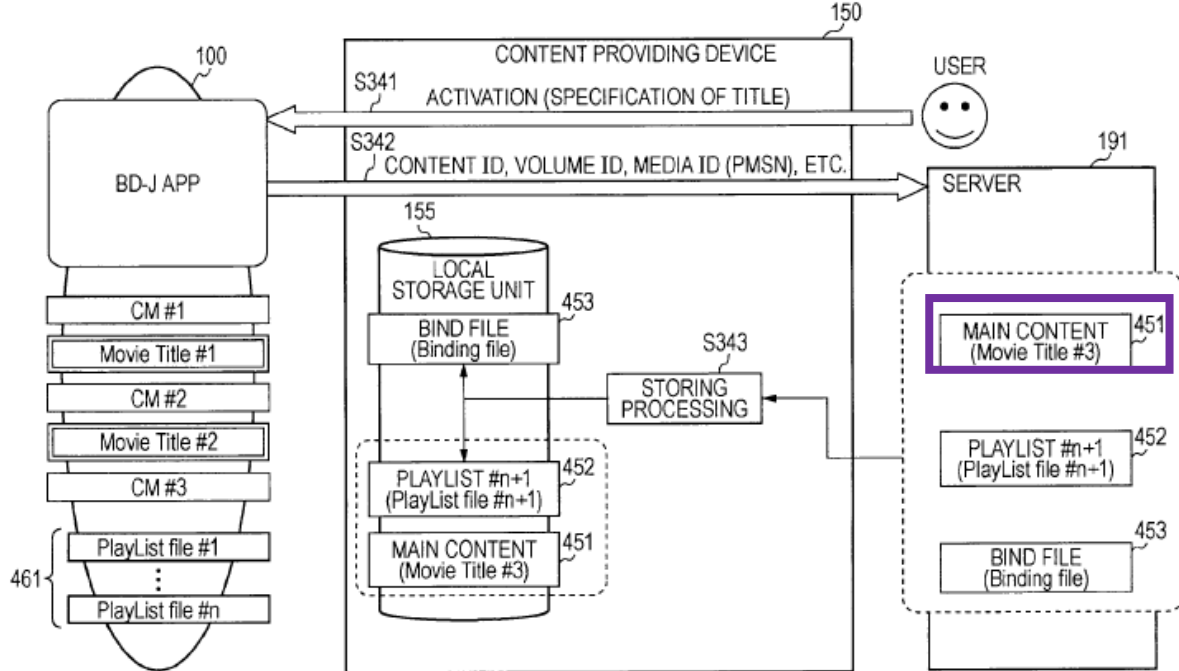
Ueda’s server 191 receives a “download request” (“content delivery request”) transmitted by content providing device 150 (“user equipment”). *See, e.g.,* Ex1003 ¶¶0276-0279 (“Upon *receiving a download request from the content providing device 150...*”), 0244, 0259, 0299, 0344, 0370, 0372, 0385-0388, 0438, 0485, 509, 529.

Ueda teaches that content providing device 150 includes “a communication interface 156 for executing communication through a network” (“a receiver”). Ex1003 ¶0118, Fig. 6. A POSITA would have understood that server 191 would necessarily and inherently have included a receiver for receiving the download request. Ex1008 ¶160. A receiver is how servers necessarily received requests from devices connected to a network. Ex1008 ¶160.

(2) Ueda teaches a content delivery request that contains “main content identification information for identifying the main content.”

Ueda teaches that, after receiving the download request transmitted by content providing device 150, server 191 transmits **main content** identified by the request. *See, e.g.,* Ex1003 ¶¶0276-0279 (teaching the transmission of “*main content (Movie Title #3)* 451” after server 191 receives a download request), ¶0370, Fig. 19. An example of this is shown in Figure 19 (reproduced below).

FIG. 19



For server 191 to be able to identify and transmit main content (such as Movie Title #3), the download request from content providing device 150 must necessarily and inherently contain main content identification information identifying the main content. Otherwise, server 191 would not know which main content to transmit. Ex1008 ¶¶162-163.

Ueda thus discloses that server 191 comprises a receiver for receiving a content delivery request (download request) transmitted by the user equipment (content providing device 150) and containing main content identification information for identifying the main content (main content 451).

- e. **[1e]: “a processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content; and”**

Ueda teaches [1e]. Ex1008 ¶¶165-171.

- (1) Ueda teaches “a processor for selecting the stored sub content data based on selection information.”**

Ueda discloses that server 191 comprises a “data processing unit” (“a processor”) that

analyzes the user's preference on the client side to provide a content adapted to the user's preference. Thus, *content which interests a user or commercial content can be selectively provided* to the user.

Ex1003, Abstract; *see also, e.g., id.* ¶¶0017, 0019-0023, 0028, 0441-0443.

The data processing unit thus selects stored sub content data (commercial content) based on selection information, such as user-preference or personal information. Ueda explicitly identifies commercial content as “sub content.” *See, e.g.,* Ex1003 ¶0119 (“The content providing device 150 obtains a *sub content*..., such as caption data or dubbed-in data, *commercial content*,...through servers 191 and 192...”), *see also* Section IX.B.1.c, *supra*.

(2) Ueda’s selection information contains “attribute information representing an attribute of the sub content.”

The user-preference and personal information taught in Ueda contains attribute information representing an attribute of the commercial content as a category of commercial content. The user-preference and personal information is recorded in a database 631 of server 191. Ex1003 ¶0432, Fig. 30. Upon receiving a content download request, server 191 “searches the recorded information of the user preference information management database 631 based on various types of identification information included in the received data, and determines the preference of the user....” Ex1003 ¶0438. Server 191 then “selects a commercial content (CM #1) 641 which is a commercial content adapted to the determined user’s preference as a download content.” Ex1003 ¶0438.

User-preference and personal information used to select commercial content relates 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). Ex1003 ¶0439. Thus, the attribute information contained in the user-preference and personal information also represents an attribute of the commercial content 641 selected by server 191. In this way, “the preference of the user is determined to provide a commercial content adapted to the user’s preference....” Ex1003 ¶0440.

Ueda thus discloses that server 191 comprises a processor (the data processing unit) for selecting stored sub content data (e.g., the commercial content 641) based on selection information (the user-preference or personal information) containing attribute information (e.g., user interest, travel destination, product type, etc.) representing an attribute of the sub content.

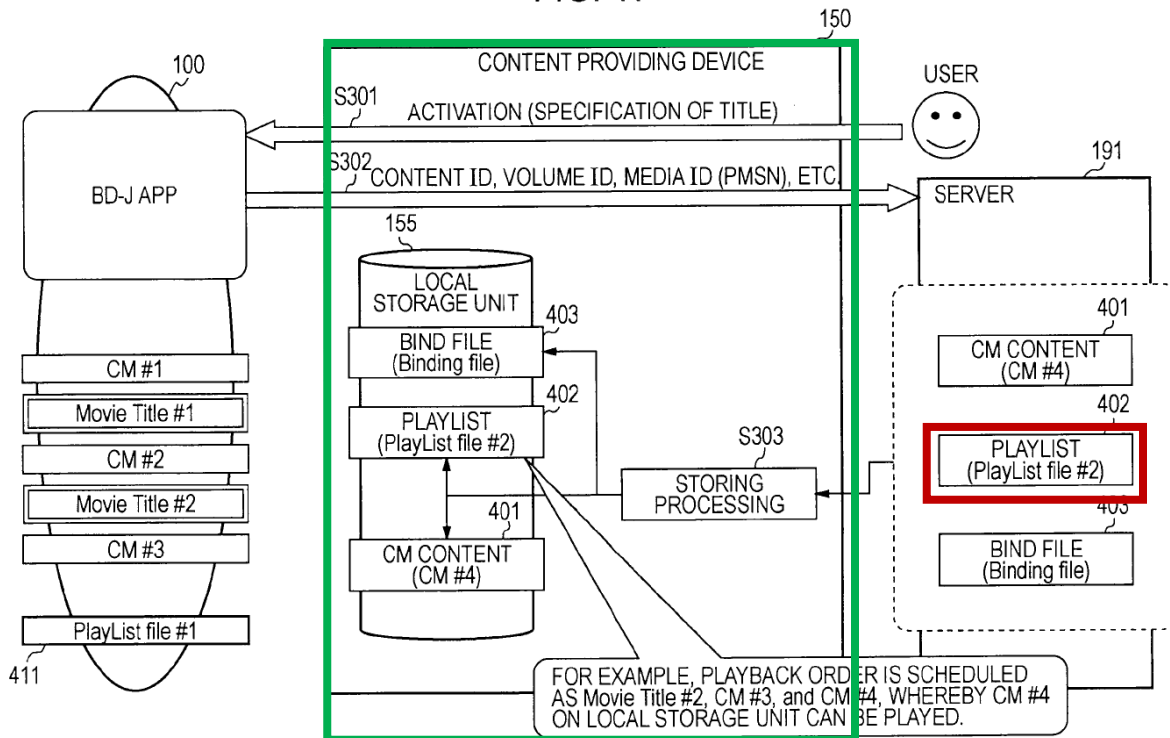
- f. **[1f]: “a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request”**

Ueda in view of SIP Standard teaches [1f]. Ex1008 ¶¶172-183.

- (1) **Ueda teaches “a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data...to the user equipment which has transmitted the content delivery request”**

Ueda expressly teaches server 191 transmits a playlist (“**selected sub-content specification information for specifying the selected sub-content**”) to content providing device 150 (“**user equipment which has transmitted the content delivery request**”) through the network that connects the server to the content providing device. *See, e.g.*, Ueda, Fig. 17 (“PlayList file #2”), Fig. 19 (“PlayList file #n+1”), Fig. 24 (“PlayList file #1”), Fig. 6. Figure 17 (reproduced below) teaches that a **playlist 402** in which the CM content 401 is also downloaded from server 191 and stored in the local storage unit 155. Ex1003 ¶¶0241, 0244-0247.

