

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

**DECLARATION OF CLIFFORD READER, PH.D. IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,769,427**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on July 25, 2023, in ESCONDIDO, California.



Clifford Reader, Ph.D.

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I. INTRODUCTION

1. My name is Clifford Reader. I am making this declaration as a technical expert at the request of Petitioner Peloton Interactive, Inc. (“Petitioner”) in support of Petitioner’s petition for *inter partes* review of U.S. Patent No. 9,769,427 (“the ’427 Patent,” Ex1001).

2. I am being compensated for my work in this matter at my standard hourly rate of \$750 for consulting services. My compensation in no way depends on the outcome of this proceeding or the content of my testimony. I have no financial interest in or affiliation with the Petitioner or the patent owner, which I understand is NEC Corporation (“Patent Owner”).

3. In preparing this declaration, I considered the following materials, which I am informed are also identified in the petitions.

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”)

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
Ex1005	M. Handley et al., SDP: Session Description Protocol (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”).
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)
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.

4. I understand that the ’427 Patent issued from U.S. Patent Application No. 13/129,756, filed on May 17, 2011. I also understand that the application was a national-stage filing of Patent Cooperation Treaty Application No. PCT/JP2009/006140, filed on November 17, 2009, and claimed priority to Japanese Patent Application No. 2008-294270, filed on November 18, 2008. I have been asked to treat November 18, 2008 as the effective filing date of the ’427 Patent.

5. I am informed by counsel that Petitioner is requesting *inter partes* review and cancellation of claims 1-9, 14-18, 22, 20, 32, and 34-36 (the “Challenged Claims”) of the ’427 Patent on the following grounds:

Ground	Basis	Prior-Art References	Claims Challenged
1	§ 103	Ueda (Ex1003) in view of SIP Standard (Ex1004) and further in view of SDP Standard (Ex1005)	1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36
2	§ 103	Ueda in view of SIP Standard and further in view of Bechtolsheim (Ex1006)	1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36
3	§ 103	Ueda in view of SIP Standard in further view of SDP Standard and further in view of Cohee (Ex1007)	2, 3, 15 and 17
4	§ 103	Ueda in view of SIP Standard and further in view of Bechtolsheim and further in view of Cohee	2, 3, 15 and 17

6. I am also informed by counsel that the ’427 Patent is presently the subject of a patent infringement lawsuit brought by the assignee, NEC Corporation, against Petitioner and captioned *NEC Corp. v. Peloton Interactive, Inc.*, No. 1:22-cv-00987-CFC (U.S. District Court, District of Delaware, filed July 28, 2022) (the “**Related Litigation**”).

II. QUALIFICATIONS AND PROFESSIONAL BACKGROUND

A. Education

7. I received my Doctoral degree in 1974 from the University of Sussex, England. My thesis was entitled “Orthogonal Transform Coding of Still and Moving

Pictures”. The research for my thesis was performed in residence at the Image Processing Institute, University of Southern California, Los Angeles.

8. I received my B. Eng. Degree with Honors in 1970 from the University of Liverpool, England, in the field of electronics.

B. Summary

9. I am a digital media consultant providing technical, business development and intellectual property consulting services in the areas of digital media including digital imaging, digital video, digital audio and digital speech. Applications include consumer audio and video transmission and storage, video, audio and speech compression, real-time video processing and display, digital speech processing, image/video/audio systems architecture, and image/video/audio chip architecture. I have held this position since 2001.

C. Work Experience

10. From 1970 to 1973 I performed my graduate research in video compression. I was one of the first to perform a type of image coding (adaptive block transform coding) and the first to apply this type of coding to video. This is described in my thesis and summarized in an SPIE paper². These techniques underlie the

² Reader C., “Intraframe and Interframe Adaptive Transform Coding”, SPIE Vol. 66, 1975.

audiovisual coding standards known as MPEG (Moving Picture Experts Group), H.26x, and virtually all other video compression schemes today.

11. From 1975 to 1981 I studied, designed and developed systems for military imaging systems including realtime image and video reconnaissance systems and battlefield management systems. During this time, I designed and prototypes a packet-switched network for video data transmission.

12. In the early 1980s I taught classes at Santa Clara University, California in digital signal processing and digital image processing.

13. From 1982 to 1989 I architected and led hardware and software engineering teams in the design of systems for realtime imaging for military, medical and earth resources applications.

14. From 1990 to 2001 I architected and led hardware and software engineering teams in the design of semiconductor chips and systems for realtime imaging in digital consumer audio/video applications, including videoconferencing (with speech coding), broadcast TV and DVD.

D. Standardization

15. In 1990 I became an accredited delegate to the Moving Picture Experts Group – MPEG. I, and my team contributed to the technical work for all three parts of the standard – Systems, Video and Audio – and I participated in the management of MPEG. In the summer of 1990, I participated in the small group of experts that

defined the specifications for MPEG Systems – the multiplexing, synchronization, buffering and description of real time multimedia streams.

16. I was Head of Delegation (HoD) to MPEG for the United States in 1991-1992, and Editor in Chief of the MPEG1 standard. I personally reviewed and edited all three parts of the standard in detail, and wrote much of the informative annex for the MPEG1 standard. During this time I formed a team that implemented the nascent MPEG Systems specification and conducted an experiment that confirmed the precise synchronization of audio and video data streams according to the rate buffer model of the emerging standard specification.

17. I chaired the implementation subcommittee that analyzed MPEG1 Audio (Levels I & II aka MUSICAM; Level III aka mp3), Dolby AC3 and other proposed audio compression algorithms including legacy algorithms for complexity and cost of implementation.

I was a co-founder of the MPEG4 standard and chaired the subcommittee from inception for 2-1/2 years, beginning in 1993, following which I chaired the MPEG4 Requirements subcommittee for a further 2 years. These subcommittees established many of the fundamental principles of the MPEG4 standard, including object-based coding, software-based implementation, and development of the bitstream as a

syntactic language³. MPEG4 focused on audiovisual low bitrate coding, including low bitrate speech coding. During this time I participated in the development of the MPEG File Format mp4, and standards for transmission of video over IP networks.

E. Intellectual Property Rights

18. In 1992-1993 I was hired by CableLabs to be the technical expert for establishing the MPEG Patent Pool (Now MPEGLA). In the course of creating a list of essential IP to practice the standard, I reviewed approximately 10,000 abstracts and 1,000 patents. This is summarized in a chapter of the MPEG book by Mitchell et al.⁴

19. In 2002 I was hired by 10 companies to evaluate the standards essential patent environment for the nascent H.264 standard. I was an invited expert to the Joint Video Team (JVT) established by ISO and ITU to develop the H.264 standard (Also denoted MPEG4 Pt. 10, AVC).

20. In 2003 I was hired to evaluate the standards essential patent environment for the emerging national China AVS standards.

21. In 2013 I was hired to evaluate the standards essential patent environment for the emerging AV1 standard

³ Reader C, "MPEG4: Coding for Content, Interactivity, and Universal Accessibility", Optical Engineering, Vol. 35, No. 1, pp. 104-108, Jan 1996.

⁴ "MPEG Video Compression Standard", Edited by J. L. Mitchell et al, Chapter 16, "MPEG Patents", pp.357-362.

22. In 2017 I was hired to evaluate the standards essential patent environment for the H.265/HEVC standard.

F. Curriculum Vitae

23. Additional information concerning my professional publications and presentations in the field of digital video and cases in which I have served as an expert are set forth in my current Curriculum Vitae, a copy of which is attached as Ex1016. This Curriculum Vitae lists many publications authored or co-authored by me; and lists the cases in which I have testified via depositions and trials.

III. LEGAL STANDARDS AND BACKGROUND

24. I have been informed by counsel of several legal standards that govern my analysis, including those discussed below. For example, a proper validity analysis includes resolving the level of ordinary skill in the pertinent art, determining the scope and content of the prior art, and ascertaining the differences between the claimed invention and the prior art. I address all of these factors in my declaration below.

A. Person of Ordinary Skill in the Art

25. I have been advised that the claims of a patent are reviewed from the perspective of a hypothetical person of ordinary skill in the art (“POSITA”) at the time of the alleged invention. The “art” is the field of technology to which a patent

is related. I understand that the purpose of using the viewpoint of a POSITA is for objectivity.

B. Claim Construction

26. It is my understanding that, in an *inter partes* review proceeding, the claims must be construed in accordance with the ordinary and customary meaning as understood by a POSITA. I also understand that the appropriate context in which to read a claim term includes both the patent specification and the claim language itself, as well as the prosecution history of the patent.

C. Validity

27. I understand that Petitioner bears the burden of proving the instituted grounds of invalidity by a preponderance of the evidence. I understand that “preponderance” means “more likely than not.” I understand that general and conclusory assertions, without underlying factual evidence, may not support a conclusion that something is “more likely than not.”

28. More particularly, I am informed that the “preponderance of the evidence” standard requires that a reasonable finder of fact be convinced that the existence of a specific material fact is more probable than the non-existence of that fact. The preponderance of the evidence standard does not support speculation regarding specific facts and is instead focused on whether the evidence more likely than not demonstrates the existence or non-existence of specific material facts.

29. Here, I understand that Petitioner is arguing that the Challenged Claims are rendered obvious by certain prior-art references. I have been informed that a reference may qualify as prior art if the reference is a patent that was issued or a printed publication that was published before the effective filing date of the claimed invention. For a printed publication to qualify as prior art, I understand that the petitioner must demonstrate that the publication was disseminated or was otherwise sufficiently accessible to the public. I am informed that printed publications include patent applications published in the United States or in foreign countries.

D. Obviousness

30. I understand that a patent claim may be found unpatentable as obvious if the petitioner establishes by a preponderance of the evidence that, as of the priority date, the subject matter of the claim, considered as a whole, would have been obvious to POSITA. I understand that the analysis of whether a claim is obvious depends upon a number of factual inquiries, for example, (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.

31. I have also been informed that the claimed invention must be considered as a whole in analyzing obviousness or non-obviousness. In determining the differences between the prior art and the claims, the question under the

obviousness inquiry is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.

32. Relatedly, I understand that it might be appropriate to consider whether there is evidence of a “teaching, suggestion, or motivation” to combine the teachings in the prior art, the nature of the problem, and the knowledge of a person of ordinary skill in the art.

33. I have been informed and understand that a prior-art reference inherently discloses a limitation if the reference must necessarily function in accordance with, or include, the limitation in the context of the patented technology.

34. I understand that one indicator of non-obviousness is when a prior-art reference “teaches away” from combining certain known elements. For example, a prior-art reference teaches away from the patent’s particular combination if the reference leads in a different direction or discourages that combination, recommends steps that would not likely lead to the patent’s result, or otherwise indicates that a seemingly inoperative device would be produced.

35. I further understand that certain objective indicia can be evidence regarding whether a patent is obvious or nonobvious, including the existence of a long-felt but unsolved need, unexpected results, commercial success, copying, and industry acceptance or praise.

IV. PERSON OF ORDINARY SKILL IN THE ART

36. As discussed above, I have been advised that the claims of a patent are reviewed from the point of view of POSITA.

37. To determine the characteristics of a POSITA, I have considered the prior art and the various approaches in the prior art, the types of problems encountered, the solutions to those problems, the problems encountered by the inventor, and the rapidity with which innovations were made. I also considered the sophistication of the technology involved and the educational background and experience of those actively working in the relevant field at the time of the invention. Finally, I placed myself back at the time of the alleged invention and considered the technology available at that time, and the engineers and other professionals with whom I worked or interacted in the relevant industries, and their level of education, activities, and sophistication.

38. Based on those considerations, it is my opinion that 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.⁵ A person having less education but more relevant practical experience, or more education and less experience, might also meet this standard.

39. In view of my education and experience, as summarized above and in my curriculum vitae, I meet and exceed this definition of a POSITA.

40. In arriving at my opinions and conclusions in this declaration, I have considered the issues from the perspective of a POSITA at the time of the alleged invention.

V. SUMMARY OF U.S. PATENT NO. 9,769,427 (“THE ’427 PATENT”)

41. The ’427 patent is titled “Content Delivery System.” A Japanese priority application was filed on November 18, 2008, and a subsequent Patent Cooperation Treaty application was filed on November 17, 2009.

A. The Specification of the ’427 Patent

1. Prior-Art Content Delivery Systems Alleged in the Patent

42. The ’427 Patent relates to content delivery systems, such as video-on-demand systems or Internet Protocol Television (IPTV) 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. In the “Background Art” section, the ’427 Patent concedes that such content delivery systems were known before the alleged invention described in

⁵ Any 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.

the patent. Ex1001, 1:11-13. These prior-art systems included a content transmitter, a content receiver (e.g., the set-top box), and a connection controller, such as a Session Initiation Protocol (SIP) server. Ex1001, 1:11-13.

43. In these prior-art content delivery systems, the content receiver transmitted a content delivery request to the connection controller. Ex1001, 1:14-16. In response to the content delivery request, the connection controller transmitted a content delivery instruction to the content transmitter, while establishing a connection between the content transmitter and the content receiver. Ex1001, 1:16-20. Further, the content delivery system executed a process to reserve a communication bandwidth of a communication channel between the content transmitter and the content receiver. Ex1001, 1:20-23. Once the connection was established by the connection controller, the content transmitter transmitted pre-stored content data (e.g., video) to the content receiver. Ex1001, 1:23-25.

44. Such a content delivery system was well known before the effective filing date of the '427 Patent (November 18, 2008).

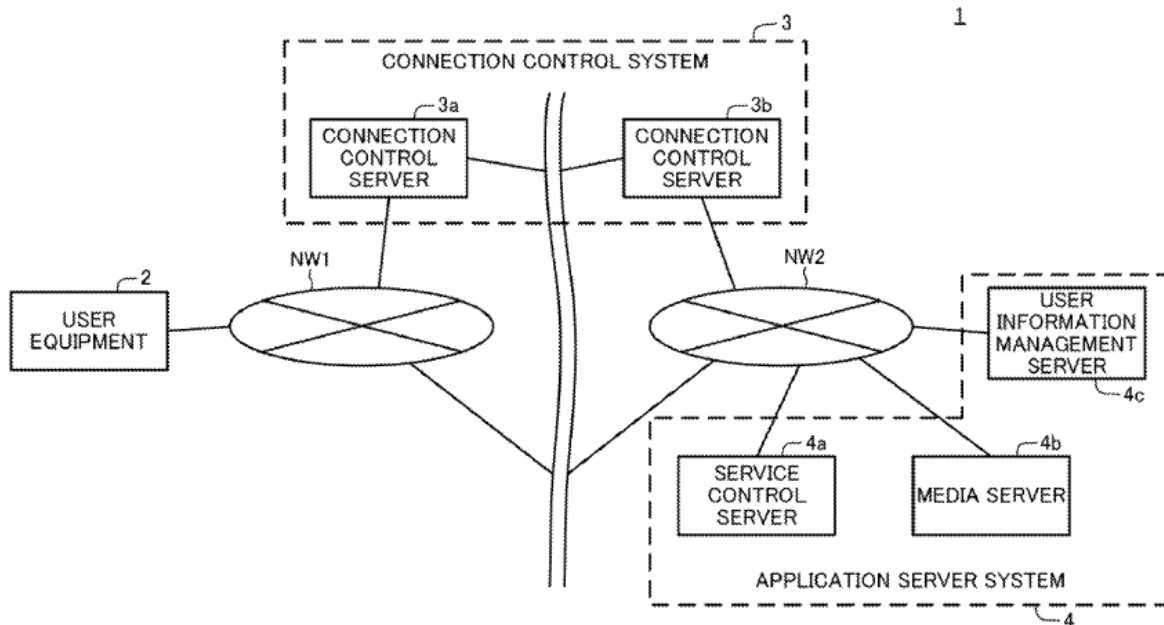
2. The Alleged Improvement of the '427 Patent

45. According to the '427 Patent, the object of the alleged invention described in the '427 Patent is “to provide a content delivery system capable of solving the problem that it is impossible to cause a user to view the user’s desired content and/or advertisement content selected according to the user.” Ex1001, 1:48-

52; *see also* 3:37-39. This is the only object of the alleged invention stated in the '427 Patent.

46. The content delivery system 1 of the '427 Patent, according to a first embodiment, is a Video-on-Demand system as illustrated in Figure 1, reproduced below. Ex1001, 4:58-60 & Fig. 1. The content delivery system 1 includes a connection control system 3 and an application server system 4. Ex1001, 4:63-64. The connection control system 3 has a plurality of servers, including a connection control server 3a and a connection control server 3b, which are both Session Initiation Protocol (SIP) servers. Ex1001, 4:63-67, 5:35-41. The connection control server 3a is connected to user equipment (UE) 2 through user communication lines NW1 forming an IP (Internet Protocol) network. Ex1001, 5:4-6. The connection control server 3b and the application server system 4 are connected to each other through service provider communication lines NW2 forming the IP network. Ex1001, 5:7-10.