FIG. 17



Playlist file 402 contains information for specifying the CM content 401 selected by server 191. *See, e.g.*, Ex1003, ¶0248 (“[P]laylist file (PlayList file #2) 402 is a playlist in which the commercial content (CM#4) 401 is included as a playback content.”). Thus, upon playback of playlist 402, content playback including the CM content 401 is performed. Ex1003 ¶¶0253-0254. Information for specifying commercial content selected by server 191 thus is contained within playlist 402. *See also, e.g., id.* ¶¶0281, 0399-0405, 0438, Figs. 20, 30.

A POSITA, however, would have understood that server 191 would necessarily and inherently have included a transmitter for transmitting playlists to content providing device 150. Ex1008 ¶176.

Ueda thus discloses that server 191 comprises a first transmitter for transmitting selected sub content specification information (e.g., playlist 402) for specifying the selected sub content data (e.g., commercial content 401/641) to the user equipment which has transmitted the content delivery request (content providing device 150).

(2) SIP Standard teaches “a first transmitter for transmitting...information...via the one or more connection control servers to the user equipment which has transmitted the...request.”

SIP Standard teaches one or more connection control servers as proxy servers. SIP Standard teaches the INVITE F1 message includes a request for a multimedia sessions as a primitive written in SDP for describing multimedia sessions. Ex1004, pp. 10, 12 (showing the INVITE message containing “Content-Type: application/sdp”). The SDP description is carried by the SIP message. Ex1004, pp. 13-14, 15 (showing message F9 containing “Content-Type: application/sdp”), 170 (describing “Content-Type”). SIP Standard teaches SIP messages exchanged between two endpoints routed through one or more proxy servers. *See* Section IX.B.1.b.

While SIP Standard does not explicitly teach a transmitter, a POSITA would have understood that Bob’s softphone would necessarily and inherently have

included a transmitter for transmitting the SIP messages to the proxy servers.
Ex1008 ¶180.

SIP Standard thus teaches a transmitter for transmitting information via one or more connection control servers (proxy servers) to the user equipment which has transmitted a request (INVITE message).

(3) Ueda combined with SIP Standard teaches [1f].

A POSITA would have been motivated (*see* Section IX.A) to combine transmission of playlist 402 to content providing device 150 of Ueda, with one or more connection control servers (proxy servers of SIP Standard) that establish a connection between the two endpoints. Ex1008 ¶182. As so combined, server 191 (“application server system”) would necessarily and inherently have transmitted playlist 402 via proxy servers (“one or more connection control servers”) to content delivery device 150 (“user equipment which transmitted the content delivery request”). Ex1008 ¶182.

- g. **[1g]: “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 one or more connection control servers to the user equipment which has transmitted the content delivery request”**

Ueda combined with SIP Standard and SDP Standard teaches [1g]. Ex1008

¶¶184-205.

- (1) **Ueda in view of SIP Standard teaches a first transmitter that “is configured to...transmit the play-list information via the one or more connection control servers to the user equipment which has transmitted the content delivery request.”**

Ueda combined with SIP Standard teaches that server 191 comprises a first transmitter that transmits the playlist 402 via one or more connection control servers (proxy servers of SIP Standard) to the user equipment which has transmitted the content delivery request (content providing device 150). *See* Section IX.B.1.f, *supra*.

- (2) **SIP Standard teaches 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.”**

Figure 1 of SIP Standard teaches that, based on the SIP INVITE message F1, Bob responds with a 200 OK F9 message, which is routed to Alice via the proxy servers. Ex1004, pp. 12, 15, 16, Fig. 1. As shown in Figure 1, this exchange includes

providing 200 (OK) message F9 to the proxy servers, which transmits a 200 OK message F11 to Alice if a connection can be established. Ex1004, p. 12. This exchange of SIP messages is identical to A501 and C503-E501 of Figures 5, 12, 13, 15, and 18 of the '427 Patent.

SIP Standard describes accepting an invitation to initiate a session by sending a 2xx response (e.g., the 200 (OK) message above). Ex1004, pp. 77-78. If the invitation is not accepted, “a 3xx, 4xx, 5xx or 6xx response is sent, depending on the reason for the rejection.” Ex1004, p. 78.

If a 6xx response, indicating that a request cannot be fulfilled, is received, the proxy server cancels all client pending transactions. Ex1004, p. 109, §5; p. 114, §10; p. 260; p. 29 §7.2; p. 192, §21.6. A 606 Not Acceptable response is generated when “[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.” Ex1004, p. 192, §21.6.4. The 606 Not Acceptable response may contain a Warning Header (Ex1004, p. 192, §21.6.4), one of which is Warning 370 (“*Insufficient bandwidth*”) indicating that “[t]he *bandwidth* specified in the session description or defined by the media exceeds that known to be available.” Ex1004, p. 182. Thus, when a proxy server receives a 606 Not Acceptable Response with Warning 370, the proxy server recognizes that there is insufficient communication

bandwidth to establish the session or transmit the requested media data, and thereafter cancels the process for establishing the session. Ex1008 ¶188.

SIP Standard thus teaches that the proxy servers execute a process for guaranteeing a communication bandwidth for transmitting content data by checking that the bandwidth specified in the session description defined by the media does not exceed the available bandwidth. SIP Standard also teaches that this process for guaranteeing a communication bandwidth is 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. Ex1008 ¶189.

SIP Standard therefore discloses a bandwidth guarantee process as discussed and claimed in the '427 Patent, including the sending of communication bandwidth information as well as communication channel specification information (the latter of which would occur, for example, through the “Via” header field in SIP). Ex1008 ¶190.

- (3) **SIP Standard and SDP Standard teaches transmitting media information “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.”**

As discussed above, SIP Standard teaches proxy servers that execute a process for guaranteeing communication bandwidth required for a media session as a process for establishing a connection based on a 200 (OK) message.

The body of a SIP message contains a description of the session that can be encoded in SDP. Ex1004, p. 13; *see also* Ex1005 p. 4, §3.1; p. 5. An SDP session description includes, among other information, the media comprising the session, information needed to receive those media, and communication bandwidth information in the form of “information about the **bandwidth** to be used by the session.” Ex1005, p 5; *see also id.*, p. 16, §5.8 (teaching the SDP description can include a bandwidth (“b=”) field that “denotes the proposed **bandwidth** to be used by the session or media.”).

At the time the purported invention was made, there were many well-known ways to insert media information pertaining to a requested media session in a SIP message, including in an SDP description. *See, e.g.*, Ex1005, pp. 1, 4, 5, 10, 12, 13, 21, 22, §§5.4, 5.5, 5.13, 5.14; Ex1008¶¶195-200. For example, SDP Standard describes an attribute field (“a=”) that can be used to tailor SDP to particular

applications or media, and that can contain references to external content. Ex1005, pp. 9, 21. SDP Standard also describes a session information field (“i=”) that can be used to provide textual information about a media session. Ex1005, p. 12. As a further example, SDP Standard teaches a URI field (“u=”) that can be used as a pointer to additional information about a media session. Ex1005, pp. 9, 13; Ex1008 ¶195.

As yet a further example, SIP Standard teaches a Content-Type header field that can be provided as a text string. Ex1004 p. 170 (“c: text/html; charset=ISO-8859-4”). The “Content-Type” header field specifies the format for a SIP message body (or sections of the body), which can be provided as plaintext. Ex1008 ¶196; *see also* Ex1003, p. 33 (citing RFC 2046).

Additionally or alternatively, SDP Standard teaches a media description field (“m=”) used to provide media names and transport addresses, thus specifying information about the media for the requested session. Ex1005, p. 8-9. An SDP description can contain a number of media descriptions. Ex1005, p. 22. A POSITA would have understood that multiple media description fields can be used to specify a media stream by using an order of the media description fields. Ex1008 ¶198 (quoting Ex1011 p. 3 (“*Another way of referring to a media stream is by using the order of the 'm' line in the SDP session document* (e.g., the 5th media stream in the session description)”). Thus, a POSITA would have understood that an ordering of

media description fields in an SDP description can be used to specify an order of media of a media stream. Ex1008 ¶198.

Additionally or alternatively, a POSITA would have understood that, at the time the purported invention was made, it was common practice to include proprietary or experimental fields in SIP headers to transmit implementation-specific or vendor-specific information. Ex1008 ¶199. The use of such “x-” and “p” prefixes in SIP headers was widely used to indicate extensions in Internet protocols. Ex1008 ¶199; *see also* Ex1004, p. 229 (“x-token” and “extension-token”). As such, a POSITA would have understood that information pertaining to the media session, such as information specifying the media to which the session pertains, could be inserted into a header of a SIP message using widely known techniques. Ex1008 ¶199.

Thus, SDP Standard teaches that an SDP description (and/or a SIP message carrying an SDP description) can contain **both** bandwidth information (*see, e.g.*, Ex1005, pp. 5, 16, §5.8) **and** information specifying the media (*see, e.g.*, Ex1005, pp. 1, 4, 5, 10, 12, 13, 21, 22, §§5.4, 5.5, 5.13, 5.14) pertaining to a requested session, such that both types of information are transmitted at the same time. Ex1005, p. 9 (showing both required and optional fields of an SDP description).

When combined with a proxy server of SIP Standard, the proxy server guarantees the communication bandwidth at the same time that the media

information is transmitted. Ex1008 ¶201. The proxy server receives a 200 (OK) SIP message containing bandwidth information and information specifying media content in the SDP descriptions (Ex1008 ¶201; Ex1005, pp. 1, 4, 5, 10, 12, 13, 16, 21, 22, §§5.4, 5.5, 5.8, 5.13, 5.14) and confirms the bandwidth does not exceed the available bandwidth (Ex1004, pp. 109, 181-182, 192, §5).