Fig.1



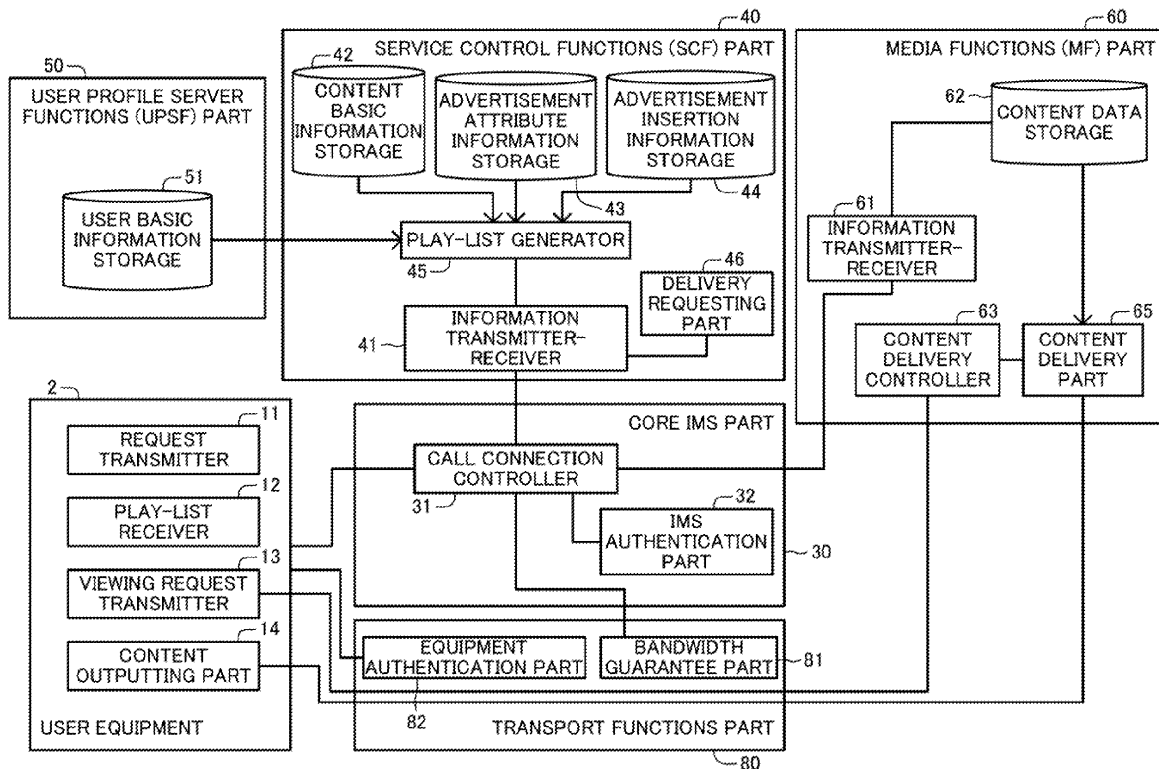
47. The user equipment 2 has a set-top box and a remote controller. Ex1001, 5:11-12. The set-top box receives content data (video consisting of sound and images) transmitted from the media server 4b (part of the application server system 4) and outputs the content to a television receiver by converting the received content data. Ex1001, 5:12-17.

48. The user equipment 2 also stores equipment specification information in a memory. Ex1001, 5:24-26. The connection control system 3 is configured to establish, upon receiving a SIP message containing equipment specification information transmitted by the user equipment 2, a connection (session) between the application server system 4 and the user equipment 2 based on the equipment specification information contained in the received SIP message. Ex1001, 5:42-48.

49. The application server system includes a plurality of servers, including a service control server 4a, the media server 4b, and a user information management server 4c. Ex1001, 4:67-5:3. The media server 4b transmits content data to the user equipment 2 with which the connection is established by the connection control system 3. Ex1001, 5:51-53. The user information management server 4c stores profile information of the user of the user equipment 2. Ex1001, 5:53-57.

50. Figure 2 of the '427 Patent, reproduced below, illustrates the functions of the content delivery system 1. Ex1001, 5:59-60 & Fig. 2. The figure shows, among other things, the user equipment 2, a core Internet Protocol Multimedia Subsystem (IMS) part 30 (part of the connection control system 3), a service control functions (SCF) part 40 (part of the service control server 4a), a user profile server functions (UPSF) part 50 (part of the user information management server 4c), a media functions (MF) part 60 (part of the media server 4b), and a transport functions (TF) part 80 (part of the connection control system 3). Ex1001, 7:48-50, 9:6-7, 9:29-30, 11:33-34, & Fig. 2.

Fig.2



51. The core IMS part 30 comprises a call connection controller 31 that establishes a connection between the media server 4b and the user equipment 2 upon receiving a bandwidth guarantee instruction from the service control server 4a. Ex1001, 7:51-53, 8:41-63. The transport functions part 80 comprises, in relevant part, a bandwidth guarantee part 81 that receives communication bandwidth information from the call connection controller 31 and executes a process to guarantee the communication bandwidth. Ex1001, 7:51-53, 8:64-9:4.

52. The service control functions part 40 comprises:

- an information transmitter-receiver 41 that receives a content delivery request, which is transmitted by the user equipment 2

and contains user identification information, equipment address information, and main content identification information (Ex1001, 9:31-39, 10:14-20); and

- a play-list generator 45 that selects advertisement content data stored in association with advertisement attribute information in the advertisement attribute information storage 43, with the advertisement attribute information being specified by user basic information stored in the user basic information storage 51 and content basic information stored in the content basic information storage 42 (Ex1001, 9:31-39, 10:14-64).

53. The media functions part 60 comprises:

- a content data storage 62 that stores the main content data and the advertisement content data (Ex1001, 11:37-40, 11:53-60); and
- a content delivering part 65 that transmits the main content data and the advertisement content data stored by the content data storage 62 to the user equipment 2, if the connection between the user equipment 2 and the media server 4b has been established by the connection control system 3 (Ex1001, 11:37-41, 12:8-23).

54. The user equipment 2 comprises a content outputting part 14 that receives the main content data and the 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.

55. The advertisement content is inserted in the main content based upon play-list information generated by the play-list generator 45 and transmitted by the information transmitter-receiver 41 to the user equipment 2. Ex1001, 10:65-11:27. The play-list information thus contains the main content identification information specified by the content delivery request and the selected advertisement content specification information specifying the advertisement content data selected by the play-list generator 45. Ex1001, 11:6-11. The play-list information also indicates a sequence in which the pieces of content (the main content and the advertisement content) are output. Ex1001. 6:57-62.

56. As discussed later in this declaration, all of these functions would have been known by a POSITA before the earliest possible filing date of the '427 Patent (November 18, 2008).

B. Prosecution History

57. I have reviewed the file history of U.S. Patent Application No. 13/129,756, from which the '427 Patent issued.

58. The original claims of the '427 Patent (reciting a content delivery system, a content delivery method, a service control server, and a user equipment) were rejected as anticipated by U.S. Patent Application Publication No. 2008/0256216 A1 to Aarts, alone or in combination with U.S. Patent Application Publication No. 2003/0105669 to Tsuchiya or U.S. Patent Application 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. The amendments added the following limitations, or their equivalents, to the independent claims:

1. 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;
2. 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
3. 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.

59. As discussed later in this declaration, these concepts were not inventive. These concepts would have been well known to a POSITA before the earliest possible filing date of the '427 Patent (November 18, 2008).

VI. CLAIM CONSTRUCTION

60. I have been asked to offer my opinion about the understanding of a POSITA regarding certain claim terms in the '427 Patent. I understand that, in this *inter partes* review proceeding, the Challenged Claims must be construed in accordance with the ordinary and customary meaning as understood by a POSITA, in the context of both the patent specification and the claim language itself, as well as the prosecution history of the patent.

61. I reserve the right to present different constructions of the claim terms in litigation. Accordingly, I propose the claim constructions below for purposes of this petition only. I presume any claim terms that are not defined below to have their plain and ordinary meaning.⁶

62. I have been asked to offer my opinion about the understanding of a POSITA regarding the following terms in the claims of the '427 Patent.

A. “equipment specification information”

63. In my opinion, for purposes of this petition, this claim term should be construed to mean *an identifier for identifying the user equipment*. The specification of the '427 Patent states that “[t]he user equipment 2 stores equipment specification information for specifying the equipment (local terminal) in a memory

⁶ In this declaration, I do not offer an opinion on whether any claim terms meet the statutory requirements of 35 U.S.C. § 112.

serving as a storing device.” Ex1001, 5:24-26. The user equipment is configured to transmit a SIP message containing the stored equipment specification information to the connection control system 3. Ex1001, 6:16. Figures 7-11, 16 and 19 of the ’427 Patent each show an INVITE message of a SIP 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.

Fig.7

```
INVITE sip:bob@biloxi.com SIP/2.0
Via: SIP/2.0/UDP
pc33.atlanta.com;branch=z9hG4bKnashds8
Max-Forwards: 70
To: Bob <sip:bob@biloxi.com>
From: Alice <sip:alice@atlanta.com> tag=1928301774
Call-ID: a84b4c76c66710
CSeq: 314159 INVITE
X-video-sequence: content1;0;300,adv1;0;30,content1;301;6
00,adv2;0;30,content1;601-900
Contact: <sip:alice@pc33.atlanta.com>
Content-Type: application/sdp
Content-Length: 142

v=0
o=jdoe 2890844526 2890842807 IN IP4 10.47.16.5
s=SDP Seminar
i=A Seminar on the session description protocol
e=j.doe@example.com (Jane Doe)
c=IN IP4 224.2.17.12/127
t=2873397496 2873404696
a=recvonly
m=application 9 TCP/TLS iptv_rtsp
a=setup:active
a=connection:new
c=IN IP4 10.10.10.10
m=audio 49170 RTP/AVP 0
c=IN IP4 10.10.10.10
b=AS:150000
a=recvonly
m=video 51372 RTP/AVP 99
c=IN IP4 10.10.10.10
b=AS:150000
a=recvonly
a=rtpmap:99 h263-1998/90000
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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”

64. I have been informed by counsel that this claim term should be construed so as to cover at least the embodiments described in the '427 Patent. The '427 Patent describes that the bandwidth guarantee part 81 of the 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* Ex1001, 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 (*see* Ex1001, 15:35-40), and that a core IMS part 30 of the connection control system 3 (*see* Ex1001, 7:48-50) executes the bandwidth guarantee process at B502. The specification does not elaborate any further on what is meant by “a process to guarantee a communication bandwidth,” indicating that the patent applicant was treating this process as a standard process performed by SIP servers using SIP messages.

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

65. The Challenged 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 written description of the ’427 Patent, *see* Ex1001, 7:24-35, and not in relation to a process for guaranteeing a communication bandwidth (or more generally in relation to any process for establishing a connection).

66. In its Amendment in Response to Non-Final Office Action Under 37C.F.R. § 1.111 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 then distinguished U.S. Patent No. 8,458,184 to Dorogusker et al., 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.

67. I have been informed by counsel that, at the very least, this claim term should be construed to cover the preferred embodiments 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 process bandwidth guarantee process is a standard process performed by SIP servers using SIP messages.

68. As discussed below, it is my opinion that 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 sever. This is exactly what happens in the preferred embodiments described in the '427 Patent. Therefore, it is my opinion that 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.”

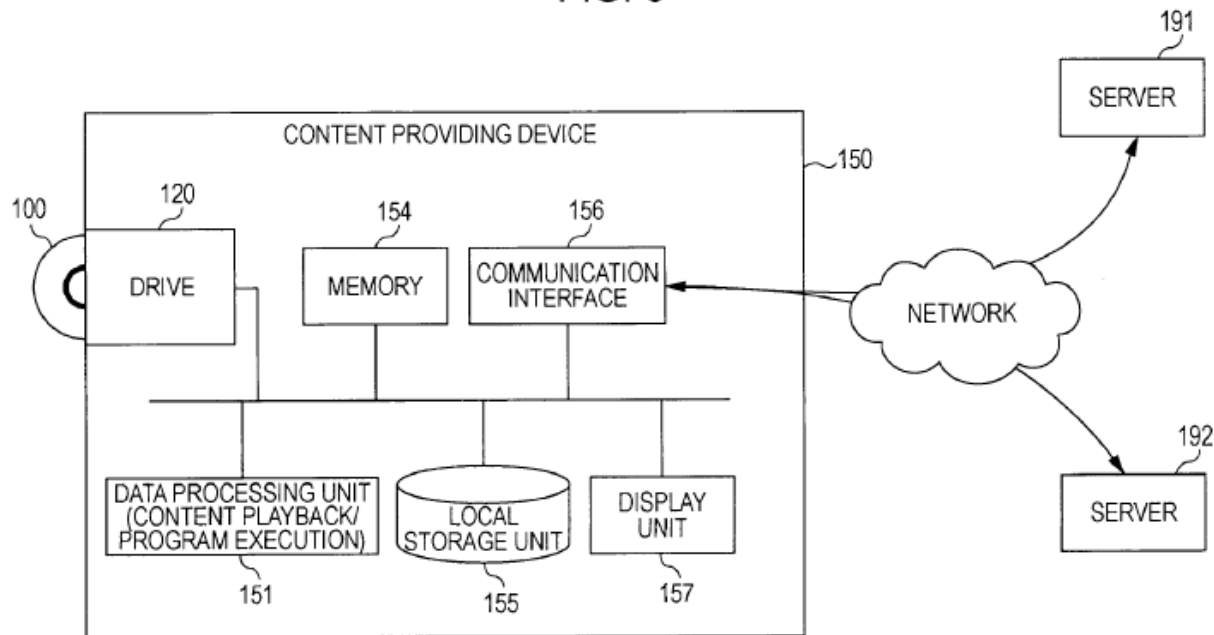
VII. SUMMARY OF THE PRIOR ART

A. U.S. Patent Application Publication No. 2009/0094321 A1 to Ueda et al. (“Ueda”)

69. Ueda was filed on September 19, 2008. Ex1003. Ueda therefore qualifies as prior art. The patent is titled “Content Providing Device, Data Processing Method, and Computer Program.” Ex1003.

70. 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 server 191 also generates an allowed processing list (Figure 7, step 102) and can have an authentication processing unit (Figure 24). *See, e.g.*, Ex1003 ¶¶0148, 0344-0345 & Figs. 7, 24. The overall system is shown in Figure 6 of Ueda, reproduced below.

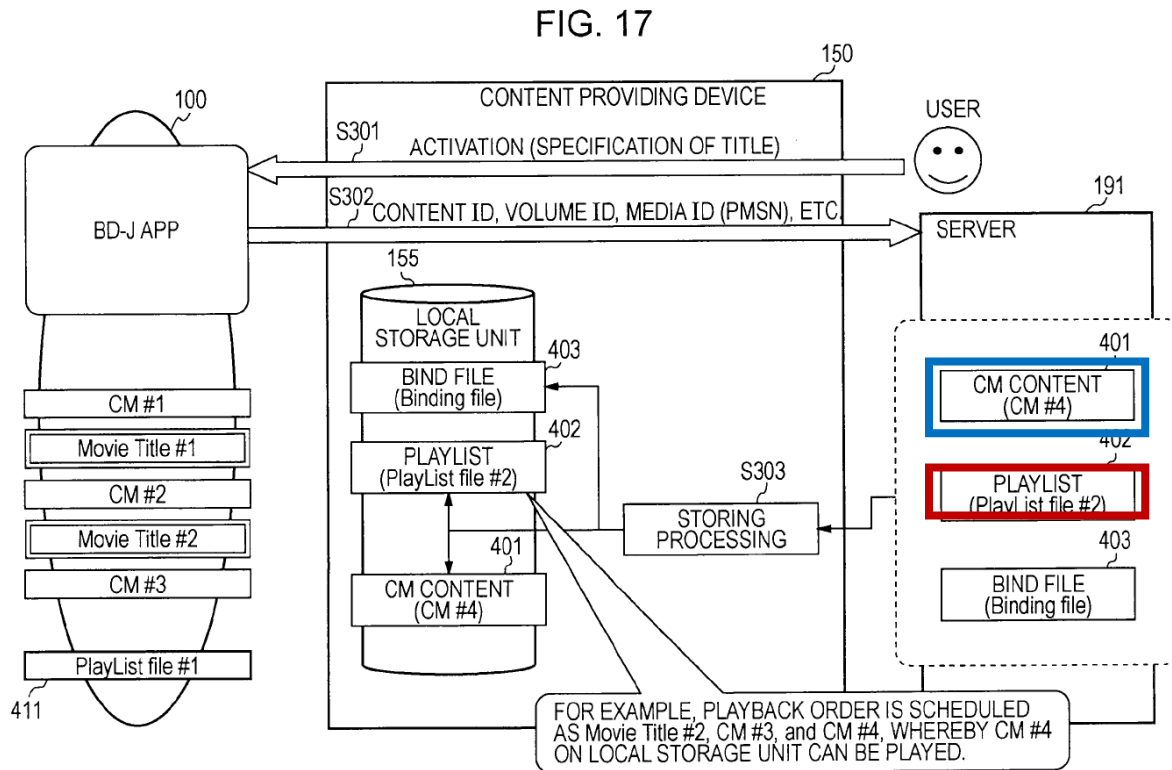
FIG. 6



71. In operation, the server 191 receives equipment specification information (a user ID and/or a content providing device ID) transmitted by the content providing device 150. *See, e.g.*, Ex1003 ¶¶0147, 0169, 0243, 0258, 0275, 0344, 0374, 0380, 0388, 0389, 0435, 0441 & Figs. 7, 24. The server 191 then establishes a connection between the portion of the server 191 that delivers the content/playlist and the 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.

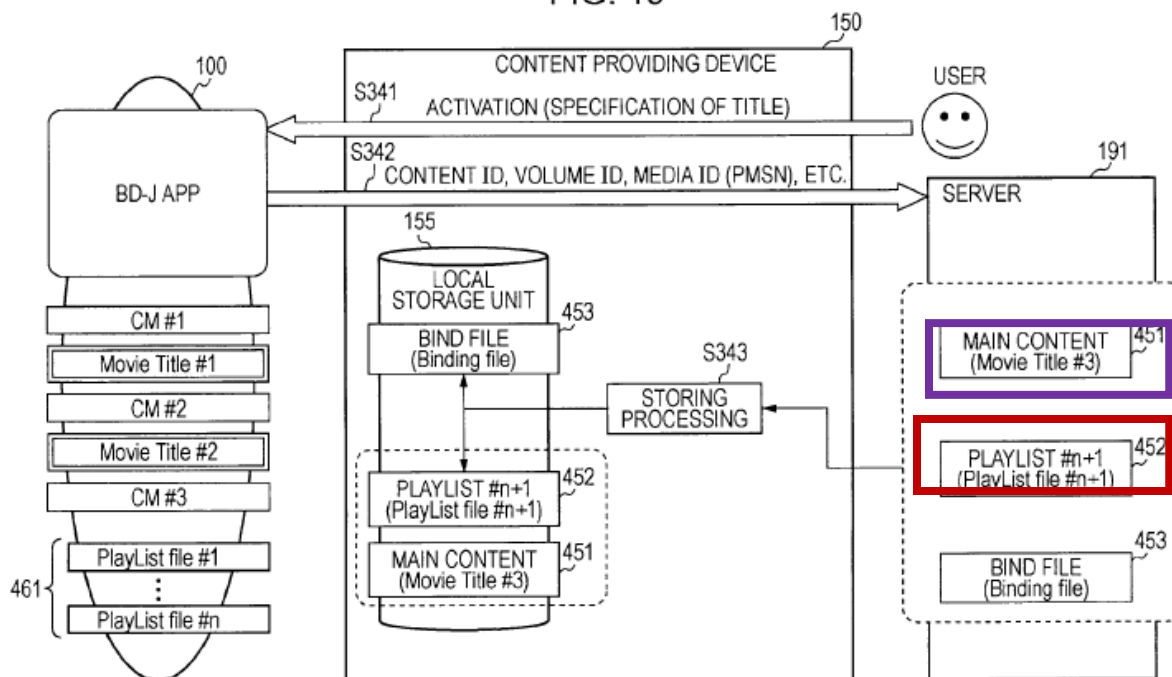
72. The server 191 itself comprises a database for storing **commercial (CM) content**. *See, e.g.*, Ex1003 ¶¶0119, 0241, 0244, 0245, 0248, 0259, 0413, 0438, 0439,

0443 & Figs. 17, 30. The commercial (CM) content is shown explicitly in Figures 17 and 30 of Ueda, along with a **playlist**. Figure 17 is reproduced below.



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

FIG. 19



74. In operation, the server 191 receives a content delivery request in the form of a “download request” transmitted by the content providing device 150. *See, e.g.,* Ex1003 ¶¶0244, 0259, 0276-0279, 0299, 0344, 0370, 0372, 0385-0388, 0485, 509, 529. In response, the server 191 transmits the main content identified by the request. *See, e.g.,* Ex1003 ¶¶0276-0279, 0370 & Fig. 19.

75. The server 191 also comprises a data processing unit that selects stored commercial content based on selection information in the form of user-preference or personal information. *See, e.g.,* Ex1003 ¶¶0017, 0019-0023, 0028, 0441-0443. This user-preference and personal information contains attribute information representing an attribute of the commercial content. *See, e.g.,* Ex1003 ¶¶0432, 0438 & Fig. 30.

76. In particular, Ueda teaches that the user-preference and personal information used to select the commercial content may relate 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. For example:

in a case wherein the viewing and listening content of the user is a movie content relating to cars, a car-related commercial is provided, and in a case wherein the viewing and listening content of the user is a South Korean movie content, a commercial of South Korean travel or South Korean products is provided.

Ex1003 ¶0439. Thus, the attribute information contained in the user-preference and personal information represents an attribute of the commercial content that the server 191 selects. *See, e.g.*, Ex1003 ¶0440.

77. In addition to the main content and the commercial content, the server 191 also transmits a playlist to the content providing device 150. *See, e.g.*, Ex1003, Figs. 17, 19, Fig. 24. For example, Ueda teaches that “a new *playlist 402* in which the commercial content (CM#4) 401 serving as a download content is recorded as playback content information is also downloaded from the server ...” Ex1003 ¶0241; *see also, e.g.*, Ex1003 ¶¶0244-0247.

78. The playlist file contains information specifying both the main content requested by the content providing device 150 and the commercial content selected by the server 191, along with a sequence in which the main content and the

commercial content are output. *See, e.g.,* Ueda, ¶¶0007, 0009-0010, 0098, 0101, 0158-0159, 0183, 0193-0194, 0235, 0248, 0253-0254, 0273, 0281, 0356, 0399-0405. For example, “in a case wherein the playlist file (PlayList file #2) 402 has the following playback specification information, Movie Title # 2→CM # 3→CM # 4,” the content providing device 150 plays back the content in the order specified by the playlist file (i.e., Movie Title # 2, then commercial (CM) #3, then commercial (CM) #4). Ex1003 ¶¶0253-0254.

B. J. Rosenberg et al., *SIP: Session Initiation Protocol* (RFC 3261, Network Working Group, Internet Engineering Task Force, June 2002) (the “SIP Standard”)

79. The SIP Standard was published in June 2002. Ex1004, p. 1. The SIP Standard therefore qualifies as prior art.

80. Requests for Comments (RFCs) produced by the Internet Engineering Task Force (IETF) cover many aspects of computer networking. They describe the Internet’s technical foundations, such as addressing, routing, and transport technologies. RFCs also specify protocols that are used to deliver services used by billions of people every day, such as real-time collaboration, email, and the domain name system.

81. The website www.rfc-editor.org (“the “RFC Editor”) is a website operated by Association Management Solutions, LLC under contract with the IETF Administration LLC. Through my work, I am very familiar with this website. Part

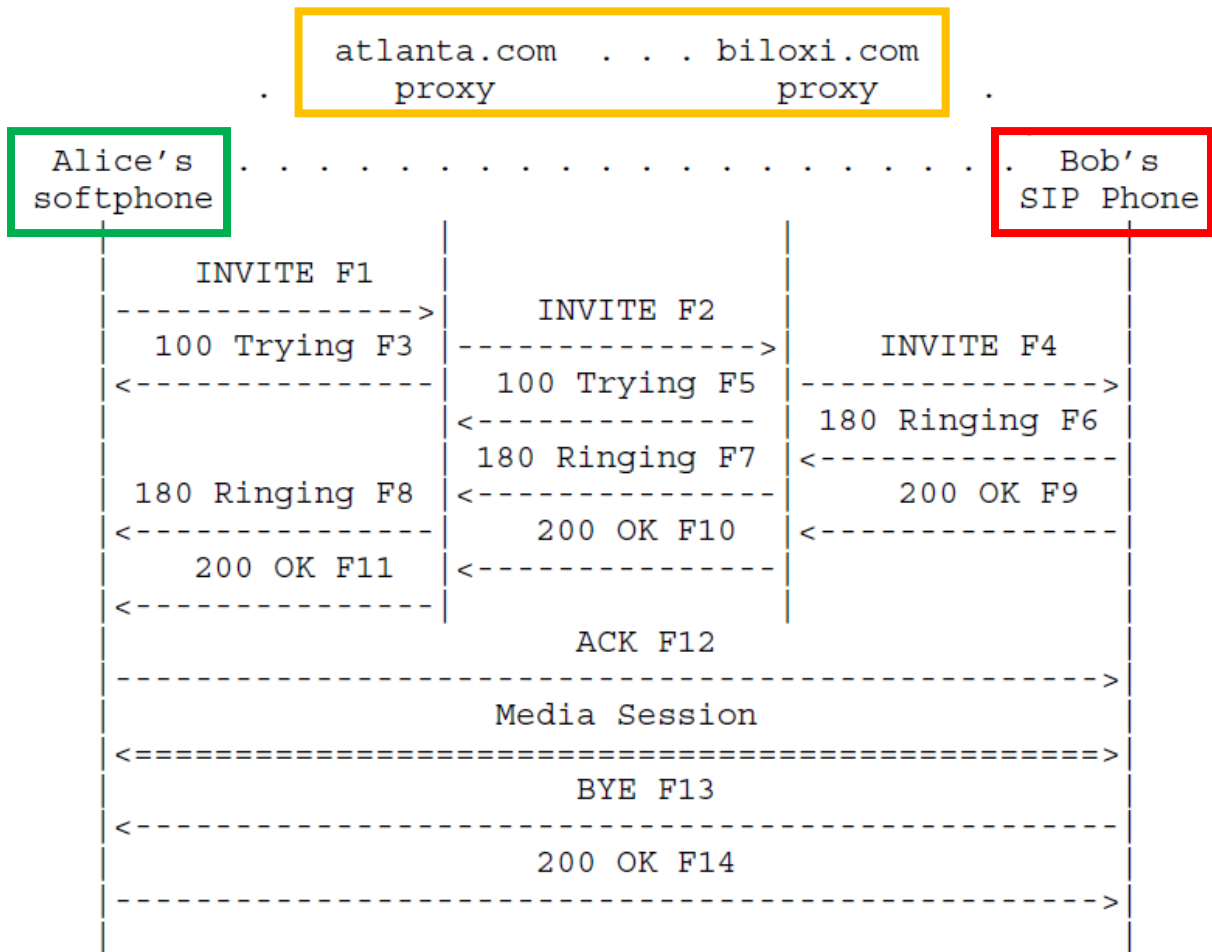
of this website is a free online service for searching IETF RFC documents. It is the definitive online source for IETF RFC documents. In my experience, the RFC Editor is an electronic system that produces accurate results.

82. I have downloaded the SIP Standard from the RFC Editor by typing the search term “3261” into the search function on the RFC Editor. The search results show a date of June 2002 for RFC 3261 (the SIP Standard), indicating that the SIP Standard was made available to the public in June 2002. The copy of the SIP Standard that I downloaded also shows a date of June 2002, further indicating that the SIP Standard was made available to the public in June 2002. Ex1004 in this IPR proceeding is a copy of the SIP Standard downloaded from the RFC Editor.

83. The SIP Standard is an IETF (Internet Engineering Task Force) protocol that describes Session Initiation Protocol (“SIP”), “an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants.” Ex1004, p. 1, Abstract. These sessions “include Internet telephone calls, multimedia distribution, and multimedia conferences.” Ex1004, p. 1, Abstract. SIP invitations are used to create sessions and “carry session descriptions that allow participants to agree on a set of compatible media types.” Ex1004, p. 1, Abstract. SIP “makes use of elements called proxy servers to help route requests to the user’s current location, authenticate and authorize users for

services, implement provider call-routing policies, and provide features to users.”
 Ex1004, p. 1, Abstract.

84. The proxy servers are shown in Figure 1 of the SIP Standard (reproduced below), which shows two proxy servers between a user equipment (Alice’s softphone) and a server system (Bob’s SIP phone).



85. Figure 1 of the SIP Standard also shows an example of a SIP message exchange between two users, Alice and Bob. Ex1004, pp. 11-12 & Fig. 1. The figure shows “two SIP proxy servers that act on behalf of Alice and Bob to facilitate