(4) Ueda combined with SIP Standard and SDP Standard teaches [1g].

It would have been obvious to a POSITA at the time the purported invention was made to insert Ueda's playlist into a SIP 200 (OK) message sent by the server 191 to the content providing device 150, either in the header or body of a SIP message or in an SPD description as information specifying the media to which the requested session pertains, along with information about the bandwidth to be used by the session (communication bandwidth information). Ex1008 ¶202.

A POSITA transmitting Ueda's playlist to user equipment would have been motivated to transmit the playlist according to the protocols provided in SIP and SDP Standards, given that Ueda's playlist characterizes the media session and prevents resource misuse if a separate connection were established solely to transmit the playlist. Ex1008 ¶203. As discussed above, a POSITA would have understood that there were many ways to include playlist information in a SIP message. Ex1008 ¶203. For example, in Figure 20, Ueda teaches a playlist in the form of a text string,

and a POSITA would have understood that SIP supports the transfer of such text strings in the SIP message, in either the header or body. Ex1008 ¶203. As another example, a POSITA would have recognized the common practice of including proprietary or experimental fields in SIP headers to transmit implementation-specific or vendor-specific information, and thus would have been motivated to insert Ueda's playlist in a proprietary or experimental SIP header field (e.g., "x-" or "p-" header field). Ex1008 ¶203. As a further example, it would have been obvious to a POSITA, at the time of the purported invention, to insert Ueda's playlist into any of the fields disclosed in SDP Standard for specifying information about the media pertaining to the media session (e.g., "a="; "u="; "i=" fields). Ex1008 ¶203. As yet a further example, it would have been obvious to a POSITA to specify Ueda's playlist as an ordered list of media field descriptions ("m="), thereby specifying a playlist in the SDP description. Ex1008 ¶203.

A POSITA would have understood that any one of these methods could be used, with a reasonable expectation of success, to transmit Ueda's playlist from the server 191 to the content providing device 150, given that Ueda's playlist characterizes the media session and prevents resource misuse if a separate connection were established solely to transmit the playlist. Ex1008 ¶204. Moreover, it would have been obvious to a POSITA, at the time the invention was made, to insert Ueda's playlist into the SPD description or the SIP header as information

specifying the media to which the requested session pertains, along with bandwidth information. Ex1008 ¶204. The result would be that (1) the proxy servers of SIP standard execute a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection at the same time as (2) the transmission of Ueda's playlist 402 via the proxy servers to Ueda's content providing device 150 by including the playlist 402 in the SDP description or SIP message. Ex1008 ¶204.

- h. **[1h]: “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”**

Ueda teaches [1h]. Ex1008 ¶¶206-210.

Ueda's playlist file 402 contains information for (1) identifying Movie Title #2 of the download request; and (2) specifying CM content 401 selected by server 191. *See, e.g.*, Ex1003, ¶¶0248, 0253-0254; *see also* Section IX.B.1.f, *supra*. Playlist file 402 indicates a sequence in which the movie and the commercial content 401 are output. *See, e.g.*, Ex1003 ¶¶0253-0254. Information for identifying the movie contained in the download request and specifying the commercial content selected

by server 191 thus is contained in playlist file 402, along with information indicating the sequence in which these contents are output. *See also, e.g.*, Ex1003 ¶¶0007 (“[t]he *playlist is a list stipulating the playback order* of contents”), ¶¶0009-0010, 0158-0159, 0193-0194, 0098, 0101, 0183, 0235, 0273, 0281, 0356, 0399-0405, 0424, 438, Figs. 20, 30.

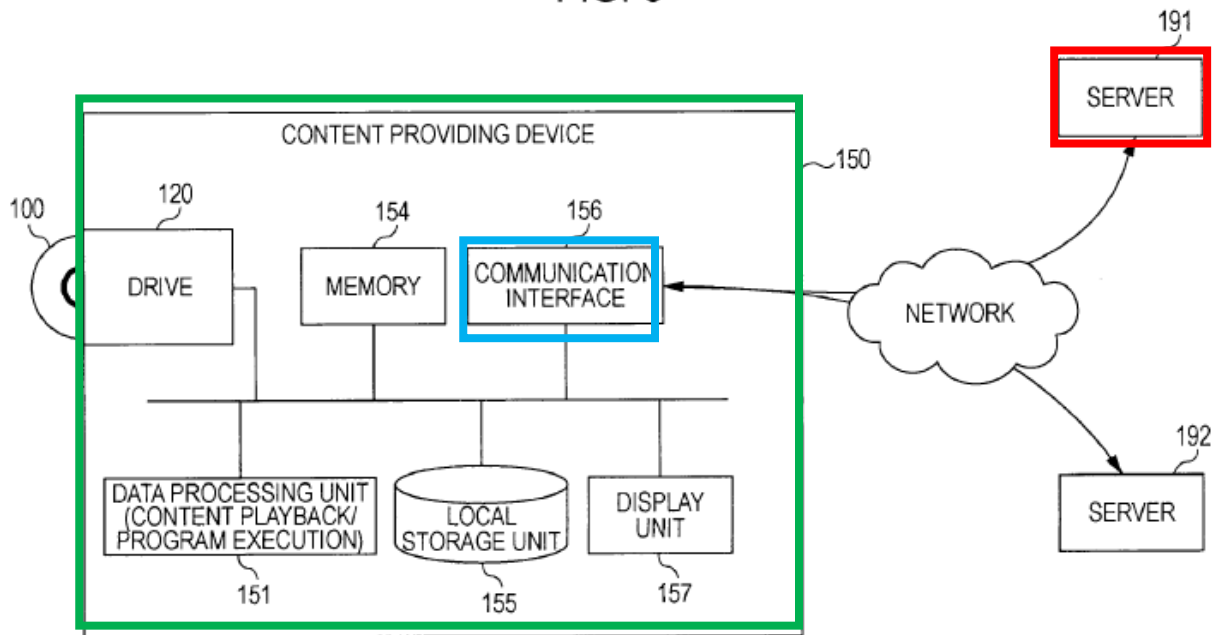
- i. **[1i]: “wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and output, based on the received main content data and sub content data, viewing content in which sub content represented by the sub content data is inserted in main content represented by the main content data.”**

Ueda teaches [1i]. Ex1008 ¶¶211-222.

- (1) **Figure 6 teaches user equipment comprising “a second receiver for receiving” data transmitted by the application server system.**

Figure 6 (reproduced below) teaches content providing device 150 (“**user equipment**”) comprises a communication interface 156 (“**receiver**”). Ex1003 ¶¶0118, Fig. 6. The communication interface 156 receives data transmitted by **the application server system** (server 191) through the network.

FIG. 6

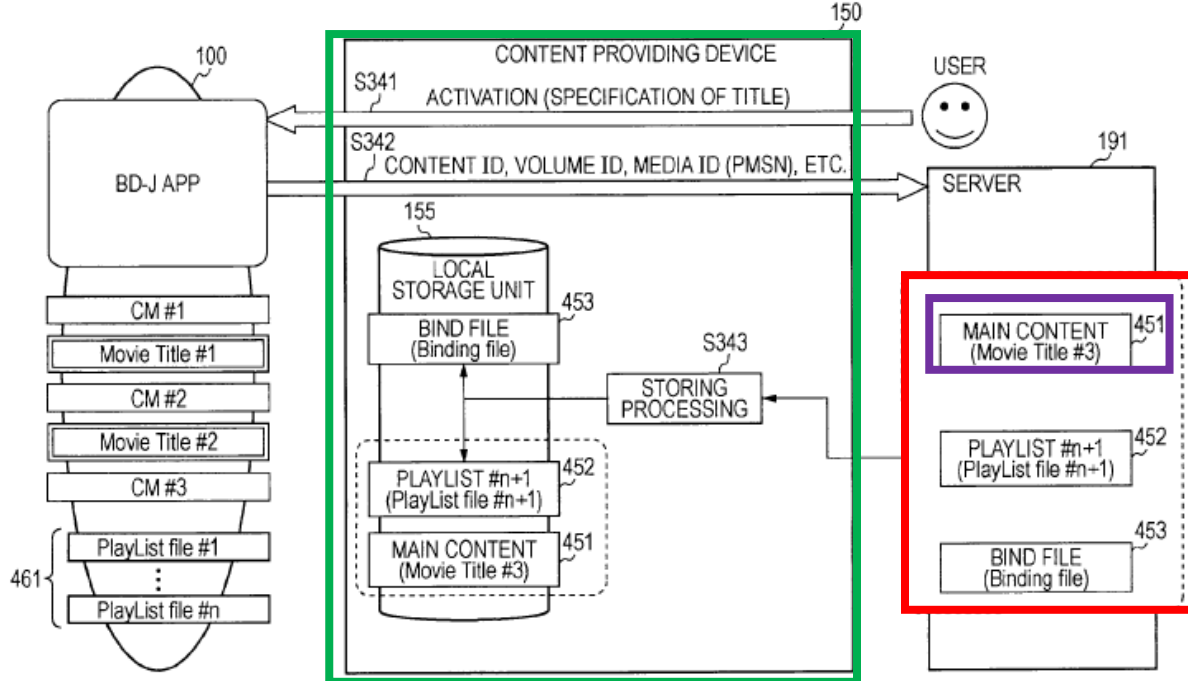


A POSITA would have understood that content providing device 150 in the other figures comprises the communication interface 156 shown in Figure 6. Ex1008 ¶213.

(2) Figure 19 teaches user equipment “receiving main content data...transmitted by the application server system.”