the session establishment.” Ex1004, p. 11. Alice’s softphone transmits a SIP invite message (INVITE F1) containing Bob’s SIP identity—a SIP Uniform Resource Identifier (URI)—to a first proxy server, which communicates with a second proxy server and ultimately Bob’s IP phone. Ex1004, pp. 11-12 & Fig. 1. Bob’s softphone responds with a 200 (OK) F9 message to indicate that Bob is willing to establish a session with Alice. Ex1004, p. 15 & Fig. 1. The 200 (OK) message “is routed back through the two proxies and is received by Alice’s softphone, which ... indicates that the call has been answered.” Ex1004, p. 16. Next, Alice’s softphone “sends an acknowledgement message, ACK, to Bob’s SIP phone to confirm the reception of the final response (200 (OK)).” Ex1004, p. 16.

86. The proxy servers thus have established a connection (a media session) between Alice’s softphone and Bob’s SIP phone, and the two “endpoints have learned each other’s address from the Contact header fields through the INVITE/200 (OK) exchange, which was not known when the initial INVITE was sent.” Ex1004, p. 16 & Fig. 1. This “completes the INVITE/200/ACK three-way handshake used to establish SIP sessions.” Ex1004, p. 16 & Fig. 1. The media session between Alice and Bob has now begun, and they can exchange media packets. Ex1004, p. 16 & Fig. 1; *see also* Ex1004 § 13, pp. 77-86. The SIP Standard thus teaches one or more connection control servers (e.g., proxy servers) that are configured to establish a connection between two endpoints.

87. Additionally, the SIP Standard teaches that the proxy servers (the one or more connection control servers) are configured to receive equipment specification information transmitted by a user equipment and that the connection established above is based on the received equipment specification information. In particular, the SIP Standard teaches that:

The INVITE request contains a number of header fields. Header fields are named attributes that provide additional information about a message. The ones present in an INVITE include a unique identifier for the call, the destination address, *Alice's address*, and information about the type of session that Alice wishes to establish with Bob.

Ex1004, p. 11; *see also* Ex1004, p. 35, § 8.1.1, p. 37, § 8.1.1.3.

C. M. Handley et al., SDP: Session Description Protocol (RFC 4566, Network Working Group, Internet Engineering Task Force, July 2006) (the “SDP Standard”)

88. The SDP Standard was published in July 2006. Ex1005, p. 1. The SDP Standard therefore qualifies as prior art.

89. I have downloaded the SDP Standard from the RFC Editor by typing the search term “4566” into the search function on the RFC Editor. The search results show a date of July 2006 for RFC 4566 (the SDP Standard), indicating that the SDP Standard was made available to the public in July 2006. The copy of the SDP Standard that I downloaded also shows a date of July 2006, further indicating

that the SDP Standard was made available to the public in July 2006. Ex1005 in this IPR proceeding is a copy of the SDP Standard downloaded from the RFC Editor.

90. Like the SIP Standard discussed above, Session Description Protocol (“SDP”) is an IETF (Internet Engineering Task Force) protocol “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. The SDP Standard (Ex1005) 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. These session descriptions are commonly formatted using SDP.” Ex1005 p. 4, § 3.1; *see also, e.g.*, Ex1005 p. 5. An SDP session description includes the session name and purpose, the time(s) that the session is active, 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.

91. In this regard, the SDP Standard teaches that the SDP description can include a bandwidth (“b=”) field that “denotes the proposed **bandwidth** to be used by the session or media.” Ex1005, p. 16, § 5.8. Two values are defined for the bandwidth type: (1) conference total (“CT”); and (2) application specific (“AS”). Ex1005, p. 16, § 5.8. As described in the SDP Standard, “CT gives a total bandwidth figure for all the media at all sites. AS gives a bandwidth figure for a single media

at a single site, although there may be many sites sending simultaneously.” Ex1005, p. 16, § 5.8.

92. Additionally, the SDP Standard explicitly teaches an SDP description can contain **both** bandwidth information **and** information specifying the media to which the requested session pertains, such that both types of information are transmitted at the same time. Ex1005, p. 9. In SDP, “[a]n SDP session description consists of a session-level section followed by zero or **more media-level sections**. ... Each media-level section starts with an “m=” line and continues to the next media-level section or end of the whole session description.” Ex1005, p. 8. The “m=” line is a media description field that provides the media name and transport address, thus specifying the media for the requested session. Ex1005, p. 9. The overall session description and/or each media description can also have a “b=” line, which provides bandwidth information for the overall session or each media item. Ex1005, p. 9, 16.

93. The SDP Standard thus teaches that the SDP description can contain both the information specifying the media content to which the requested session pertains (Ex1005, pp. 1, 4, 5, 10, 12, 13, 21, 22 & §§ 5.4, 5.5, 5.13, 5.14) and the information about the bandwidth (Ex1005, pp. 5, 16 & § 5.8). Because the bandwidth information (“b=” line) can be included in the session description and/or in each media description, the transmission of such bandwidth information occurs together with the transmission of the information specifying the media content.

D. U.S. Patent Application Publication No. 2009/0100496 A1 to Bechtolsheim et al. (“Bechtolsheim”)

94. Bechtolsheim was filed on April 24, 2007. Ex1006. Bechtolsheim therefore qualifies as prior art. The patent is titled “Media Server System.” Ex1006.

95. Bechtolsheim teaches a content delivery system in the form of a cable television system 10, shown in Figure 1 of the reference (reproduced below). Ex1006 ¶¶0017 & Fig. 1. The cable television system 10 comprises a **content on demand (COD) application server 160** and a **stream system 130**. Ex1006 ¶¶0023-0024 & Fig. 1. The stream system 130 includes a switch unit 135 that establishes a connection via a distribution hub 110 with user equipment in the form of a **set top box (STB) 120**. Ex1006 ¶¶0023, 0046, Fig. 1. The COD application server 160, in turn, receives a content delivery request transmitted by the STB 120 and identifying a movie. Ex1006 ¶¶0064 & Fig. 4. The stream system 130 comprises a media storage 140 for storing both 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* Ex1006 ¶¶0033, 0050, 0057, 0064-0065, 0067 & Figs. 1, 2.

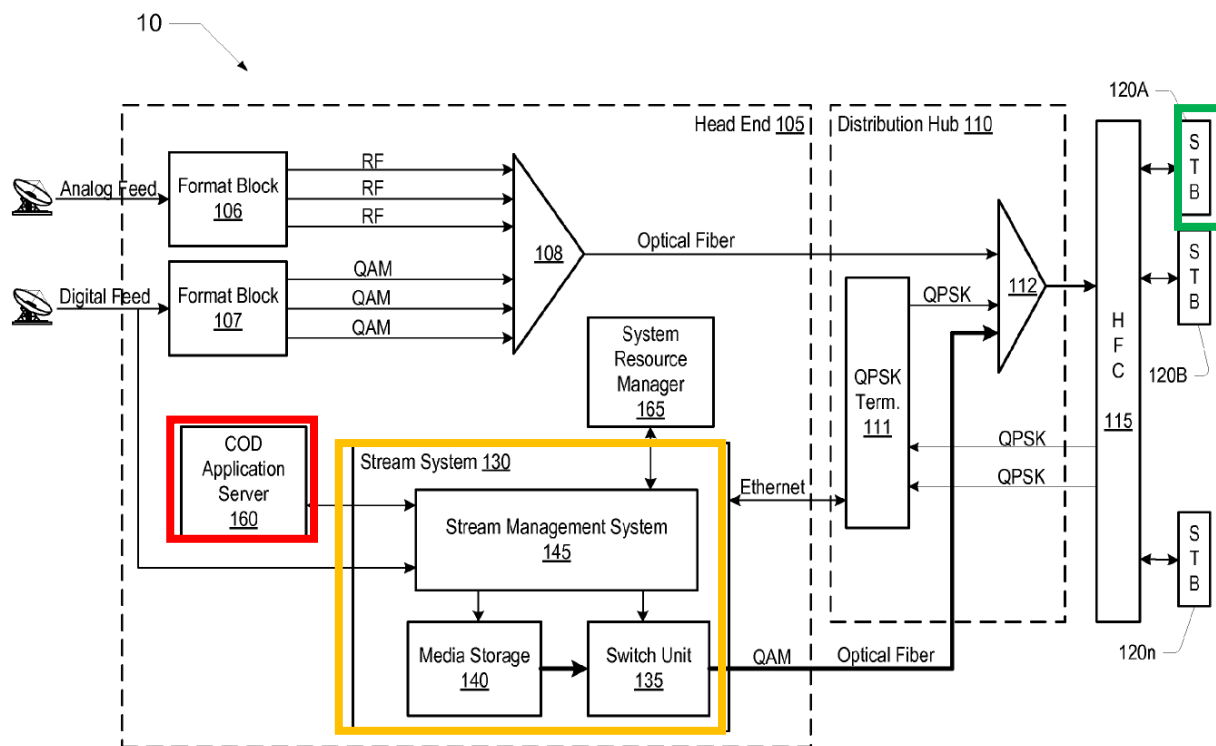


FIG. 1

96. Bechtolsheim also teaches that the switch unit 135 of the steam system 130 puts together a playlist of the content segments for a movie, with the content segments specifying chapters of the movie and commercials. Ex1006 ¶0033.

97. At the same time that the playlist is put together, the import preprocessor 148 of the stream system 130 executes a process for guaranteeing a communication bandwidth for transmitting content data. Ex1006 ¶0034. The output of this process is playlist file that includes metadata for each video segment. Ex1006 ¶0034. Bechtolsheim explains that:

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 of content data thus are determined at the same time that the playlist is prepared by the steam system 130.

98. The import preprocessor 148 guarantees this bandwidth. As Bechtolsheim explains:

the import preprocessor 148 may be configured with the ... target bandwidth by the CFE 146. *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.

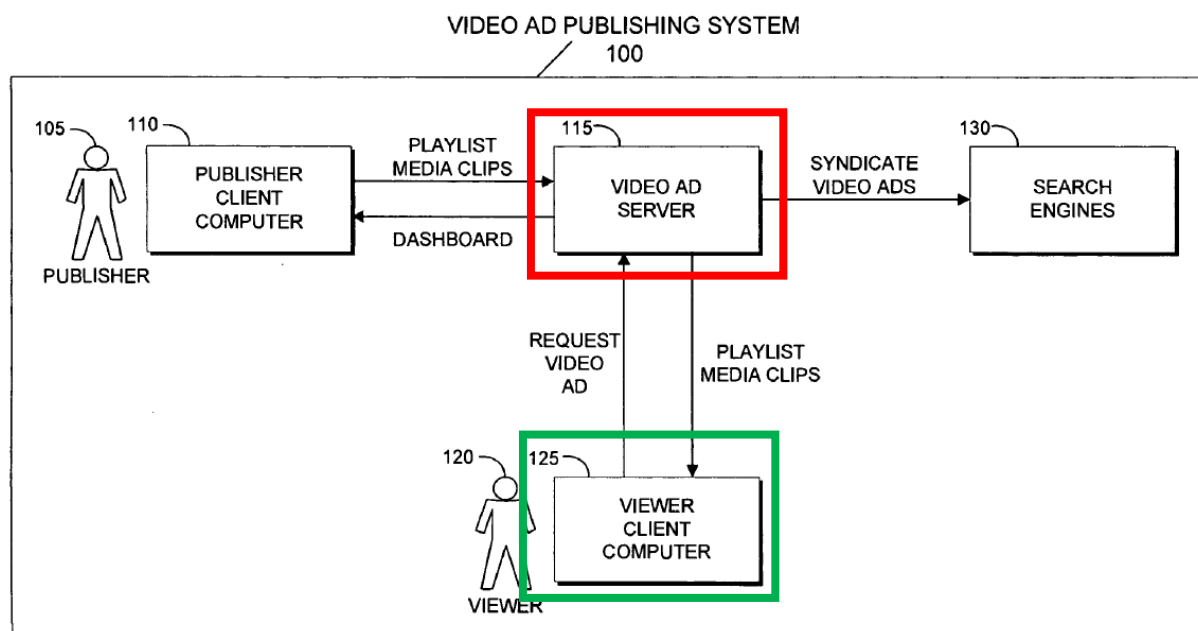
Ex1006 ¶0038; *see also* Ex1006 ¶0049.

E. U.S. Patent Application Publication No. 2010/0010884 A1 to Cohee et al. (“Cohee”)

99. Cohee was filed on July 14, 2008. Ex1007. Cohee therefore qualifies as prior art. The patent application is titled “Method and System for Customizable Video Advertising.” Ex1007.

100. Cohee teaches a content delivery system in the form of a video ad publishing system 100, shown in Figure 1 of the reference (reproduced below). Ex1007 ¶0037 & Fig. 1. The video ad publishing system 100 comprises an application server system in the form of a video ad server 115 and a user equipment in the form of a viewer client computer 125. Ex1007, Figs. 1, 5, 7 and 8. The video ad server 115 stores media clips. Ex1007 ¶¶0037, 0053, 0057, 0062, 0064, 0072-

0073 & Figs. 7 and 8. The viewer client computer 125 has a two-way connection with the video ad server 115 for downloading media clips, and for uploading viewing statistics. Ex1007 ¶0074 & Fig. 8; *see also, e.g.*, Ex1007, Figs. 1, 5 and 7.



101. Cohee also teaches that the viewer client computer 125 transmits to the video ad server 115 a main content viewing request in the form of a media file request. Ex1007 ¶¶0057, 0063 & Figs. 4, 5, 6. Cohee describes that the video ad server 115 (comprising a web browser 505, a flash player 510, and a video ad player 515 as described in connection with Fig. 5 of the reference) transmits a playlist for a video ad to the viewer client computer 125 based on a playback request of the video ad. Ex1007 ¶0063 & Fig. 6 (step 625); *see also, e.g.*, Ex1007 ¶0057 & Fig. 4 (step 435). Because the playlist refers to, but does not include media clips, the video

ad player 515 requests each media file referenced in the playlist from the video ad server 115. Ex1007 ¶¶0063 & Fig. 6 (step 635); *see also, e.g.*, Ex1007 ¶¶0057.

VIII. ANALYSIS OF THE CHALLENGED CLAIMS

A. Motivation to Combine (All Grounds)

1. Ueda, the SIP Standard, and the SDP Standard

102. As discussed above, Ueda teaches a server 191 that delivers content and a playlist to a content providing device 150 through a network. *See, e.g.*, Ex1003 ¶¶0122, 0151-0155 & Figs. 6, 7, 24. Ueda expressly teaches that the network can be “a LAN (Local Area Network) or the Internet.” Ex1003 ¶¶0531. The server 191 generates an allowed processing list (Figure 7, step 102) and/or has an authentication processing unit (Figure 24). *See, e.g.*, Ex1003 ¶¶0148, 0344-0345 & Figs. 7, 24. Ueda also teaches that a connection is established between the server 191 that delivers the content/playlist and the content providing device 150 (user equipment). *See, e.g.*, Ex1003 ¶¶0147, 0148, 0169, 0243, 0258, 0275, 0343, 0344, 0374, 0380, 0388, 0389, 0435, 0441 & Figs. 7, 24.