Ueda teaches that, after receiving the download request transmitted by the user equipment (content providing device 150), the application server system (server 191) transmits main content data identified by the request to content providing device 150. See, e.g., Ex1003 ¶¶0276-0279, 0370, Fig. 19. Figure 19 (reproduced below) shows transmission of main content, identified as “Movie Title #3,” from server 191 to content providing device 150.

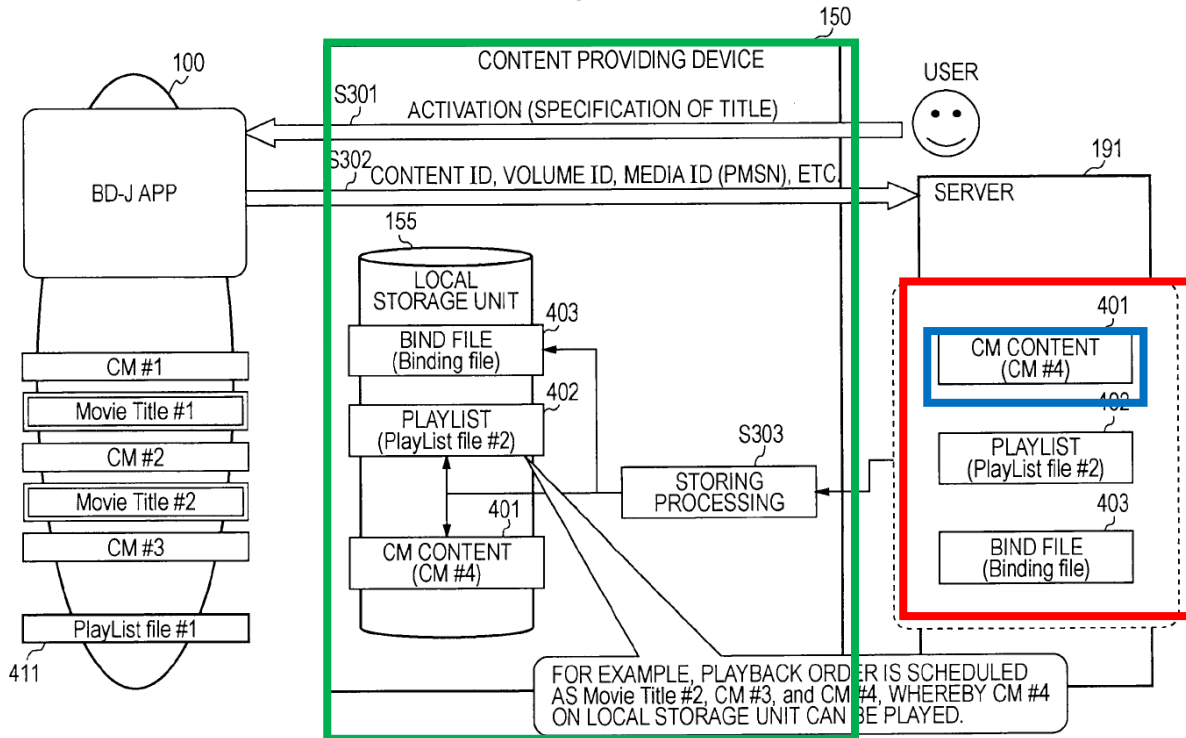
FIG. 19



(3) **Figures 17 and 30 teach user equipment “receiving...sub content data transmitted by the application server system.”**

Figure 17 (reproduced below) teaches that CM content 401 is “to be downloaded and obtained from the server 191” by content providing device 150. Ex1003 ¶0241; *see also id.* ¶¶0245, 0248. Ueda teaches “transmission data is the following data[:] (a) **commercial content (CM#4) 401**, (b) playlist file (PlayList file #2) 402, and (c) bind file (Binding file) 403.” Ex1003 ¶¶0244-0247. “The content providing device 150 receives the above-mentioned data from the server 191....” Ex1003 ¶0248.

FIG. 17



In connection with Figure 30, Ueda also teaches “[t]he server 191 selects a commercial content (CM #1) 641 which is a commercial content adapted to the determined user’s preference as a download content, and provides this to the content providing device 150.” Ex1003 ¶¶0438; *see also id.* ¶¶0413, 0439, 0443.

Ueda explicitly identifies commercial content as “sub content.” *See, e.g.,* Ex1003 ¶¶0119; *see also* Section IX.B.1.c. Thus, Ueda teaches that the **user equipment** (content providing device 150) receives **sub content data** (commercial content 401) transmitted by the **application server system** (server 191).

- (4) Ueda teaches user equipment “output[ting], 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.”

Ueda teaches that “[t]he *playlist is a list stipulating the playback order* of contents.” Ex1003 ¶0007; *see also, e.g.*, Section IX.B.1.h; Ex1003 ¶¶0009-0010, 0098, 0101, 0158-0159, 0183, 0193-0194, 0235, 0273, 0281, 0356, 0399-0405, Fig. 20.

Thus, where the playlist includes both main content (movie) data and sub content (commercial) data, the user equipment (content providing device 150) will output viewing content having a commercial inserted in the movie. *See, e.g.*, Ex1003 ¶¶0009-0010; *see also, e.g., id.* ¶¶0158-0159, 0163-0164, 0193-0198, 0253-0254, 0399-0405.

- (5) **Figures 17, 19 and 30 may be combined.**

As discussed above for [1b], a POSITA would understand that examples described in connection with Figures 17, 19 and 30 can be combined Ex1008 ¶220-221; Ex1003 ¶0239.

Ueda teaches [1i].

2. Claim 4 [preamble]: “The content delivery system according to claim 1, wherein.”

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. [4a]: “the memory is configured to store the sub content data in association with attribute information representing an attribute of sub content represented by the sub content data.”**

Ueda teaches [4a]. Ex1008 ¶¶224-228.

Figure 17 and, additionally or alternatively, Figure 30 teaches that server 191 comprises a memory configured to store sub content data representing sub content. *See* Sections IX.B.1.b, IX.B.1.c, *supra*.

Ueda’s user-preference and personal information contains attribute information representing an attribute of the commercial content. *See* Section IX.B.1.e, *supra*.

Ueda teaches the memory stores commercial content in association with this attribute information. Server 191 of Ueda “selects a commercial content (CM #1) 641 which is a commercial content adapted to the determined user’s preference as a download content.” Ex1003 ¶¶0438-0439; *see also* Section IX.B.1.d, *supra*. Thus, the attributes in the user-preference and personal information represent attributes of commercial content 641 selected by server 191. For server 191 to select commercial content based upon these attributes, the server’s memory must necessarily and

inherently store the commercial content data in association with the attributes. Otherwise, server 191 would not know which commercials to select. Ex1008 ¶227.

- b. **[4b]: “the selection information contains user basic information that is information for specifying the attribute information and is information associated with user identification information for identifying a user of the user equipment; and.”**

Ueda teaches [4b]. Ex1008 ¶¶229-233.

Ueda’s user-preference and personal information is selection information that contains user basic information specifying the attribute information. Ueda discloses that “the server receives *personal information from the client*, accumulates the personal information in the management database, and *selects a providing content employing the personal information.*” Ex1003 ¶0441; *see also id.* ¶¶0432, 0438, Fig. 30 (teaching that the user-preference and personal information is recorded in a part of server 191).

User-preference and personal information is used by server 191 to select commercial content based upon an attribute such that commercial content is provided adapted the user’s preference. Ex1003 ¶¶0439, 0440. These attributes closely resemble the “user basic information” defined in the ’427 Patent. *See* ’427 Patent, 9:14-20.

This user-preference and personal information is also information associated with user identification information for identifying a user of the user equipment.

See, e.g., Ex1003, Abstract, ¶¶0017, 0022-0023, 0028, 0031, 0441, 0147-0148, 0169, 0243, 0258, 0275, 0343, 0360, 0375, 0378-0382, 0386-0387, 0389, 0429, 0433-0437, 0485.

- c. **[4c]: “the processor is configured to select sub content data stored in association with the attribute information specified by the user basic information associated with the user identification information for identifying the user of the user equipment which has transmitted the content delivery request.”**

Ueda teaches [4c]. Ex1008 ¶¶234-239.

As discussed above for [4a], sub content data (commercial content data) is stored in association with the attribute information; the attribute information is specified by the user basic information, which in turn is associated with user identification information for identifying a user of the user equipment; and server 191 selects commercial content based upon an attribute. Ex1003 ¶¶0439-0441.

As discussed above for [1d], server 191 comprises a processor that analyzes the user's preference to selectively provide commercial content which interests. Ex1003, Abstract, ¶¶0017, 0019-0023, 0028, 0441-0443.

3. Claim 5 [preamble]: “The content delivery system according to claim 1, wherein.”

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. **[5a]: “the memory is configured to store the sub content data in association with attribute information representing an attribute of the sub content represented by the sub content data**

Ueda discloses teaches [5a]. *See* [4a]; Ex1008 ¶241.

- b. **[5b]: “the selection information contains content basic information that is information for specifying the attribute information and is information associated with the main content identification information for identifying the main content; and”**

Ueda teaches [5b]. Ex1008 ¶¶242-245.

Ueda’s selection information contains content basic information in the form of a “content ID” specifying attribute information, with the content basic information associated with main content identification information identifying main content. *See, e.g.*, Ex1003 ¶0424; *see* Ex1003 ¶¶0425-0429. Subsequently, “transmission request data set beforehand in the program, e.g.,...a **content ID**,...is transmitted to the server 191.” Ex1003 ¶¶0433-0437. This content ID is “content basic information” as recited in claim 5.