103. While Ueda teaches that a connection is established between the server 191 and the content providing device 150, Ueda does not explicitly describe the intermediate servers that would necessarily and inherently intermediate between and connect the content providing 150 and the server 191.

104. In my opinion, a POSITA would be motivated to combine the teachings in Ueda of the server 191 with the teachings in the SIP Standard, so as to provide intermediating resources for media sessions between agents to yield the predictable result of establishing connections between the agents. The SIP Standard teaches proxy servers that establish a connection between endpoints for a media session. Ex1004, p. 1, Abstract. The motivation for combining Ueda with SIP Standard would have been to assist Ueda's content providing device 150 with locating the server 191 on the Internet, signaling its desire to communicate with the server 191, and characterizing the communication session. *See, e.g.*, Ex1004, pp. 8-9, 11.

105. It is my opinion that a POSITA thus would have used the well-known techniques taught by the SIP Standard to improve the operation of Ueda and yield the predictable result of establishing a media session between agents. Additionally, it is my opinion that 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. Ex1010, p. 3 § 1.1. As such, a POSITA would have looked to Internet standards, such as the SIP Standard, as well-known, established techniques for establishing connections between agents over the Internet.

106. Additionally or alternatively, it is my opinion that a POSITA would have been motivated to substitute a known element in the form of the authentication processing unit from the server 191 of Ueda with another known element in the form of the proxies of the SIP Standard, and thus placed one or more connection control servers between the server 191 and the content providing device 150. The SIP Standard teaches that proxy servers “authenticate and authorize users for services.” Ex1004, p. 1. This is part of SIP’s “suite of security services, which include denial-of-service prevention, authentication (both user to user and proxy to user), integrity protection, and encryption and privacy services.” Ex1004, p. 10. In SIP, “[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, p. 37. Security, therefore, would have provided further motivation for a POSITA to have added the proxy servers of the SIP Standard to the system of Ueda.

107. As such, it is my opinion that it would have been obvious for a POSITA to select the SIP Standard from other Internet protocols, with a reasonable expectation of success in intermediating a media session between Ueda’s server 191 and the content providing device 150 of Ueda.

108. While Ueda in combination with the SIP Standard teaches proxy servers that are configured to intermediate between the content providing device 150 and the server 191 and establish a connection therebetween for a multimedia session,

the SIP Standard does not explicitly describe insertion of media details, transport addresses, and other session description metadata for initiating the multimedia sessions.

109. The SIP Standard and the SDP Standard are both IETF protocols. The SDP Standard states that “[t]he SIP messages. . . *are commonly formatted using SDP.*” Ex1005 p. 4, § 3.1; *see also, e.g.*, Ex1005 p. 5. A POSITA thus would have been motivated to use the SDP Standard to format messages in SIP.

110. Further, as discussed above, the SDP Standard teaches a protocol “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, it is my opinion that a POSITA would have been motivated to combine the teachings of the SDP Standard with the teachings of Ueda and the SIP Standard so as to convey media details, transport addresses, and other session description metadata to the participants for initiating multimedia sessions. The SIP Standard and the SDP Standard themselves teach such a motivation. *See* Ex1005, p. 4, § 3.1 (“The SIP messages used to create sessions carry session descriptions that allow participants to agree on a set of compatible media types. ***These session descriptions are commonly formatted using SDP.*** When used with SIP, the offer/answer model provides a limited framework for negotiation using SDP.”); *see also, e.g.*, Ex1004, p. 10, Ex1005, pp. 1, 13-14.

2. Ueda, the SIP Standard, and Bechtolsheim

111. As discussed above, Bechtolsheim teaches determining the bandwidth requirements for each segment of content data and executing a process for guaranteeing this bandwidth at the same time that the playlist is prepared. In my opinion, a POSITA would have been motivated to combine Bechtolsheim with Ueda to maintain the quality of the video and avoid a situation in which the data stream requires a higher bandwidth than available. 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.”).

112. Additionally, it is my opinion that a POSTIA would have been motivated to combine Bechtolsheim with the SIP Standard to provide a protocol for describing multimedia sessions and to provide timing information, such as bandwidth requirements, in metadata to participants for initiating multimedia sessions. The SIP Standard and Bechtolsheim themselves teach such a motivation. *See, e.g.*, Ex1004, p. 9, § 2; p. 10, § 2; Ex1006 ¶¶0034, 0038, 0049.

3. Ueda and Cohee

113. As discussed above, Cohee teaches transmitting a request for a media clip referenced in a playlist. In my opinion, a POSITA would have been motivated to combine the teachings of Cohee with the teachings in Ueda to make it possible for media clips to reside at any location, including at a remote server on the Internet.

Cohee itself teaches such a motivation. *See, e.g.*, Ex1007 ¶0053 (“Because the playlist contains a reference to each media clip and does not include the media data itself, it is possible for a media clip to reside at any location on the Internet accessible by a URL.”). Additional motivations would have been to reduce dedication of end-user equipment local storage resources for storing main content and sub content, and to reduce privacy risks for content providers that could occur by permitting local storage of content.

B. Ground 1: Ueda in View of the SIP Standard and the SDP Standard Renders Obvious Claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36.

114. In my opinion, the combination of Ueda, the SIP Standard, and the SDP Standard renders obvious claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36. In the discussion that follows, I explain the correspondence between the disclosures of the prior art and each claim limitation.

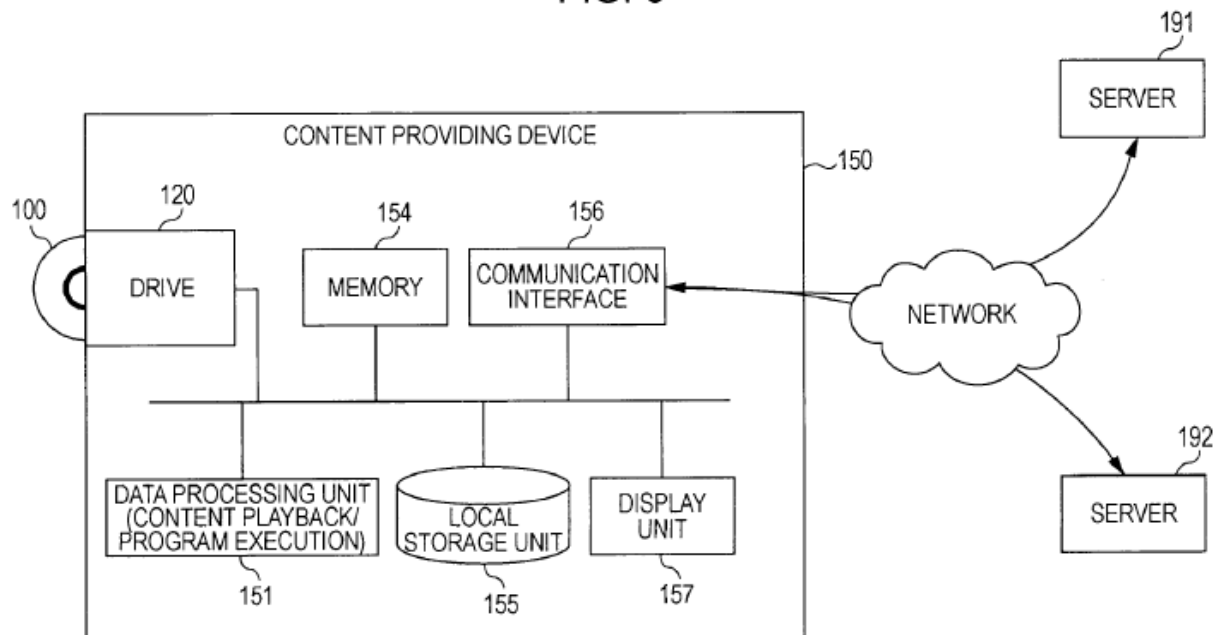
1. Claim 1 [preamble]: “A content delivery system comprising”

115. In my opinion, Ueda discloses a content delivery system, and therefore teaches the preamble of claim 1 of the ’427 Patent.

116. In particular, Figure 6 of Ueda (reproduced below) teaches a content delivery system. Ueda teaches that the system of Figure 6 provides for content download processing of a content providing device 150 from a server 191 via a network. Ex1003 ¶¶0037, 0117-0116 and Fig. 6. More particularly, Ueda teaches

that the content providing device can obtain content (download content) from a server connected through a network. Ex1003 ¶0117-0119 & Fig. 6.

FIG. 6



117. Accordingly, to the extent that the preamble of claim 1 of the '427 Patent is limiting, Ueda teaches it.

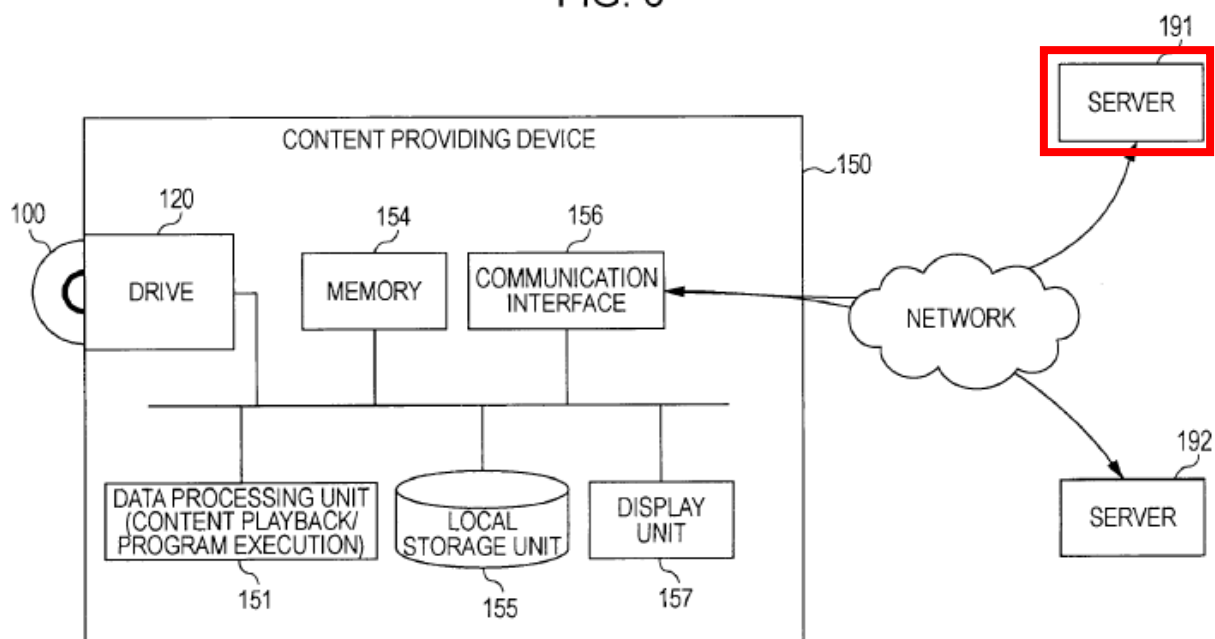
a. Claim 1 [element 1a]: “an application server system”

118. In my opinion, Ueda discloses a content delivery system comprising an application server system, and therefore teaches element 1a of claim 1 of the '427 Patent.

119. Figure 6 of Ueda teaches that the content delivery system comprises **an application server system** in the form of a server 191. Ex1003, Fig. 6. The server 191 is configured to deliver a content management application (BD-J app 3) 332,

management data 333, content 334, and a bind file 335 to a content providing device 150. Ex1003 ¶¶0122, 0151-0155 & Fig. 7; *see also, e.g.*, Ex1003, Fig. 17 (disclosing that the server 191 is configured to deliver commercial (CM) content 401, a playlist 402 and a bind file 403), Fig. 19 (disclosing that the server 191 is configured to deliver main content 451, a playlist 452, and a bind file 453), Fig. 24 (disclosing that the server 191 is configured to deliver a playlist 511 and a bind file 512), Fig. 30 (disclosing that the server 191 is configured to deliver commercial (CM) content 641 and a bind file 642).

FIG. 6



120. Figures 31-33 contain a similar disclosure as Figure 6 of an application server system in the form of a server 730 that is configured to deliver a content

management application (BD-J app #3) 732, encrypted sub-content 737/751/771, and other data. Ex1003, Figs. 31-33.

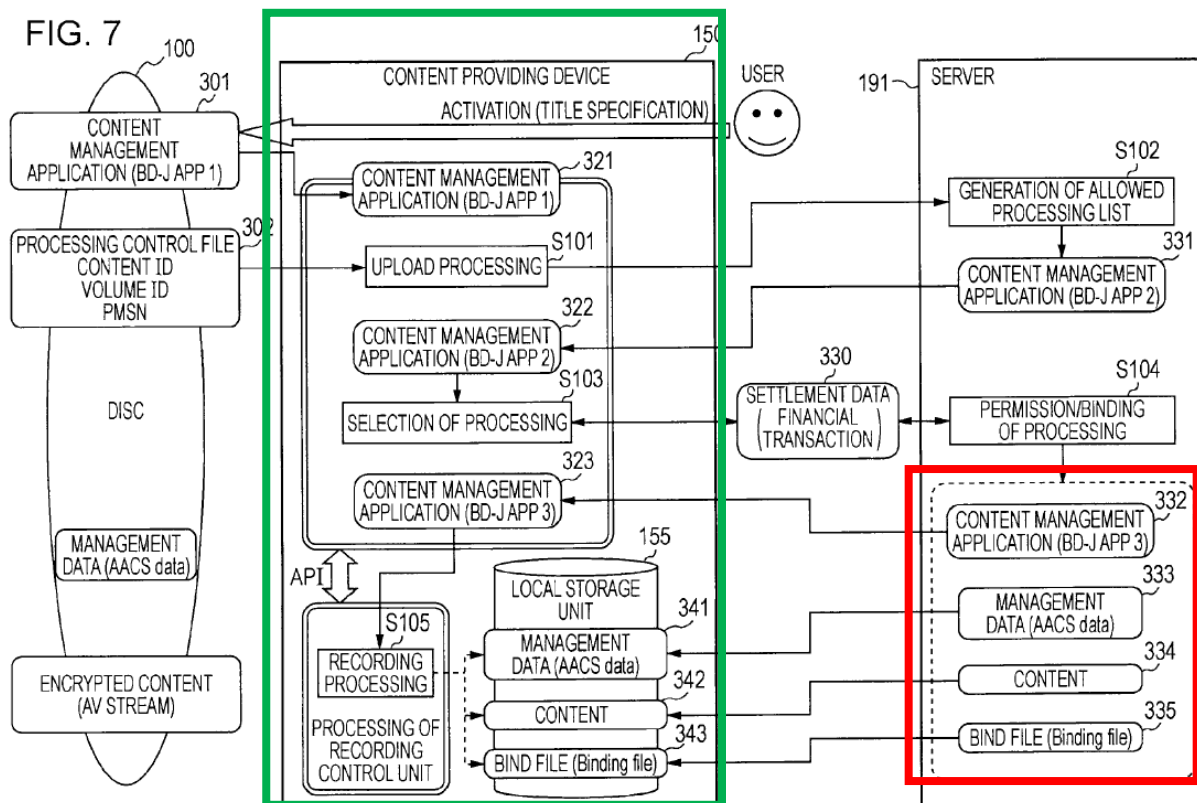
121. Accordingly, Ueda teaches element 1a of the '427 Patent.

- b. Claim 1 [element 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”**

122. Ueda in view of the SIP Standard discloses 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, and therefore teaches element 1b of claim 1 of the '427 Patent.

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

123. Figure 7 of Ueda (reproduced below) teaches that the server 191 is configured to “generate[] 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 the content providing device 150. Ex1003 ¶0148 & Fig. 7 (step S102).



124. Immediately prior to step S102, the content providing device 150 in step S101 transmits “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. The server 191 thus is configured to receive equipment specification information (a user ID and/or a content providing device ID) transmitted by a user equipment (the content providing device 150). *See also, e.g.,* Ex1003 ¶¶0169 (“[A]s described above, a transmission identifier may be set variously, such as one of these disc recorded identifiers, *user identifier, content providing device identifier*, or a combination of these, or the like.”), 0243 (“[A]n