Based in part upon this content ID, which identifies the main content, server 191 “searches the recorded information of the user preference information management database 631..., and determines the preference of the user...” Ex1003 ¶0438. Server 191 then “selects a commercial content (CM #1) 641 which is a commercial content adapted to the determined user’s preference as a download

content, and provides this to the content providing device 150.” Ex1003 ¶0438; *see also id.* ¶0439.

- c. **[5c]: “the processor is configured to select sub content data stored in association with the attribute information specified by the content basic information associated with the main content identification information contained in the received content delivery request.**

Ueda teaches [5c]. Ex1008 ¶¶246-251.

As discussed above for [4a] and [5a], the sub content data (commercial content data) is stored in association with the attribute information.

As discussed above for [5b], this attribute information is specified by the content basic information (the content ID), which in turn is associated with main content identification information (the movie title) contained in the content delivery request received by server 191.

As discussed above for [5b], server 191 selects the commercial content based upon an attribute such as “cars,” “South Korean travel,” or “South Korean products.” Ex1003 ¶¶ 0439-0441.

As discussed above for [1d], Ueda discloses that server 191 comprises a processor in the form of a “data processing unit.” Ueda, Abstract, ¶¶0017, 0019-0023, 0028, 0441-0443.

4. **Claim 6 [preamble]: “The content delivery system according to claim 1, wherein”**

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. **[6a]: “the one or more connection control servers is configured to establish the connection by exchanging a predetermined connection establishment message with each of the user equipment and the application server system; and”**

SIP Standard teaches [6a]. *See* Ex1008 ¶¶253-256; Section IX.B.1.b.3, *supra*; Ex1004, pp. 1, 11-12, 15, 16, Fig. 1.

- b. **[6b]: “the first transmitter is configured to transmit the selected sub content specification information to the user equipment via the one or more connection control servers by incorporating the selected sub content specification information in the connection establishment message.”**

SIP Standard teaches [6b]. Ex1008 ¶¶257-259; *see also* Section IX.B.1.f, *supra*; Ex1004, p. 15., Ex1001, 15:49-63.

5. **Claim 7 [preamble]: “The content delivery system according to claim 1, wherein:”**

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. **[7a]: “the application server system comprises a service control server and a media server”**

Ueda teaches [7a]. Ex1008 ¶261-263; Sections IX.B.1.a, IX.B.1.c, IX.B.1.d, IX.B.1.f *supra*; Ex1003 ¶¶0122, 0151-0155, Figs. 7, 24.

- b. **[7b]: “the service control server comprises the memory for storing sub content data, the first receiver for receiving the content delivery request, and the first transmitter for transmitting the selected sub content specification information.”**

For the reasons discussed above for [7a], Ueda teaches [7b]. Ex1008 ¶264.

- 6. **Claim 8 [preamble]: “The content delivery system according to claim 1, wherein:”**

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. **[8a]: “the application server system comprises a service control server and a media server”**

For the reasons discussed above for [7a], Ueda teaches [8a]. Ex1008 ¶266.

- b. **[8b]: “the service control server comprises the memory for storing sub content data”**

For the reasons discussed above for [7a] and [7b], Ueda teaches [8b]. Ex1008

¶267; *see also*, Section IX.B.1.c, *supra*.

- c. **[8c]: “the media server comprises the memory, the processor, and the first transmitter”**

Ueda teaches [8c]. Ex1008 ¶268; *see also* Sections IX.B.1.c, IX.B.1.e, IX.B.1.f, *supra*.

- d. **[8d]: “the service control server further comprises a third transmitter for transmitting the selection information to the media server via the one or more connection control servers”**

Ueda in view of SIP Standard teaches [8d]. Ex1008 ¶¶269-274; *see also* Section IX.B.1.e, IX.B.6.c, *supra*; Ex1003 ¶¶0432, 0438, Fig. 30.

- e. **[8e]: “the media server further comprises a fifth receiver for receiving the selection information transmitted by the service control server; and”**

Ueda teaches [8e]. Ex1008 ¶¶275-276; *see also*, Section IX.B.6.d, *supra*.

- f. **[8f]: “the processor is configured to select the sub content data based on the received selection information.”**

Ueda teaches [8f]. *See* Section IX.B.1.e; Ex1008 ¶277.

- 7. **Claim 9 [preamble]: “The content delivery system according to claim 1, wherein:”**

Ueda combined with SIP Standard and SDP Standard discloses claim 1.

- a. **[9a]: “wherein the sub content is advertisement content.”**

As discussed above for [1c], Ueda teaches [9a]. Ex1008 ¶¶279-280.

8. Claim 14

Claim 14 recites a method counterpart of claim 1. Other than re-phrasing the elements of claim 1 as method steps, and re-phrasing the “memory” of claim 1 as a “storing device,” the elements of claim 14 are all included in claim 1.

Ueda teaches a “storing device” for the same reasons that it teaches a “memory” as discussed for [1c]. Ex1003 ¶0244. The invalidity analysis of claim 14 is subsumed within the invalidity analysis above for claim 1. Ueda combined with SIP Standard and SDP Standard teaches each element of claim 14. *See* Section IX.B.1; Ex1008 ¶282.

9. Claim 16 [preamble]: “The content delivery method according to claim 14, comprising.”

Ueda combined with SIP Standard and SDP Standard discloses claim 14.

- a. **[16a]: “receiving the main content data and the 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, by the user equipment.”**

For the reasons discussed above for [1i], Ueda teaches [16a]. Ex1008 ¶284.

10. Claims 18 & 22

Other than reciting a “[a] service control server” in the preamble, re-phrasing the “memory” of claim 1 as a “storing device”, and adding “sub-content data preliminary stored in a storing device”, claims 18 and 22 are substantively similar to claim 1. These changes do not alter the invalidity analysis of claims 18 and 22 and are subsumed within the invalidity analysis for claim 1.

The server control server of the ‘427 Patent performs the same functionality as the application server system of claim 1, and thus as discussed for [1a] to the extent that the preamble is limiting, Ueda teaches it. Ex1008 ¶286. As discussed for claim 14, Ueda discloses a “storing device.”

Ueda combined with SIP Standard and SDP Standard discloses claims 18 and 22. Ex1008 ¶¶286-287; *see also* Section IX.B.1, *supra*.

11. Claim 20

Claim 20 is substantively identical to claim 1, except for minor changes like adding a comma, deleting a “the,” and replacing “output” with “outputting.” These changes do not alter the invalidity analysis. Ueda combined with SIP Standard and SDP Standard discloses claim 20. *See* Section IX.B.1, *supra*; Ex1008 ¶¶288-289.

12. Claim 32

For the reasons above (*see* Section IX.B.1-IX.B.3), Ueda combined with SIP Standard and SDP Standard discloses [preamble]; [32a] (*see* [1a]); [32b] (*see* [1b]); [32c] (*see* [1d]); [32d] (*see* [4c] and [5c]); [32e] (*see* [1f]); [32f] (*see* [1g]); [32g] (*see* [1h]). Ex1008 ¶¶290-294.

13. Claim 34

Claim 34 recites a method counterpart of claim 32. For the reasons above (*see* Section IX.B.12), Ueda combined with SIP Standard and SDP Standard discloses claim 34. Ex1008 ¶¶295-296.

14. Claim 35

To the extent the [preamble] is limiting, Ueda teaches it. Ex1008 ¶¶297-298.

For the reasons above (*see* Section IX.B.1-IX.B.3), Ueda combined with SIP Standard and SDP Standard discloses [35a] (*see* [1b], [1d]); [35b] (*see* [5c]); [35c] (*see* [1f]); [35d] (*see* [1g]); [35e] (*see* [1h]). Ex1008 ¶¶297-298.

15. Claim 36

To the extent that the [preamble] is limiting, Ueda teaches it. *See* Section IX.B.10; Ex1008 ¶299.

For the reasons above (*see* Section IX.B.1-IX.B.3), Ueda combined with SIP Standard and SDP Standard discloses [36a] (*see* [1b], [1d]); [36b] (*see* [5c]); [36c] (*see* [1f]); [36d] (*see* [1g]); [36e] (*see* [1h]). Ex1008 ¶298.

C. Ground 2

Ueda combined with SIP Standard and Bechtolsheim renders obvious claims 1, 4-9, 14, 16, 18, 20, 22, 32 and 34-36.

1. Claims 1, 14, 18, 20, 22, 32, 34-36

Ueda combined with SIP Standard discloses the elements of claims 1, 14, 18, 20, 22, and 34-36, except for [1g], [14f], [18d], [20g], [22d], [32f], [34d], [35d], [36d]. Ex1008 ¶301.

- a. [1g], [14f], [18d], [20g], [22d], [32f], [34d], [35d], [36d]: “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 one or more connection control servers to the user equipment which has transmitted the content delivery request”

Ueda combined with SIP Standard and Bechtolsheim teaches [1g], [14f], [18d], [20g], [22d], [32f], [34d], [35d], [36d]. Ex1008 ¶¶302-311.

As discussed above for [1g(1)], Ueda in view of SIP Standard teaches a first transmitter that transmits play-list information via one or more connection control servers to user equipment which has transmitted the content delivery request.

As discussed above for [1g(2)], SIP Standard teaches the proxy servers execute a process for guaranteeing a communication bandwidth required for a media session as a process for establishing the connection. *See* Ex1004, 109, §5; pp. 181-182.