arrangement may be made wherein a ***user ID, content providing device ID***, and so forth are transmitted by the settings of the content management application (BD-J app 1).”), 0258 (“[A] ***user ID, content providing device ID***, and so forth are transmitted in some cases depending on the settings of the content management application (BD-J app 1).”), 0275 (“[A] ***user ID, device ID***, and so forth may be included in the transmission information.”).

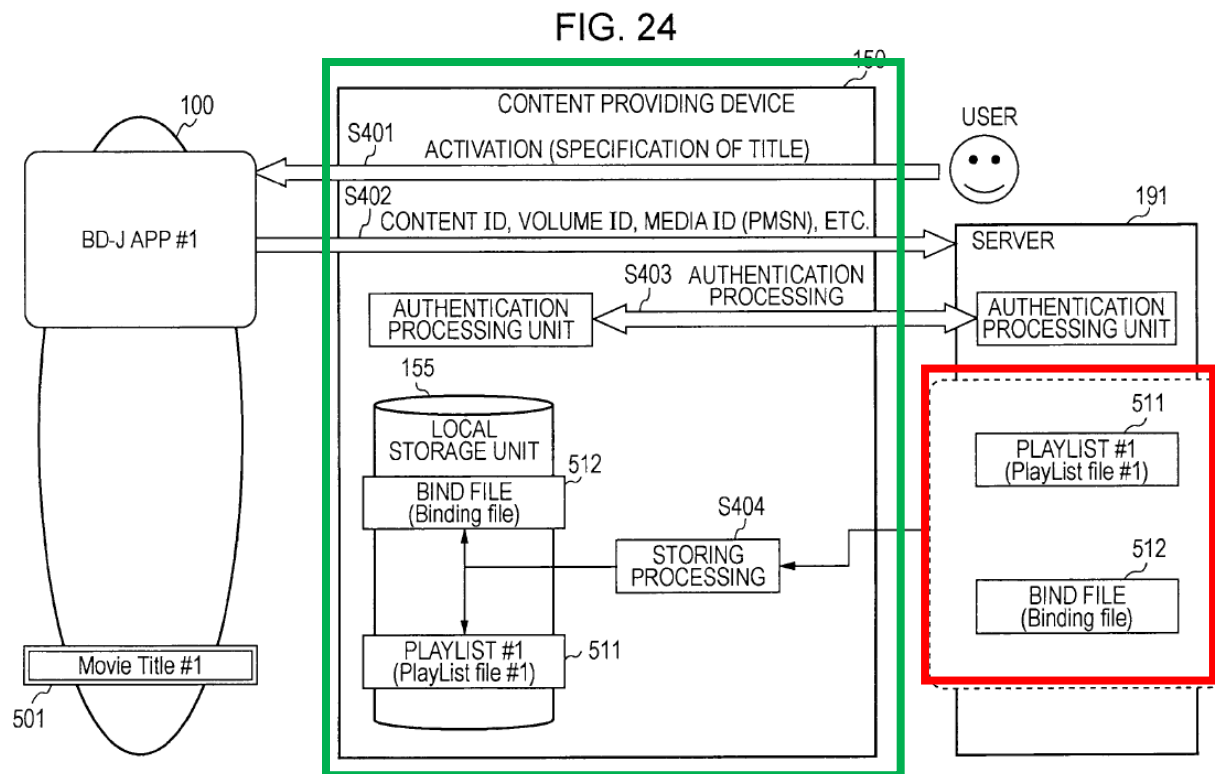
125. Figures 31-33 contain a similar disclosure as Figure 7 of a server 730 that is configured to “generate[] an allowed processing list which is a list of processing which the user (content providing device 150) is allowed to perform, based on a content ID or user ID in download request data from the content providing device.” Ex1003 ¶0485 & Figs. 31-33 (steps S821 and/or S822). The server 730 executes other “download content providing processing” that “is equivalent to processing described with reference to FIG. 7 and others.” Ex1003 ¶0485.

126. Additionally or alternatively, as shown in Figure 24 of Ueda (reproduced below), Ueda teaches that a portion of the server 191 may be configured to have an authentication processing unit. Ueda describes how the authentication processing unit controls the connection between the server 191 (an **application server system**) and the content providing device 150 (a **user equipment**) in part as follows:

The content providing device 150 transmits identification data indicating the validity of the disc or the validity of the content providing

device to the server 191, the server 191 performs authentication processing to which the identification data is applied, and ***as a condition that the validity of the disc or the validity of the content providing device has been confirmed, the content providing device 150 can receive the playlist*** employed for playback processing of a disc recorded content.

Ex1003 ¶¶0344-0345.



127. The authentication processing unit performs authentication processing in step S403. Ex1003 ¶¶0344 & Fig. 24. Immediately prior to step S403, the content providing device 150 in step S402 transmits a user ID and a content providing device ID to the server 191. Ex1003 ¶¶0343. The server 191 thus is configured to receive equipment specification information (***a user ID and/or a content providing device***

ID) transmitted by a user equipment (the content providing device 150). *See also*, e.g., Ex1003 ¶¶0374, 0380, 0388 (“[A]n arrangement may be made wherein **user 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.

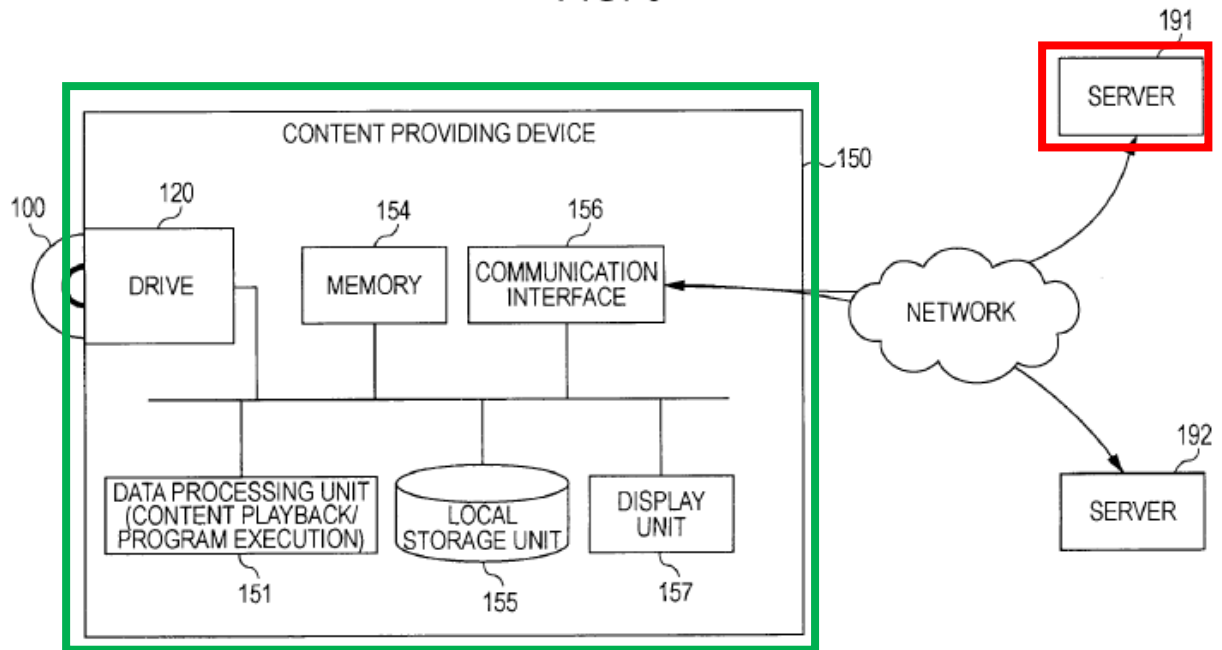
128. Accordingly, Ueda teaches the limitation in element 1b of “equipment specification information transmitted by a user equipment.”

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

129. Figure 6 of Ueda (reproduced below) teaches **an application server system** (the server 191) that is connected to **user equipment** (the content providing device 150) through a network. Ex1003, Fig. 6. Ueda describes that the content providing device 150 includes a communication interface 156 for executing communications through the network. Ex1003 ¶0118 & Fig. 6. As discussed above for Figures 7 and 24, the server 191 is configured to receive equipment specification information from the content providing device 150 (the user ID and/or the content providing device ID). The content providing device 150 thereafter obtains content from the server 191. Ex1003 ¶0119 & Fig. 6. Because the network is between the content providing device 150 and the sever 191, the network necessarily receives the

user ID and/or the content providing device ID before these identifiers are received by the server 191.

FIG. 6



130. A connection thus is established between (1) an application server system (the server 191) and (2) a user equipment (the content providing device 150). The connection is also shown in Figure 7 by the arrows showing the transmission of the content management application (BD-J app 3) 332, the management data 333, the content 334, and the bind file 335 from the server 191 to the content providing device 150. The content management application (BD-J app 2) 331 provides “a list of processing which the user (content providing device 150) is allowed to perform, based on the identification information included in the received data.” Ex1003 ¶0148. As noted above, the identification information may include “at least one of

a *user ID and content providing device ID.*” Ex1003 ¶0147; *see also* Ex1003 ¶¶0169, 0243, 0258, 0275.

131. The connection is further shown in Figure 24 by the arrow showing the transmission of the playlist 511 and the bind file 512 from the server 191 to the 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. As noted above, the validity of the 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. The server 191 thus is connected to the user equipment (the content providing device 150) based on received equipment specification information (the user ID and/or the content providing device ID).

132. Accordingly, Ueda teaches the limitation in element 1b of “a connection between the application server system and the user equipment based on the received equipment specification information.”

(3) The 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.”

133. Under one interpretation of claim 1, element 1b might be read to require that the “one or more connection control servers” be separate from the application server system. Ueda teaches one or more intermediate servers in the form of a “network” configured to be connected on one side to a communication interface 156 of the content providing device 150 and on the other side to the server 191. Ex1003 ¶¶0117-0118 & Fig. 6. The connection control functions of Ueda discussed above, however, are part of the server 191 itself.

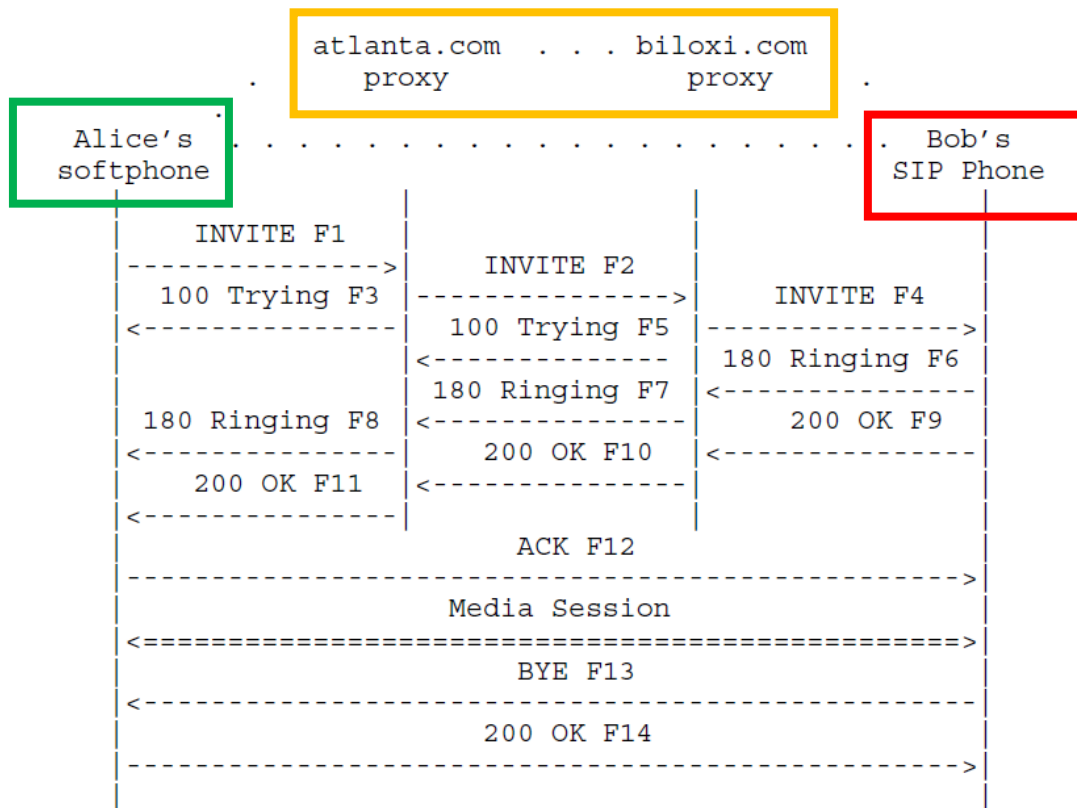
134. The SIP Standard makes clear that it would have been obvious for a POSITA to have implemented one or more connection control servers in the network of Ueda, in the form of one or more proxy servers between the server 191 and the content providing device 150. These proxy servers would have established the connection between the server 191 and the content providing device 150 based on the equipment specification information transmitted by the content providing device.

135. The SIP Standard teaches **one or more connection control servers** in the form of one or more proxy servers that are between two endpoints. The standard describes “an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants” (e.g., a user equipment and

an application server). Ex1004, p. 1 (Abstract); *see also* Ex1004, p. 9 § 2. In particular:

SIP invitations used to create sessions carry session descriptions that allow participants to agree on a set of compatible media types. SIP makes use of elements called *proxy servers to help route requests to the user's current location, authenticate and authorize users for services*, implement provider call-routing policies, and provide features to users.

Ex1004, p. 1 (Abstract). Figure 1 of the SIP Standard (reproduced below) shows two proxy servers between a user equipment (Alice's softphone) and a server system (Bob's SIP phone).



136. Figure 1 of the SIP Standard also shows an example of a SIP message exchange between two users, Alice and Bob. Ex1004, pp. 11-12 & Fig. 1. The figure shows “two SIP proxy servers that act on behalf of Alice and Bob to facilitate the session establishment.” Ex1004, p. 11. Alice’s softphone transmits a SIP invite message (INVITE F1) containing Bob’s SIP identity—a SIP Uniform Resource Identifier (URI)—to a first proxy server, which communicates with a second proxy server and ultimately Bob’s IP phone. Ex1004, pp. 11-12 & Fig. 1. Bob’s softphone responds with a 200 (OK) F9 message to indicate that Bob is willing to establish a session with Alice. Ex1004, p. 15 & Fig. 1. The 200 (OK) message “is routed back through the two proxies and is received by Alice’s softphone, which ... indicates that the call has been answered.” Ex1004, p. 16. Next, Alice’s softphone “sends an acknowledgement message, ACK, to Bob’s SIP phone to confirm the reception of the final response (200 (OK)).” Ex1004, p. 16.

137. The proxy servers thus have established a connection between Alice’s softphone and Bob’s SIP phone, and the two “endpoints have learned each other’s address from the Contact header fields through the INVITE/200 (OK) exchange, which was not known when the initial INVITE was sent.” Ex1004, p. 16 & Fig. 1. This “completes the INVITE/200/ACK three-way handshake used to establish SIP sessions.” Ex1004, p. 16 & Fig. 1. The media session between Alice and Bob has now begun, and they can exchange media packets. Ex1004, p. 16 & Fig. 1; *see also*

Ex1004 § 13, pp. 77-86. The SIP Standard thus teaches one or more connection control servers (e.g., proxy servers) that are configured to establish a connection between two endpoints.

138. Additionally, the SIP Standard teaches that the proxy servers (the one or more connection control servers) are configured to receive a logical address or logical identity transmitted by a user equipment and that the connection established above is based on the received 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). In particular, the SIP Standard teaches that:

The INVITE request contains a number of header fields. Header fields are named attributes that provide additional information about a message. The ones present in an INVITE include a unique identifier for the call, the destination address, *Alice's address*, and information about the type of session that Alice wishes to establish with Bob.

Ex1004, p. 11; *see also* Ex1004, p. 35, § 8.1.1 (“A valid SIP request formulated by a UAC MUST, at a minimum, contain the following header fields: To, **From**, CSeq, Call-ID, Max-Forwards, and Via; all of these header fields are mandatory in all SIP requests.”), p. 37, § 8.1.1.3 (“The From header field *indicates the logical identity of the initiator of the request*, possibly the user’s address-of-record.”). As described above, the SIP Standard teaches that Alice’s softphone sends the INVITE F1 to the proxy servers.

139. Below is an example of an INVITE F1 message from the SIP Standard:

```
INVITE sip:bob@biloxi.com SIP/2.0
Via: SIP/2.0/UDP pc33.atlanta.com;branch=z9hG4bK776asdhds
Max-Forwards: 70
To: Bob <sip:bob@biloxi.com>
From: Alice <sip:alice@atlanta.com>;tag=1928301774
Call-ID: a84b4c76e66710@pc33.atlanta.com
CSeq: 314159 INVITE
Contact: <sip:alice@pc33.atlanta.com>
Content-Type: application/sdp
Content-Length: 142
```

(Alice's SDP not shown)

Ex1004, p. 12. This INVITE FI message from the SIP Standard is identical to the header (HE) shown in Figure 9 of the '427 Patent.

140. Thus, the SIP Standard teaches that a user equipment (Alice's softphone) transmits the logical identity or logical address of the request initiator to one or more connection control servers (e.g., proxy servers), which uses that equipment specification information to establish a connection between a user equipment (Alice's softphone) and a server system (Bob's SIP phone).

(4) Ueda combined with the SIP Standard teaches element 1b.

141. In my opinion, it would have been obvious to a POSITA to implement one or more connection control servers in the network of Ueda as the proxy servers of the SIP Standard, between the server 191 of Ueda and the content providing device 150 of Ueda. As so implemented, these proxy servers would necessarily and

inherently have received equipment specification information (e.g., the user ID and/or the content providing device ID of Ueda) from the content providing device 150, which would have been used by the proxy servers to establish the connection. This is because, in the SIP Standard, a user equipment is required to transmit a logical identity or logical address to the proxy servers, which use that equipment specification information to establish the connection between the two endpoints.

142. Accordingly, Ueda in combination with the SIP Standard teaches element 1b.

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

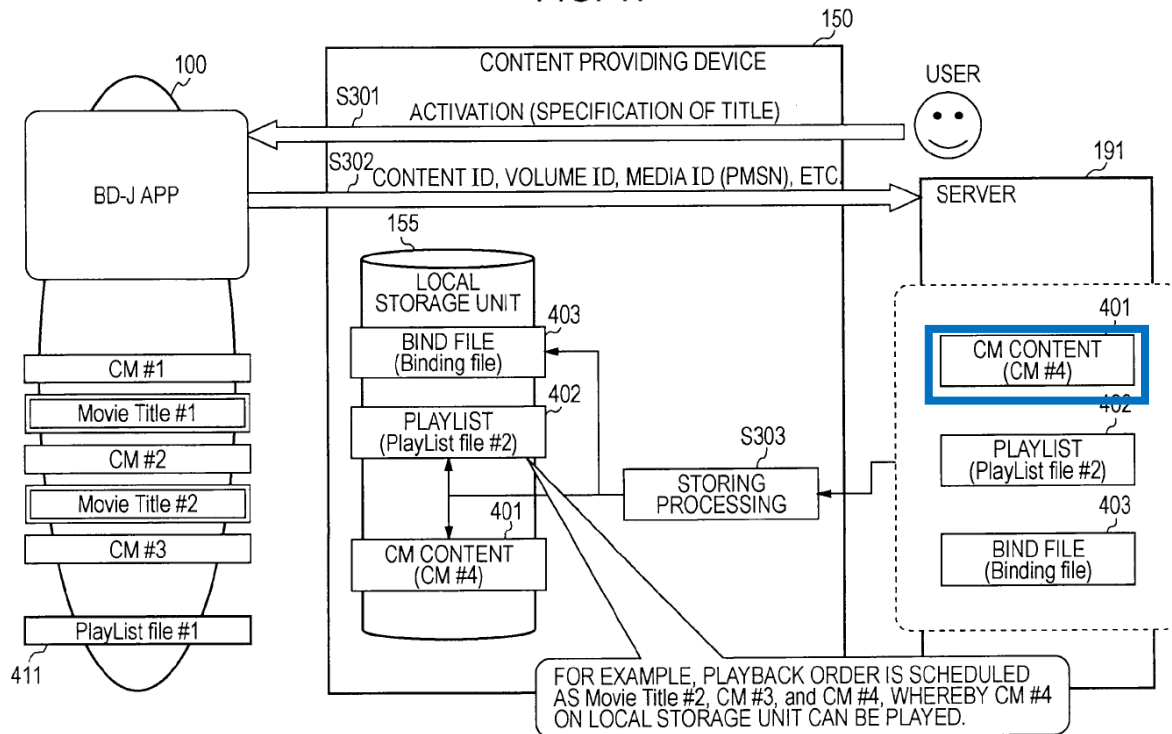
143. In my opinion, Ueda discloses an application server system comprising a memory for storing sub content data representing sub content and main content data representing main content, and therefore teaches element 1c of claim 1 of the '427 Patent.

- (1) **Figures 17 and 30 of Ueda teach a memory for storing sub content data representing sub content.**

144. Figure 17 of Ueda (reproduced below) teaches that the server 191 comprises a memory for storing sub content data representing sub content—the commercial (CM) content 401, also identified as “CM #4.” Ueda teaches that the

commercial (CM) content 401 is “to be downloaded and obtained from the server 191” by the content providing device 150. Ex1003 ¶0241; *see also* Ex1003 ¶¶0245, 0248.

FIG. 17



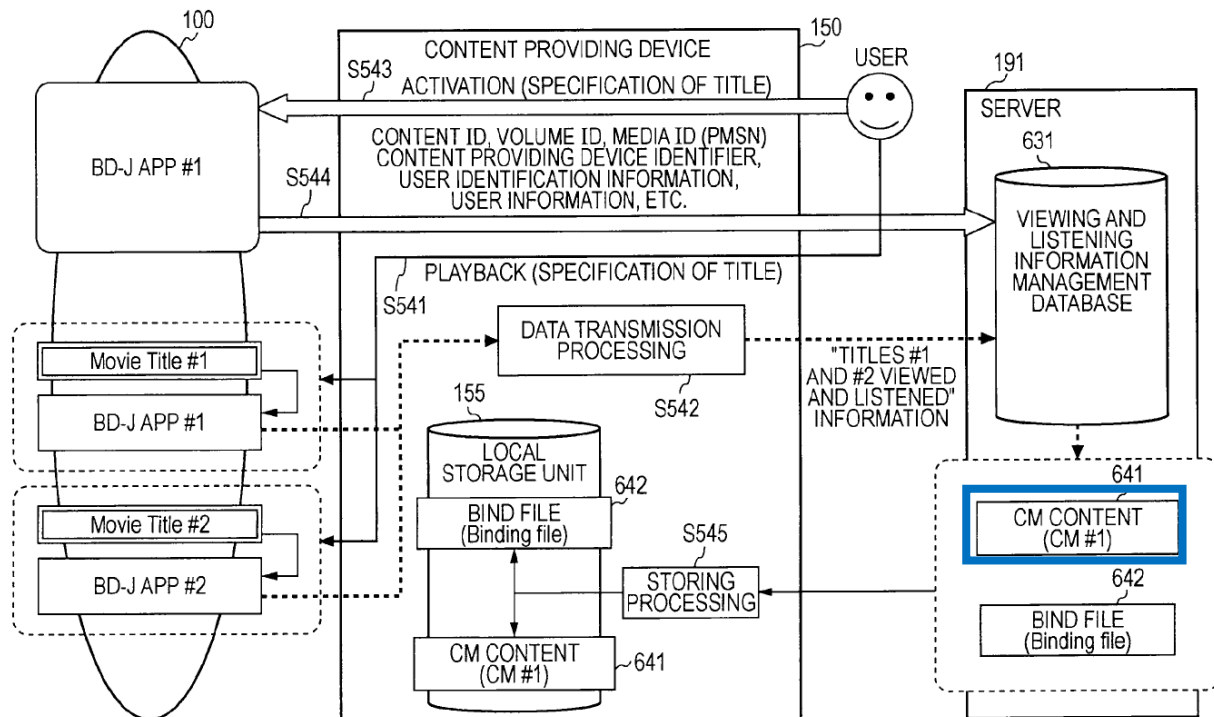
145. The commercial (CM) content 401 is sub content data representing sub content. In fact, Ueda explicitly identifies the commercial content as “sub content.” *See, e.g.*, Ex1003 ¶0119 (“The content providing device 150 obtains a *sub content* ..., such as caption data or dubbed-in data, *commercial content*, service content, program such as Java (registered trademark) or the like, ... through servers 191 and 192”).

146. The server 191 obtains the commercial (CM) content 401 and other download content “from a database,” which is a type of memory. Ex1003 ¶0244; *see also* Ex1003 ¶0259 (“Upon receiving a download request from the content providing device 150, the server 191 obtains a download content from a **database**”). Moreover, a POSITA would have understood that the server 191 shown in Figure 17 would necessarily and inherently have included a memory for storing the commercial (CM) content 401. A memory is how servers, like the server 191, necessarily and inherently stored data, like the commercial (CM) content 401, at the time that Ueda was filed. Figure 17 of Ueda thus teaches that the server 191 comprises a memory (in the form of a database) for storing sub content data representing sub content (the commercial content 401).

147. Additionally or alternatively, Figure 30 of Ueda (reproduced below) teaches that the server 191 comprises a memory for storing sub content data representing sub content—the commercial (CM) content 641, also identified as “CM #1.” Ueda teaches that “[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* Ex1003 ¶0413 (“FIG. 30 is a diagram illustrating a processing example wherein the server 191 ... determines and provides a commercial content to be provided to the user from the server 191.”), ¶0439 (“[T]he server can analyze

the preference of the user to provide a commercial content according to the user's preference"), ¶0443 (“[T]he server 191 performs processing for providing a commercial content adapted to the user's preference”). As discussed above, the commercial (CM) content is sub content data representing sub content, *see, e.g.*, Ex1003 ¶0119, and is obtained by the server 191 from a database, which is a type of memory.

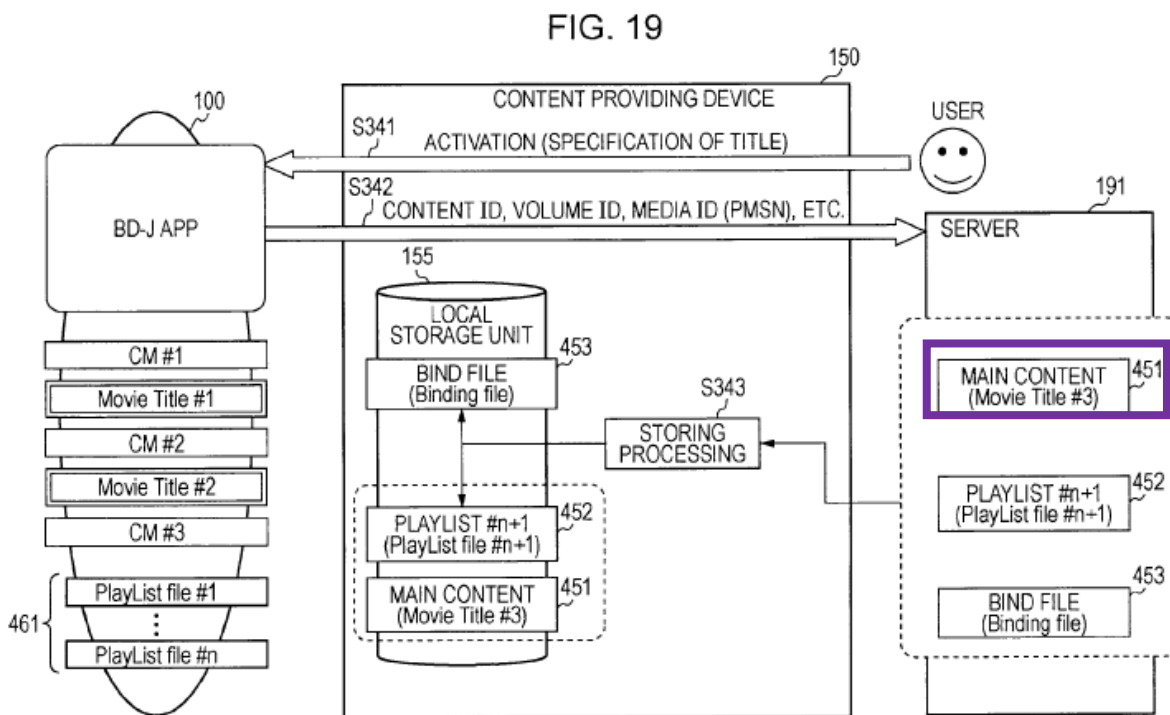
FIG. 30



148. Figures 17 and 30 of Ueda thus teach that the server 191 comprises a memory (in the form of a database) for storing sub content data representing sub content (the commercial content 401 and 641).

(2) Figure 19 of Ueda teaches a memory for storing main content data representing main content.

149. Figure 19 of Ueda (reproduced below) teaches that the server 191 comprises a memory for storing main content data representing the main content 451, also identified as “Movie Title #3.” Ueda teaches that “the main content (Movie Title #3) 451 ... is a download content” from the server 191. Ex1003 ¶0272; *see also* Ex1003 ¶¶0271 (“The example shown in FIG. 19 is an example wherein a new main content (Movie Title #3) 451 is provided to the content providing device 150 on the user side”), 0273, 0276-0277.



150. The server 191 obtains the main content 451 and other download content “from a database,” which is a type of memory. Ex1003 ¶0276 (“Upon

receiving a download request from the content providing device 150, the server 191 obtains a download content corresponding to identification information from a *database*). Moreover, as discussed above, a POSITA would have understood that the server 191 would necessarily and inherently have included a memory for storing the main content 451. A memory is how servers, like the server 191, necessarily and inherently stored data, like the main content 451, at the time that Ueda was filed.

151. Figure 19 of Ueda thus teaches that the server 191 comprises a memory (in the form of a database) for storing main content data representing main content (the main content 451).

(3) Figures 17 and/or 30 of Ueda in combination with Figure 19 teach element 1c.

152. Although different figures of Ueda show the commercial (CM) content 401/641 and the main content 451 being stored in a memory of the server 191, Ueda teaches that both types of content can be stored in the memory of the server. Among other things, Ueda states that “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.” Ex1003 ¶0239. Figures 17, 19 and 30 thus show examples for the download processing of different types of content stored in the memory of the server 191, and Ueda makes clear that all of these types of

content, including both commercial (CM content) and main content, can be stored in and downloaded from a single server.

153. Additionally or alternatively, it is my opinion that a POSITA would have understood that the example of Figure 19 (showing the main content 451 stored in the memory of the server 191) could be combined with the examples of Figures 17 and/or 30 (showing the commercial content 401/641 stored in the memory of the server 191). A POSITA would have been motivated to combine these examples so that both the main content 451 and the commercial (CM) content 401/641 could be stored in and downloaded from the same server, as taught in paragraph 0239 of Ueda.

(4) Figures 17, 19 and 30 of Ueda may be combined with Figures 6, 7 and 24 of Ueda.

154. Although different figures of Ueda show the generation of the allowed processing list (step S102 in Figure 7) and the authentication processing (step S403 in Figure 24), Ueda teaches that these steps can be performed with the examples of the other figures. Among other things, Ueda expressly teaches that the activation processing described in Figure 7 is equivalent to the activation processing involved in the examples of Figures 17 and 19. Ex1003 ¶¶0242-0243, 0274-0275. Ueda thus explicitly contemplates using the functionality of the server 191 in Figure 7 with the functionality of the same server 191 in Figures 17 and 19. Ueda also uses the same reference numbers in Figures 17, 19 and 30 for the content providing device (150)

and the server (191) as in Figures 7 and 24, further confirming that Ueda contemplates using the functionality of the devices in Figure 7 and 24 with the devices in Figures 17, 19 and 30.

155. Additionally or alternatively, it is my opinion that a POSITA would have understood that the examples of Figures 17, 19 and 30 could be combined with the example of Figure 7 (generation of the allowed processing list) and/or Figure 24 (authentication processing). A POSITA would have been motivated to combine these examples so that the server 191 can control which processing the content providing device 150 is allowed to perform based on an identification of the user or the user equipment (Figure 7), or so that the server can authenticate the validity of the content providing device 150 based on such an identification (Figure 24).

156. Furthermore a POSITA would have understood that the content delivery systems of Figures 7, 17, 19, 24 and 30 would necessarily and inherently have included a network between the content providing device 150 and the server 191, as taught in Figure 6. A network, such as a Local Area Network or the Internet (*see, e.g.*, Ex1003 ¶0531), is how servers, like the server 191 shown in Figures 7, 17, 19, 24 and 30, necessarily and inherently received information from and established a connection with other computer systems, like the content providing device 150.

157. Accordingly, Ueda teaches element 1c.

- d. **Claim 1 [element 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”**

158. In my opinion, Ueda discloses 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, and therefore teaches element 1d of claim 1 of the '427 Patent.

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

159. Ueda discloses that the server 191 receives a content delivery request in the form of a “download request” transmitted by a user equipment (the content providing device 150). For example, with respect to Figure 19, Ueda teaches as follows:

Upon *receiving a download request from the content providing device 150*, the server 191 obtains a download content corresponding to identification information from a database based on the received disc identification information and so forth to transmit this to the content providing device 150. In this case, transmission data is the following data.

- (a) *main content (Movie Title #3)* 451,
- (b) playlist file (PlayList file #n+1) 452, and
- (c) bind file (Binding file) 453

Ex1003 ¶¶0276-0279; *see also, e.g.*, Ex1003 ¶0244 (discussing Figure 17: “Upon ***receiving a download request from the content providing device 150***, the server 191 obtains a download content from a database”), ¶0259 (same for Figure 18), ¶0299 (same for Figure 21), ¶0344 (discussing Figure 24: “Upon ***receiving a download request from the content providing device 150*** ...”), ¶0370 (“The server ... receives a content download request from the client (content providing device 150) , and provides a content, e.g., ***main content*** such as a movie or the like, commercial content, application program, playlist, usage control information, or the like to the client.”), ¶0372, ¶¶0385-0388, ¶0438 (discussing Figure 30: “Upon ***receiving a content download request from the content providing device 150*** ...”), ¶0485 (discussing Figure 31: “Upon ***receiving a content download request from an unshown user’s content providing device***, the server 730 executes download content providing processing.”), ¶509 (same for Figure 32), ¶529 (same for Figure 33).

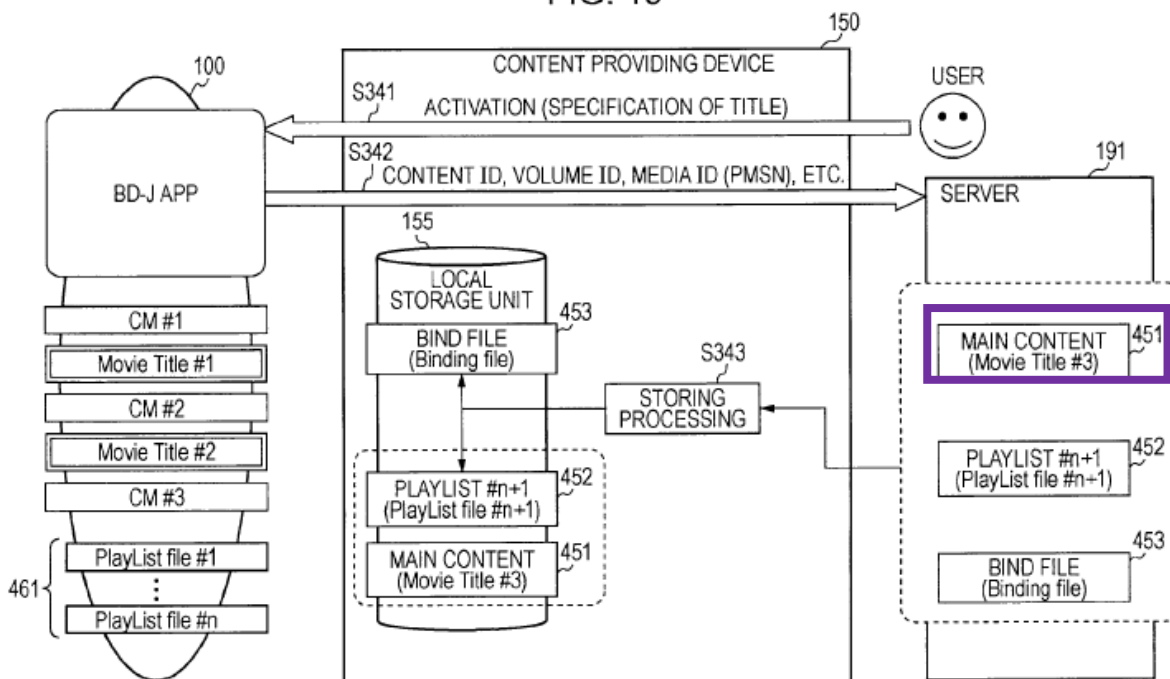
160. Ueda expressly teaches that the content providing device 150 includes a receiver in the form of “a communication interface 156 for executing communication through a network.” Ex1003 ¶0118 & Fig. 6. A POSITA would have understood that the server 191 would necessarily and inherently have included a corresponding receiver for receiving the download request transmitted by the content providing device 150. A receiver is how servers, like the server 191,

necessarily and inherently received requests and other data from devices connected to a network at the time that Ueda was filed.

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

161. Ueda teaches that, after receiving the download request transmitted by the content providing device 150, the 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 the server 191 receives a download request from the content providing device 150), ¶0370 (teaching the provision of “**main content** such as a movie or the like” after the server receives a content download request from the content providing device 150), Fig. 19. The transmission of the main content, identified as “Movie Title #3,” from the server 191 to the content providing device 150 is shown in Figure 19 of Ueda (reproduced below).

FIG. 19



162. For the server 191 to be able to identify and transmit the main content (such as Movie Title #3), the download request from the content providing device 150 (including “the received disc identification information and so forth” taught in paragraph 0276 of Ueda) must necessarily and inherently contain main content identification information for identifying the main content. Otherwise, the server 191 would not know to which main content to transmit.

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

164. Accordingly, it is my opinion that Ueda teaches element 1d.

- e. **Claim 1 [element 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”**

165. In my opinion, Ueda discloses a processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content, and therefore teaches element 1e of claim 1 of the '427 Patent.

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

166. Ueda discloses that the server 191 comprises a processor in the form of a “data processing unit” 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.

Ueda, Abstract; *see also, e.g.*, Ex1003 ¶0017 (teaching a “data processing unit” for “analyzing the user's preference on the client side to *provide a content adapted to the user's preference*”), ¶0019 (“The data processing unit may receive personal information from the client, accumulate the received personal information in the management database, and *employ the personal information to select a provided content.*”), ¶0020 (“The data processing unit may *provide a commercial content*”).

adapted to the user's preference to the client.”), ¶0021 (same), ¶0022 (teaching a server for “analyzing the user’s preference on the client side to ***provide a content adapted to the user's preference*** based on the accumulated information of the management database”), ¶0023 (“[A] data processing unit executes content providing processing in response to a content request from the client; with the data processing step including the steps of ... analyzing the user’s preference on the client side to ***provide a content adapted to the user's preference*** based on the accumulated information of the management database.”), ¶0028 (same), ¶0441 (same), ¶0442, 0443 (“[T]he server 191 performs processing for ***providing a commercial content adapted to the user's preference***”).

167. The data processing unit taught in Ueda thus selects stored sub content data (commercial content) based on selection information, such as user-preference or personal information. As discussed above in connection with element 1c, 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***, service content, program such as Java (registered trademark) or the like, ... through servers 191 and 192”).

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

168. 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. As disclosed in connection with Figure 30, Ueda teaches that the user-preference and personal information is recorded in a user preference information management database 631, which is a part of the server 191. Ex1003 ¶0432 & Fig. 30. Upon receiving a content download request from the content providing device 150, the 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. The 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.

169. In particular, Ueda teaches that the user-preference and personal information used to select the commercial content may relate 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. For example:

in a case wherein the viewing and listening content of the user is a movie content relating to cars, a car-related commercial is provided,

and in a case wherein the viewing and listening content of the user is a South Korean movie content, a commercial of South Korean travel or South Korean products is provided.

Ex1003 ¶0439. Thus, the attribute information contained in the user-preference and personal information also represents an attribute of the commercial content 641 that is selected by the 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.

170. Ueda thus discloses that the server 191 comprises a processor (the data processing unit) for selecting the 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.

171. Accordingly, Ueda teaches element 1e.

f. Claim 1 [element 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”

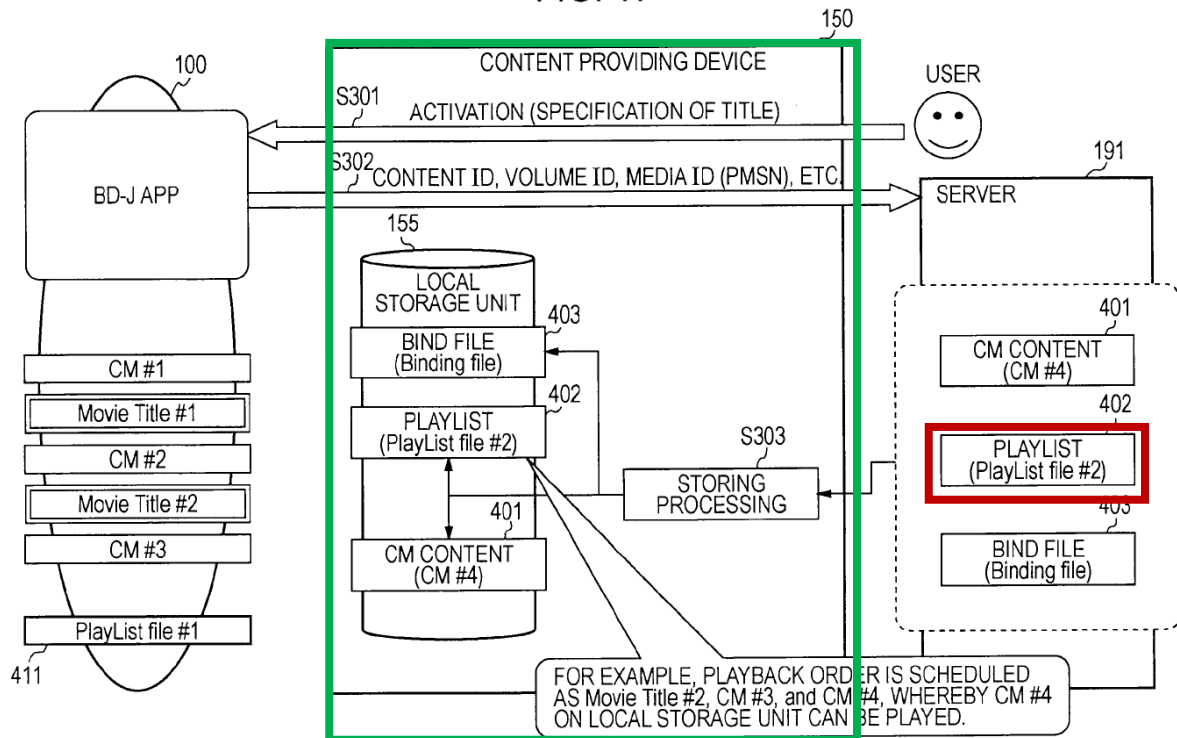
172. In my opinion, Ueda in view of the SIP Standard discloses a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control

servers to the user equipment which has transmitted the content delivery request, and therefore teaches element 1f of claim 1 of the '427 Patent.

- (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”

173. Numerous figures in Ueda expressly teach that the server 191 transmits a playlist (“selected sub-content specification information for specifying the selected sub-content”) to the content providing device 150 (“the 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. For example, Figure 17 of Ueda (reproduced below) teaches that “a new *playlist 402* in which the commercial content (CM#4) 401 serving as a download content is recorded as playback content information is also downloaded from the server and stored in the local storage unit 155 of the content providing device 150.” Ex1003 ¶0241. In this case, “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.

FIG. 17



174. The playlist file 402 contains information for specifying the commercial content (CM #4) 401 selected by the server 191. *See, e.g.,* Ueda, ¶0248 (“[T]he playlist 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 with the playlist file (PlayList file #2) 402 selected as a playback playlist being performed, content playback including the commercial content (CM#4) 401 is performed.” Ueda, ¶0253. For example, “in a case wherein the playlist file (PlayList file #2) 402 has the following playback specification information, Movie Title # 2→CM # 3→CM # 4,” the content providing device 150 plays back the content in the order specified by the playlist file (i.e., Movie Title # 2, then commercial (CM)

#3, then commercial (CM) #4). Ex1003 ¶¶0253-0254. Information for specifying the commercial content selected by the server 191 thus is contained within the playlist file 402.

175. Similarly, in connection with Figure 30, Ueda teaches that “[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. With the commercial content, “the server 191 transmits a bind file (Binding file) 642, and further a playlist as appropriate.” Ex1003 ¶¶0438. This playlist thus contains information for specifying the commercial content selected by the server 191, similar to the playlist file 402 discussed above. *See also, e.g.*, Ex1003 ¶¶0281 (describing “an example of a playlist file which the server 191 transmits to the content providing device 150 with reference to FIG. 20. As described above, a playlist is a file stipulating the playback order of contents.”), ¶¶0399-0405 (providing further examples of playlists for playing content, including commercial content, in a particular order), Fig. 20.

176. Ueda expressly teaches that the content providing device 150 includes a transmitter in the form of “a communication interface 156 for executing communication through a network.” Ex1003 ¶¶0118 & Fig. 6. A POSITA would have understood that the server 191 would necessarily and inherently have included a corresponding transmitter for transmitting the playlists to the content providing

device 150. A transmitter is how servers, like the server 191, necessarily and inherently transmitted information and data to devices connected to a network at the time that Ueda was filed.