- (1) **Bechtolsheim teaches transmitting the play-list information “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.”**

Figure 1 (reproduced below) teaches cable television system 10 (“content delivery system”). Ex1006 ¶0017, Fig. 1. The cable television system 10 comprises content on demand (COD) application server 160 (“**application server system**”) and a stream system 130 (“**connection control server**”). Ex1006 ¶¶0023-0024, Fig. 1. Stream system 130 includes a switch unit 135 that establishes a connection with a set top box (STB) 120 (“**user equipment**”). Ex1006 ¶¶0023, 0046, Fig. 1. COD application server 160 comprises a receiver for receiving a content delivery request transmitted by STB 120 containing main content identification information for identifying a movie. Ex1006 ¶0064, Fig. 4 (410). Collectively, stream system 130 and COD application server 160 comprise a memory (media storage 140) for storing the movie and sub content data representing “advertising suitable for a particular subscriber based on subscriber profile, operator policy and even subscriber

immediate behavior.” Ex1006 ¶0027; *see also id.* ¶¶0033, 0050, 0057, 0064-0065, 0067, Figs. 1, 2.

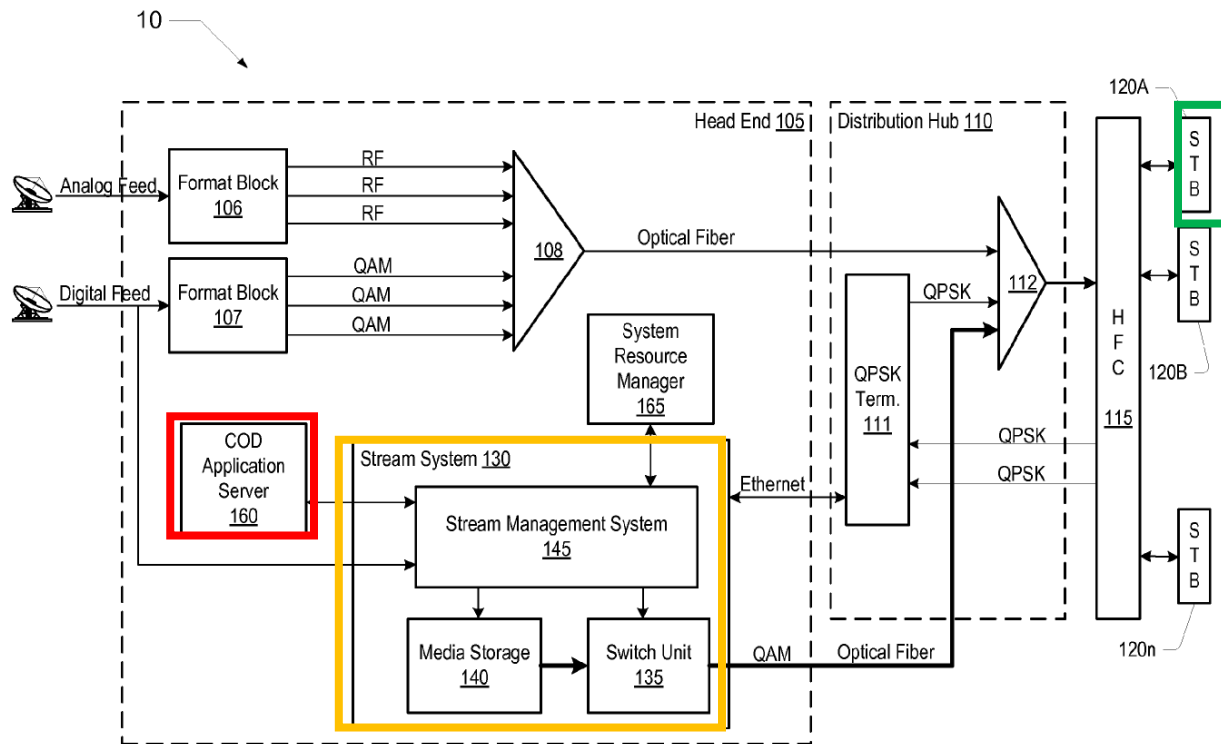


FIG. 1

The switch unit 135 puts together a playlist of the content segments for a movie, with the content segments specifying chapters of the movie and commercials. Ex1006 ¶0033.

At the same time that the playlist is put together, stream system 130 executes a process for guaranteeing a communication bandwidth for transmitting content data. Ex1006 ¶0034. The output of this process “is a metadata file and one or more files of block data.” Ex1006 ¶0034. The metadata file includes “the list of video segments

in the title,” thus the metadata file is a playlist. “The metadata for each segment may include timing information for the segment as a whole (e.g., *bandwidth requirements* and duration).” Ex1006 ¶0034. The bandwidth requirements for each segment are determined at the same time that the playlist is prepared by stream system 130. The stream system 130 then executes a process for guaranteeing this bandwidth. Ex1006 ¶0038 (“*If this target bandwidth is too small, the import preprocessor 148 may be configured to issue warnings and drop data* in order to meet the schedule.”), ¶0049.

Bechtolsheim thus teaches transmitting play-list information “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.”

(2) **Ueda combined with SIP Standard and Bechtolsheim teaches [1g], [14f], [18d], [20g], [22d], [32f], [34d], [35d], [36d].**

A POSITA would have been motivated (*see* Section IX.A) to combine Ueda, SIP standard, and Bechtolsheim so that (1) the proxy servers of SIP standard execute a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection (Ex1004 pp. 1, 9, 11, 12, 15, 16, 35, 37, §13, Fig. 1, combined with Ex1006 ¶¶0033-0034, 0038, 0049); at the

same time with (2) Ueda's server 191 transmitting playlist 402 via proxy servers of SIP Standard to Ueda's content providing device 150. Ex1008 ¶¶310.

2. Claims 4-9

Each of claims 4-9 depends from claim 1. As discussed above, Ueda combined with SIP Standard and Bechtolsheim discloses claim 1, and therefore disclose the preambles of claims 4-9.

Further, as discussed above for claims 4, 5 and 7-9 (*see* Sections IX.B.2, IX.B.3, and IX.B.5-IX.B.7), Ueda teaches the individual elements of each of these claims and thus renders these claims obvious in combination with SIP Standard and Bechtolsheim.

As discussed above for claim 6 (*see* Section IX.B.4), Ueda combined with SIP standard discloses the individual elements of this claim and thus renders this claim obvious in combination with Bechtolsheim.

3. Claim 16

Ueda combined with SIP Standard and Bechtolsheim discloses the content delivery method according to claim 14.

As discussed above for claim 16 under Ground 1 (*see* Section IX.B.9), Ueda teaches the elements of claim 16.

D. Grounds 3 & 4

Ueda combined with SIP Standard, SDP Standard/Bechtolsheim, and Cohee renders obvious claims 2, 3, 15, and 17.

1. Claim 2 [preamble]: “The content delivery system according to claim 1, wherein:”

Ueda combined with SIP Standard and SDP Standard/Bechtolsheim discloses claim 1.

a. [2a]: “the user equipment comprises: a third receiver for receiving the selected sub content specification information transmitted by the application server system; and”

Ueda teaches [2a]. Ex1008 ¶¶319-321.

Ueda teaches that application server 191 transmits selected sub content specification information to content providing device 150 (“user equipment”). *See* Section IX.B.1.f.

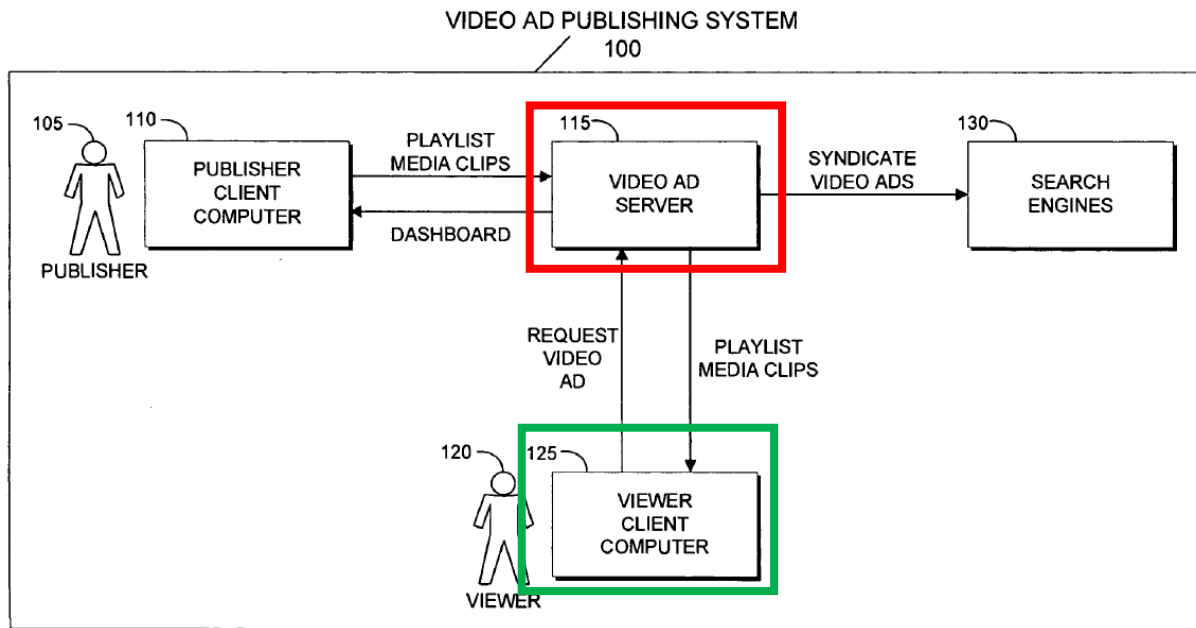
A POSITA would have understood that content providing device 150 of Ueda comprises a communication interface or receiver. Ex1008 ¶321; *see also* Section IX.B.1.i.

- b. **[2b]: “a second transmitter for transmitting, to the application server system, a main content viewing request containing the main content identification information and an sub content viewing request containing the received selected sub content specification information when connection with the application server system is established by the one or more connection control servers, and”**

Ueda combined with Cohee teaches [2b]. Ex1008 ¶¶322-334.

- (1) **Cohee teaches “transmitting, to the application server system, a main content viewing request containing the main content identification information and an [sic] sub content viewing request containing the received selected sub content specification information when connection with the application server system is established . . .”**

Figure 1 (reproduced below) teaches video ad publishing system 100 (“content delivery system”) including viewer client computer 125 (“**user equipment**”) connected to video ad server 115 (“**application server system**”) for downloading playlists and media clips. Ex1007 ¶¶0037, 0074, Figs. 1 , 5, 7 and 8.



Cohee's playlist includes instructions for rendering separately stored media clips together with information such as text overlays and timing. Ex1007 ¶¶0032, 0037, 0053-0054, 0057, 0063.

Viewer client computer 125 ("user equipment") transmits, to video ad server 115 ("application server system"), a media file request ("content viewing request") containing a reference to a media clip/file ("content identification information"), when a connection is established therebetween. *See, e.g.*, Ex1007 ¶¶0057, 0063, Figs. 4 (435), 5, 6 (625).

References to "one or more media clips" contained in the playlist (*see* Ex1007 ¶¶0035) can be considered to be "main content identification information," as recited in claim 2, while references to other media clips contained in the playlist (*see* Ex1007

¶0035) can be considered to be “sub content specification information,” as recited in claim 2.⁴ Ex1008 ¶327-328.

As such, Cohee teaches viewer client computer 125 (“user equipment”) transmits, to video ad server 115 (“application server system”), a main media file request (“main content viewing request”) containing a reference to a media clip or media file (“main content identification information”) and a sub media file request (“sub content viewing request”) containing a reference to a media clip/file (“sub content specification information”) when a connection is established therebetween. *See also*, Ex1007 ¶¶0057, 0060-0063, Figs. 4, 6 (600, 605 and 625-635).

(2) Ueda teaches “connection with application server system is established by the one or more connection control servers”

Ueda teaches a connection control server that establishes a connection between the user equipment and the application server system. *See* Section IX.B.1.b

⁴ Cohee’s playlist is not a sequential playlist as required by the claims of the ’427 Patent. Petitioner is not relying on Cohee for “sub content data is inserted in main content.” Ueda is used herein as teaching the playlist and insertion of sub content into main content. *See* Section IX.B.1, *supra*.

(3) Ueda teaches “the user equipment comprises: a second transmitter...”

Ueda teaches that content providing device 150 includes a transmitter in the form of “a communication interface 156 for executing communication through a network.” Ex1008 ¶333; *see also* Ex1003 ¶0118, Fig. 6.

(4) Ueda combined with Cohee teaches [2b].

A POSITA would have been motivated (*see* Section IX.A) to combine Ueda and Cohee so that Ueda’s content providing device 150 transmits, to Ueda’s server 191, a main content viewing request (Ex1007 ¶¶0060-0063, 0057, Fig. 6) containing main content identification information and a sub content viewing request containing the received selected sub content specification information (Ex1007 ¶¶0060-0063, 0057, Fig. 6), when connection between the Ueda’s content providing device 150 and server 191 is established. Ex1008 ¶334.

- c. **[2c]: “receiving the main content viewing request transmitted by the user equipment and transmitting main content data identified by main content identification information contained in the received main content viewing request to the user equipment, and receiving the sub content viewing request transmitted by the user equipment and transmitting sub content data specified by selected sub content specification information contained in the received sub content viewing request to the user equipment, by the application server system.”**

Ueda combined with Cohee teaches [2c]. Ex1008 ¶¶336-341.

- (1) **Ueda in view of Cohee teaches “receiving the main content viewing request transmitted by the user equipment..., and receiving the sub content viewing request transmitted by the user equipment..., by the application server system”**

Ueda in view of Cohee teaches receiving the main content viewing request transmitted by the user equipment. *See* Section IX.D.1.b.

- (2) **Ueda in view of Cohee teaches “transmitting main content data identified by main content identification information contained in the received main content viewing request to the user equipment, and . . . transmitting sub content data specified by selected sub content specification information contained in the received sub content viewing request to the user equipment, by the application server system”**

Cohee’s viewer client computer 125 requests each media file referenced in a playlist. *See* Section IX.D.1.b; Ex1007 ¶0063, Fig. 6 (635); *id.*, Ex1007 ¶0057. Video ad server 115 transmits each media file in response to the request from viewer client computer 125. Ex1007 ¶0063, Fig. 6 (635).

As discussed above, Ueda in view of Cohee teaches receiving the main content viewing request and the sub content viewing request. The transmitted media files as taught in Cohee may be considered to be both “main content data identified by main content identification information contained in the received main content viewing request” and “sub content data specified by selected sub content

specification information contained in the received sub content viewing request.”
Ex1008 ¶339.

(3) Ueda combined with Cohee teaches [2c].

A POSITA would have been motivated (*see* Section IX.A) to combine Ueda with Cohee so that Ueda’s server 191 transmits, to content providing device 150, main content data (Ex1003 ¶¶0276-0279, 0370, Fig. 19) and sub content data (Ex1003 ¶¶119, 0241, 0245, 0248) identified by main content identification information contained in the received main content viewing request and by the sub content identification information specified by selected sub content specification information contained in the received sub content viewing request (Ex1007 ¶¶0060-0063, 0057, Fig. 6). Ex1008 ¶340.

2. Claim 3 [preamble]: “The content delivery system according to claim 1, wherein:”

Ueda combined with SIP Standard and SDP Standard/ Bechtolsheim discloses claim 1.

a. [3a]: “the third receiver is configured to receive the play-list information transmitted by the application server system; and”

For the reasons discussed above for [2a], Ueda teaches [3a].

- b. **[3b]: “the second transmitter is configured to transmit the main content viewing request and the sub content viewing request to the application server system, based on the received play-list information.”**

For the reasons discussed above for [2b], Ueda in view of Cohee teaches [3b].

3. Claims 15 and 17

Claims 15 and 17 depend from claim 14. Ueda combined with SIP Standard and SDP Standard/Bechtolsheim discloses claim 14, and therefore discloses the preambles of claims 15 and 17.

Claims 15 and 17 are method counterpart claims of claims 2 and 3, respectively. Other than re-phrasing the elements of claims 2 and 3 as method steps, the elements of claims 15 and 17 are all included in claims 2 and 3, respectively. The invalidity analyses of claims 15 and 17 are subsumed within the invalidity analyses above for claims 2 and 3. For the reasons set forth for claims 2 and 3 above, Ueda combined with SIP Standard, SDP Standard, and Cohee teaches each element of claims 15 and 17.

X. NO OBJECTIVE INDICIA OF NON-OBVIOUSNESS

Petitioner is unaware of any secondary considerations of non-obviousness.

XI. CONCLUSION

The Challenged Claims of the '427 Patent are rendered obvious for the reasons set forth above. There is a reasonable likelihood that Petitioner will prevail

as to each of these claims. Petitioner accordingly requests IPR and cancellation of the Challenged Claims.

Respectfully submitted,

Dated: July 27, 2023 /Darren M. Franklin/

Darren M. Franklin (Registration No. 51,701)
Daniel N. Yannuzzi (Registration No. 36,727)
Mark W. Catanese (Reg. No. 64,279)
SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
333 South Hope Street, 43rd Floor
Los Angeles, California 90071-1422
Telephone: 213.620.1780
Facsimile: 213.620.1398

dfranklin@sheppardmullin.com
dyannuzzi@sheppardmullin.com
mcatanese@sheppardmullin.com

Counsel for Petitioner
PELOTON INTERACTIVE, INC.

CLAIM APPENDIX

[Preamble] 1. A content delivery system comprising [1a] an application server system and [1b] one or more connection control servers,

the one or more connection control servers being configured to receive equipment specification information transmitted by a user equipment and establish a connection between the application server system and the user equipment based on the received equipment specification information,

[1c] the application server system comprising:

a memory for storing sub content data representing sub content and main content data representing main content;

[1d] a first receiver for receiving a content delivery request transmitted by the user equipment and containing main content identification information for identifying the main content;

[1e] a processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content; and

[1f] a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [1g] 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 one or more connection control servers to the user equipment which has transmitted the content delivery request, [1h] 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,

[1i] wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and output, 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.

[Preamble] 2. The content delivery system according to claim 1, wherein:

[2a] the user equipment comprises:

a third receiver for receiving the selected sub content specification information transmitted by the application server system; and

[2b] a second transmitter for transmitting, to the application server system, a main content viewing request containing the main content identification information and an sub content viewing request containing the received selected sub content specification information when connection with the application server system is established by the one or more connection control servers, and

[2c] the application server system comprises a fourth receiver for receiving the main content viewing request transmitted by the user equipment and transmitting main content data identified by the main content identification information contained in the received main content viewing request to the user equipment, and for receiving the sub content viewing request transmitted by the user equipment and transmitting sub content data specified by the selected sub content specification information contained in the received sub content viewing request to the user equipment.

[Preamble] 3. The content delivery system according to claim 1, wherein:

[3a] the third receiver is configured to receive the play-list information transmitted by the application server system; and

[3b] the second transmitter is configured to transmit the main content viewing request and the sub content viewing request to the application server system, based on the received play-list information.

[Preamble] 4. The content delivery system according to claim 1, wherein:

[4a] the memory is configured to store the sub content data in association with attribute information representing an attribute of sub content represented by the sub content data;

[4b] the selection information contains user basic information that is information for specifying the attribute information and is information associated with user identification information for identifying a user of the user equipment; and

[4c] the processor is configured to select sub content data stored in association with the attribute information specified by the user basic information associated with the user identification information for identifying the user of the user equipment which has transmitted the content delivery request.

[Preamble] 5. The content delivery system according to claim 1, wherein:

[5a] the memory is configured to store the sub content data in association with attribute information representing an attribute of the sub content represented by the sub content data;

[5b] the selection information contains content basic information that is information for specifying the attribute information and is information associated with the main content identification information for identifying the main content; and

[5c] the processor is configured to select sub content data stored in association with the attribute information specified by the content basic information associated with the main content identification information contained in the received content delivery request.

[Preamble] 6. The content delivery system according to claim 1, wherein

[6a] the one or more connection control servers is configured to establish the connection by exchanging a predetermined connection establishment message with each of the user equipment and the application server system; and

[6b] the first transmitter is configured to transmit the selected sub content specification information to the user equipment via the one or more connection control servers by incorporating the selected sub content specification information in the connection establishment message.

[Preamble] 7. The content delivery system according to claim 1, wherein:

[7a] the application server system comprises a service control server and a media server; and

[7b] the service control server comprises the memory for storing sub content data, the first receiver for receiving the content delivery request, and the first transmitter for transmitting the selected sub content specification information.

[Preamble] 8. The content delivery system according to claim 1, wherein:

[8a] the application server system comprises a service control server and a media server;

[8b] the service control server comprises the memory for storing sub content data;

[8c] the media server comprises the memory, the processor, and the first transmitter;

[8d] the service control server further comprises a third transmitter for transmitting the selection information to the media server via the one or more connection control servers;

[8e] the media server further comprises a fifth receiver for receiving the selection information transmitted by the service control server; and

[8f] the processor is configured to select the sub content data based on the received selection information.

[Preamble] 9. The content delivery system according to claim 1, wherein [9a] the sub content is advertisement content.

[Preamble] 14. A content delivery method comprising:

[14a] receiving equipment specification information transmitted by user equipment and establishing connection between an application server system and the user equipment based on the received equipment specification information, by one or more connection control servers;

[14b] receiving a content delivery request containing main content identification information for identifying main content and transmitted by the user equipment, by the application server system;

[14c] selecting sub content data stored in a storing device for storing sub content data representing sub content and main content data representing main content, based on selection information containing attribute information representing an attribute of sub content;

[14d] transmitting selected sub content specification information specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, by the application server system; and

[14e] 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, transmitting the play-list information via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [14f] 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, by the application server system,

[14g] 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.

[Preamble] 15. The content delivery method according to claim 14, comprising:

[15a] receiving the selected sub content specification information transmitted by the application server system, by the user equipment;

[15b] transmitting, to the application server system, a main content viewing request containing the main content identification information and an sub content viewing request containing the received selected sub content specification information, by the user equipment, when connection between the user equipment

and the application server system is established by the one or more connection control servers; and

[15c] receiving the main content viewing request transmitted by the user equipment and transmitting main content data identified by main content identification information contained in the received main content viewing request to the user equipment, and receiving the sub content viewing request transmitted by the user equipment and transmitting sub content data specified by selected sub content specification information contained in the received sub content viewing request to the user equipment, by the application server system.

[Preamble] 16. The content delivery method according to claim 14, comprising:

[16a] receiving the main content data and the 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, by the user equipment.

[Preamble] 17. The content delivery method according to claim 14, comprising:

[17a] receiving the play-list information transmitted by the application server system, by the user equipment; and

[17b] transmitting the main content viewing request and the sub content viewing request to the application server system based on the received play-list information, by the user equipment.

[Preamble] 18. A service control server comprising:

[18a] a first receiver for receiving a content delivery request containing main content identification information for identifying main content and transmitted by a user equipment via a one or more connection control servers establishing connection between a media server and the user equipment;

[18b] an processor for selecting sub content data preliminarily stored in a storing device, based on selection information containing attribute information representing an attribute of sub content; and

[18c] a first transmitter for transmitting selected sub content specification information specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, wherein

[18d] 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 one or more connection control servers to the user equipment which has transmitted the content delivery request, [18e] 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,

[18f] 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.

[Preamble] 20. A content delivery system comprising [20a]an application server system and [20b]one or more connection control servers,

the one or more connection control servers being configured to receive equipment specification information transmitted by user equipment and establish

connection between the application server system and this user equipment based on the received equipment specification information,

[20c] the application server system comprising:

a memory for storing sub content data representing sub content and main content data representing main content;

[20d] a first receiver for receiving, a content delivery request transmitted by the user equipment and containing main content identification information for identifying the main content;

[20e] a processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content; and

[20f] a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, wherein the first transmitter is configured to, [20g] 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 one or more connection control servers to the user equipment which has transmitted the content delivery request, [20h] 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,

[20i] 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.

[Preamble] 22. A service control server comprising:

[22a] a first receiver for receiving a content delivery request containing main content identification information for identifying main content and transmitted by user equipment, via a one or more connection control servers establishing connection between a media server and the user equipment;

[22b] a processor for selecting sub content data preliminarily stored in a storing device based on selection information containing attribute information representing an attribute of sub content; and

[22c] a first transmitter for transmitting selected sub content specification information specifying the selected sub content data, via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [22d] 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 one or more connection control servers to the user equipment which has transmitted the content delivery request, [22e] 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,

[22f] 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.

[Preamble] 32. A content delivery system comprising [32a] an application server system and [32b] one or more connection control servers,

the one or more connection control servers being configured to receive user identification information transmitted by user equipment and establish connection between the application server system and this user equipment based on the received user identification information,

[32c] the application server system comprising:

a first receiver for receiving a content delivery request transmitted by the user equipment and containing main content identification information for identifying the main content, via the one or more connection control servers;

[32d] a processor for selecting the sub content data based on user basic information or the main content identification information, the user basic information being associated with the user identification information for identifying a user of the user equipment having transmitted the content delivery request, and the main content identification information being contained by the content delivery request; and

[32e] a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [32f] 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 one or more connection control servers to the user equipment which has transmitted the content delivery request, [32g] 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.

[Preamble] 34. A content delivery method comprising:

[34a] receiving user identification information transmitted by user equipment and establishing connection between an application server system and the user equipment based on the received user identification information, by one or more connection control servers;

[34b] receiving a content delivery request containing main content identification information for identifying main content and transmitted by the user equipment, via the one or more connection control servers, by the application server system;

[34c] selecting sub content data representing sub content based on user basic information or the main content identification information, the user basic information being associated with the user identification information for identifying a user of the user equipment having transmitted the content delivery request, and the main content identification information being contained by the content delivery request; and

[34d] 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, transmitting the play-list information via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [34e] the play-list information being information containing the main content identification information contained in the content delivery request and selected sub content specification information specifying the selected sub content data, 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, by the application server system.

[Preamble] 35. A non-transitory computer-readable medium storing a program comprising instructions for causing a service control server to realize:

[35a] a first receiver for receiving a content delivery request containing main content identification information for identifying main content and transmitted by a user equipment via one or more connection control servers establishing connection between a media server and the user equipment;

[35b] a processor for selecting sub content data based on content basic information associated with the main content identification information contained by the content delivery request; and

[35c] a first transmitter for transmitting selected sub content specification information specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [35d] wherein the first transmitter for, 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, transmitting the play-list information via the one or more connection control servers to the user equipment which has transmitted the content delivery request, [35e] 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.

[Preamble] 36. A service control server comprising:

[36a] a first receiver for receiving a content delivery request containing main content identification information for identifying main content and transmitted by a user equipment via one or more connection control servers establishing connection between a media server and the user equipment;

[36b] a processor for selecting sub content data based on content basic information associated with the main content identification information contained by the content delivery request; and

[36c] a first transmitter for transmitting selected sub content specification information specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, *[36d]* 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, *[36e]* transmit the play-list information via the one or more connection control servers to the user equipment which has transmitted the

content delivery request, 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.

CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. §42.24(D)

Pursuant to 37 C.F.R. §42.24(d), I certify that the foregoing complies with the type-volume limitation of 37 C.F.R. §42.24 and contains 13,998 words based on the word count indicated by the word-processing system used to prepare the paper, and excluding those portions exempted by §42.24(a).

Date: July 27, 2023

Sheppard, Mullin, Richter & Hampton
333 South Hope Street, 43rd Floor
Los Angeles, California 90071-1422
Telephone: 213.620.1780
Facsimile: 213.620.1398

/Darren M. Franklin/

Darren M. Franklin (Reg. No. 51,701)

Counsel for Petitioner
PELOTON INTERACTIVE, INC.

dfranklin@sheppardmullin.com

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6 and 42.105, I hereby certify that on July 27, 2023, the foregoing Petition for IPR of U.S. Patent No. 9,769,427 and Exhibits 1001-1016 were served in their entirety by overnight Federal Express on the following correspondence address of record for Patent Owner:

71799 - NEC-IPC
2000 Pennsylvania Ave., NW, Suite 9000
Washington, DC 20006

A courtesy copy was provided to Patent Owner's litigation counsel:

Kenneth L. Dorsney, Esq.
Cortlan S. Hitch, Esq.
MORRIS JAMES LLP
500 Delaware Avenue, Suite 1500
Wilmington, Delaware 19801-1494

Robert L. Maier, Esq.
Jennifer C. Tempesta, Esq.
Nick Palmieri, Esq.
Michael E. Knierim, Esq.
BAKER BOTTS L.L.P.
30 Rockefeller Plaza
New York, New York 10112

Date: July 27, 2023

/Darren M. Franklin/
Darren M. Franklin (Reg. No. 51,701)

Sheppard, Mullin, Richter & Hampton
333 South Hope Street, 43rd Floor
Los Angeles, California 90071-1422
Telephone: 213.620.1780
Facsimile: 213.620.1398
dfranklin@sheppardmullin.com

Counsel for Petitioner
PELTON INTERACTIVE, INC.