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

(2) The 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.”

178. As discussed above for element 1b, the SIP Standard teaches one or more connection control servers in the form of proxy servers as shown in Figure 1 of the standard. Furthermore, the SIP Standard teaches that the INVITE F1 message of Figure 1 includes a request for a multimedia sessions in the form of a primitive written in Session Description Protocol (“SDP”) for describing multimedia sessions. Ex1004, p. 10; *see also* Ex1004 p. 12 (showing the INVITE message containing “Content-Type: application/sdp”). The SDP message is carried by the SIP message. Ex1004, pp. 13-14; *see also, e.g.,* Ex1004, p. 15 (showing message F9 containing “Content-Type: application/sdp”), p. 170 (describing “Content-Type”).

179. Further, as discussed above for element 1b, Bob's SIP phone responds to the INVITE F1 message from Alice's softphone by transmitting a 200 OK message F9 to the proxy servers. The SIP Standard teaches that the 200 OK message F9, like the INVITE F1 message, carries Bob's SDP message specifying information about the multimedia session. Ex1004, p. 15 (showing message F9 containing "Content-Type: application/sdp"). All of this information is transmitted between the two endpoints via the proxy servers (connection control servers). The SIP Standard thus teaches an exchange of SIP messages between two endpoints routed through one or more proxy servers.

180. While the SIP Standard does not explicitly teach a transmitter in Bob's softphone, 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. A transmitter is how devices, like Bob's softphone, necessarily and inherently transmitted information and data to other devices connected to a network at the time that the SIP Standard was published.

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

(3) Ueda combined with the SIP Standard teaches element 1f.

182. For the reasons discussed above for element 1b, a POSITA would have been motivated to combine the teaching in Ueda of transmitting the playlist 402 to the content providing device 150, with the teachings in the SIP Standard of one or more connection control servers (proxy servers) that are configured to intermediate between two endpoints and establish a connection between the two endpoints. As discussed above, a POSITA would have been motivated to combine the disclosures of Ueda and the SIP Standard so that the proxy servers of the SIP Standard establish the connection between the server 191 of Ueda and the content providing device 150 of Ueda. As so combined, the server 191 (the application server system) would necessarily and inherently have transmitted the playlist 402 via the proxy servers (one or more connection control servers) to the content delivery device 150 (the user equipment which transmitted the content delivery request).

183. Accordingly, Ueda in combination with the SIP Standard teaches element 1f.

- g. **Claim 1 [element 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”**

184. In my opinion, Ueda in combination with the SIP Standard and the SDP Standard discloses that 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, and therefore teaches element 1g of claim 1 of the '427 Patent.

- (1) **Ueda in view of the 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.”**

185. As discussed above for element 1f, Ueda in combination with the SIP Standard teaches that the server 191 comprises a first transmitter that is configured to transmit the playlist 402 via one or more connection control servers (the proxy

servers of the SIP Standard) to the user equipment which has transmitted the content delivery request (the content providing device 150).

(2) The 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.”

186. As discussed above for element 1b, the SIP Standard teaches one or more connection control servers in the form of one or more proxy servers. Figure 1 of the SIP Standard also teaches that, based on the SIP INVITE message F1, Bob’s SIP phone responds with a 200 OK F9 message to indicate that Bob is willing to establish a connection. Ex1004, pp. 12, 15 Fig. 1. The 200 OK message “is routed back through the two proxies and is received by Alice’s softphone.” Ex1004, p. 16 & Fig. 1. As shown in Figure 1 of the SIP Standard, this exchange includes providing the 200 (OK) message F9 to the proxy servers, which then transmit a 200 OK message F11 to Alice’s softphone if a connection can be established. Ex1004, p. 12. This exchange of SIP messages is identical to the A501 and C503-E501 of Figures 5, 12, 13, 15, and 18 of the ’427 Patent.

187. In the SIP Standard, a “user agent” represents an end system, a “user agent client” (UAC) generates requests, and a “user agent server” (UAS) responds to requests. Ex1004 § 8 p. 34. The SIP Standard describes that a UAS can accept 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.

188. If a 6xx response is received, indicating that a request cannot be fulfilled, the proxy server is directed to cancel all client pending transactions. Ex1004, p. 109, § 5; Ex1004, p. 114, § 10; Ex1004, p. 260. Such 6xx responses are global failures, and indicate that “the request cannot be fulfilled at any server.” Ex1004, p. 29 § 7.2; Ex1004, p. 192, § 21.6. One such response is the 606 Not Acceptable response, which 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 list of reasons in a Warning header field describing why the session described cannot be supported. Ex1004, p. 192, § 21.6.4. The Warning reason codes are listed in Section 20.43 of the SIP Standard. Ex1004, p. 192, § 21.6.4. One of these Warning reason codes is Warning 370 (“**Insufficient bandwidth**”), which indicates that “[t]he **bandwidth** specified in the session description or defined by the media exceeds that known to be available.” Ex1004, p. 182. Thus, in the SIP Standard, when a proxy server receives a 606 Not Acceptable Response with the Warning 370 reason code, 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 SIP session.

189. Accordingly, the SIP Standard 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 or defined by the media does not exceed the available bandwidth. The 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.

190. The 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 SIP Standard teaches that communication channel specification information can occur through a "Via" header field in an SIP message. SIP message headers must include a "Via" header field that specifies a transport to be used for a session between end points and identifies the location where responses are to be sent. *See, e.g.,* Ex1004, pp. 13-14, 39 (§ 8.1.1.7), 179. Thus, a POSITA would have understood that the "Via" header field can be used to specify a channel for a media session established by the proxy servers of the SIP Standard. As discussed above for element

1b, the INVITE FI message from the SIP Standard is identical to the header (HE) shown in Figure 9 of the '427 Patent containing a Via header field "SIP/2.0/UDP".

Compare Ex1001, FIG. 9 *with* Ex1004, p. 12.

(3) The SIP Standard in view of the SDP Standard 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."

191. As discussed above, the SIP Standard teaches that the proxy servers execute a process for guaranteeing a communication bandwidth required for a media session as a process for establishing the connection. Further, the SIP Standard teaches that, as part of establishing a media session, the proxy servers receive a 200 (OK) response from an application server system (e.g., Bob's SIP phone in this example) based on a request to initiate a session from a user equipment (e.g., Alice's softphone in this example). As described above, the SIP Standard teaches that the proxy servers check whether the bandwidth specified in the session description or defined by the media exceeds that known to be available. Ex1004, pp. 181-182. If the bandwidth is insufficient, the SIP Standard teaches that the proxy servers issue a 606 Not Acceptable Response that includes Warning 370 (Insufficient bandwidth) (Ex1004, pp. 181-182, 192) and cancel the pending session. Ex1004, p. 109, § 5.

192. SIP is not a vertically integrated communications system. Ex1004, p. 9, § 2. Rather, SIP is “a component that can be used with other IETF protocols to build a complete multimedia architecture.” Ex1004, p. 9, § 2. One of these IETF (Internet Engineering Task Force) protocols is Session Description Protocol (“SDP”) for describing multimedia sessions. Ex1004, p. 10, § 2. Thus, the body of a SIP message contains a description of the session that can be encoded in SDP. Ex1004, p. 13.

193. The SDP Standard (Ex1005) 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. These session descriptions are commonly formatted using SDP.” Ex1005 p. 4, § 3.1; *see also, e.g.*, Ex1005 p. 5 (“The purpose of SDP is to convey information about media streams in multimedia sessions to allow the recipients of a session description to participate in the session.”). An SDP session description includes the session name and purpose, the time(s) that the session is active, 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.

194. In this regard, the SDP Standard teaches that the SDP description can include a bandwidth (“b=”) field that “denotes the proposed *bandwidth* to be used by the session or media.” Ex1005, p. 16, § 5.8. Two values are defined for the

bandwidth type: (1) conference total (“CT”); and (2) application specific (“AS”). Ex1005, p. 16, § 5.8. As described in the SDP Standard, “CT gives a total bandwidth figure for all the media at all sites. AS gives a bandwidth figure for a single media at a single site, although there may be many sites sending simultaneously.” Ex1005, p. 16, § 5.8.

195. At the time that the alleged invention was made, a POSITA would have understood that 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 carried by the SIP message. *See, e.g.*, Ex1005, pp. 1, 4, 5, 10, 12, 13, 21, 22, §§ 5.4, 5.5, 5.13, 5.14. The following are just a few examples of well-known ways to insert media information into an SDP description:

- The SDP Standard describes an attribute field (“a=”) that can be used to tailor SDP to particular applications or media, and that this attribute field can contain references to external content. Ex1005, pp. 9, 21. The attribute field could be used to carry a pointer to a media stream. *See, e.g.*, Ex1011 (defining “a new Session Description Protocol (SDP) media-level attribute: ‘label’”. The ‘label’ attribute carries a pointer to a media stream in the context of an arbitrary network application that uses SDP. The sender of the SDP document can attach the ‘label’ attribute to a particular media stream or streams. The

application can then use the provided pointer to refer to each particular media stream in its context.”).

- The SDP Standard describes a session information field (“i=”) that can be used to provide textual information about a media session. Ex1005, p. 12.
- The 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; *see also*, e.g., Ex1015 ¶¶0070-0071 (describing that “[an] ***SDP file includes a URL associated with a particular playlist***”) (emphasis added).

196. Similarly, the SIP Standard provides another example of a well-known way to insert media information pertaining to a requested media session in a SIP message that a POSITA would have known about at the time that the alleged invention was made. For example, the 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”). A POSITA would have understood that it was common practice to specify accepted content types in this Content-Type header, which includes all media types accepted by the HTTP 1.1 protocol. *See* Ex1004 p. 170. These accepted media types included a variety of different text options, such as those listed in Ex1012.⁷ The

⁷ While Ex1012 is dated after November 2008, a POSITA would have known that the different text options listed in Ex1012 existed before November 2008. *See, e.g., Ex1012* (citing RFC2046, RFC3676, and RFC5147 for plain text), *id.* (citing

“Content-Type” header field specifies the format for a SIP message body (or sections of the body), which can be provided as plaintext. Ex1004, p. 33 (citing RFC 2046). Thus, a POSITA would have known that the body of a SIP message can include plain text of implementation-specific, vendor-specific information, or any other information desired by the creator of the SIP message.

197. Additionally or alternatively, the SDP Standard teaches media description fields (“m=”) used to provide media names and transport addresses, thus specifying information about the media for the requested session. Ex1005, p. 8-9. More particularly, in SDP, “[a]n SDP session description consists of a session-level section followed by zero or *more media-level sections*. ... Each media-level section starts with an “m=” line and continues to the next media-level section or end of the whole session description.” Ex1005, p. 8. An SDP description can contain a number of media descriptions. Ex1005, p. 22.

198. At the time of the alleged invention, a POSITA would have understood that it was common practice to use multiple media description fields to specify a media stream by using an order of the media description fields. *See, e.g.,* 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

RFC2318 for css), *id.* (citing RFC2046 and RFC2046 for richtext), *id.* (citing RFC2483 for uri-list).

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.

199. Additionally or alternatively, a POSITA would have understood that, at the time the alleged invention was made, it was common practice to include proprietary or experimental fields in SIP headers to transmit implementation-specific or vendor-specific information. For example, at the time of the alleged invention, "x-" field were widely used to indicate extensions in Internet protocols for transmission implementation-specific or vendor-specific information. *See, e.g.,* Ex1013 (providing a historical background of the use of the "x-" field dating back to 1975); *see also* Ex1014 ("Use of an "X-" prefix on textual identifiers has been widely used to indicate experimental extensions in other protocols."), Ex1004, p. 229 ("x-token" and "extension-token"). SIP also provides for the use of a "p-" field for indicating experimental extensions in SIP. *See* Ex1014. As such, it is my opinion that 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.

200. Thus, it is my opinion that the 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).

201. When combined with a proxy server as taught in the SIP Standard, the proxy server guarantees the communication bandwidth at the same time that the playlist information is transmitted. Under this combination, the proxy server receives a 200 (OK) SIP message from one user agent that contains both bandwidth information and information specifying the media content in the SIP message, either in SDP descriptions or in SIP messages themselves (Ex1005, pp. 1, 4, 5, 10, 12, 13, 16, 21, 22, §§ 5.4, 5.5, 5.8, 5.13, 5.14) and confirms that the indicated bandwidth does not exceed the available bandwidth (taught Ex1004, pp. 109, 181-182, 192 & § 5).

(4) A POSITA would have been motivated to combine the teachings of Ueda, the SIP Standard, and the SDP Standard.

202. In my opinion, it would have been obvious to a POSITA at the time the alleged 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 SIP message (header or body) or in an SPD description along with information about the bandwidth to be used by the session (i.e., communication bandwidth information).

203. In my opinion, it would have been obvious to a POSITA transmitting Ueda's playlist to user equipment to transmit the playlist according to the protocols provided in the 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. As discussed above, a POSITA would have understood that there were many well-known and commonly practiced ways to include playlist information in a SIP message. 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 a SIP message, such as in the header and/or body as described above. 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., an "x-" or "p-" header field). As a further example, it would have been obvious to a POSITA, at the time of the alleged 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., the "a="; "u="; "i=" fields). 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.

204. It is my opinion that 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. 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. The result would be that (1) the proxy servers of the SIP standard execute a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection (taught in the SIP Standard, Ex1004, at, e.g., pp. 1, 9, 11, 12, 15, 16, 35, 37, § 13 & Fig. 1, in combination with the SDP Standard. Ex1005, at, e.g., pp. 1, 4, 5, 10, 12, 13, 21, 22 & §§ 5.4, 5.5, 5.13, 5.14) at a same time with (2) the server 191 of Ueda transmitting Ueda's playlist 402 via one or more connection control servers (proxy servers as taught by the SIP Standard) to Ueda's content providing device 150 by including the playlist 402 in the SDP description or the SIP message (header or body).

205. Accordingly, Ueda in combination with the SIP Standard and the SDP Standard teaches element 1g.

- h. Claim 1 [element 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”**

206. In my opinion, Ueda discloses 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 and therefore teaches element 1h of claim 1 of the '427 Patent.

207. As discussed above for element 1e, the playlist file 402 taught in connection with Figure 17 of Ueda contains information for (1) identifying the Movie Title #2 contained in the download request; and (2) specifying the commercial content (CM #4) 401 selected by the server 191. *See, e.g.*, Ueda, ¶¶0248, 0253-0254. The playlist file 402 also contains information indicating a sequence in which the movie and the commercial content 401 are output. For example, “in a case wherein the playlist file (PlayList file #2) 402 has the following

playback specification information, Movie Title # 2→CM # 3→CM # 4,” the content providing device 150 plays back the content in the order specified by the playlist file (i.e., Movie Title # 2, then commercial (CM) #3, then commercial (CM) #4). Ex1003 ¶¶0253-0254. Information for (1) identifying the movie contained in the download request and (2) specifying the commercial content selected by the server 191 thus is contained within the playlist file 402, along with information indicating the sequence in which these contents are output.

208. Similarly, in connection with Figure 30, Ueda teaches that the content providing device 150 runs “a program for executing processing for informing the server 191 of playback of ... main content #1 (Movie Title #1).” Ex1003 ¶¶0424. Ueda then teaches that “[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. With the commercial content, “the server 191 transmits a bind file (Binding file) 642, and further a playlist as appropriate.” Ex1003 ¶¶0438. This playlist thus contains information for (1) identifying the movie to be played by the content providing device 150; and (2) specifying the commercial content selected by the server 191, similar to the playlist file 402 discussed above.

209. In all cases, Ueda teaches that “[t]he *playlist is a list stipulating the playback order* of contents,” Ex1003 ¶¶0007, and thus discloses the limitation in

claim 1 of “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.” *See also, e.g.,* Ex1003 ¶¶0009-0010 (“[A] ***playlist stipulates the playback order*** of contents such as movie content 1→commercial a →movie content 2 →commercial b→movie content 3 →commercial c and so on”), ¶¶0158-0159 (same), ¶¶0193-0194 (same), ¶0098 (discussing Figure 2: “[A] ***playlist stipulating the playback sequence*** and so forth of contents is selected in accordance with the program information of the specified playback program.”), ¶0101 (“[A] ***playlist stipulating the playback sequence*** for alternately playing AV streams in accordance with the AACs standard and commercial contents which are unencrypted data ... may be set.”), ¶0183 (“Content playback processing is performed by ***sequentially selecting contents described in the playlist*** selected with the title specified by the user.”), ¶0235 (“The content providing device ***plays the contents recorded in the playlist sequentially***.”), ¶0273, ¶0281 (describing “an example of a playlist file which the server 191 transmits to the content providing device 150 with reference to FIG. 20. As described above, a ***playlist is a file stipulating the playback order*** of contents.”), ¶0356, ¶¶0399-0405 (providing further examples of playlists for playing content, including movie and commercial content, in a particular order), Fig. 20.

210. Accordingly, Ueda teaches element 1h.

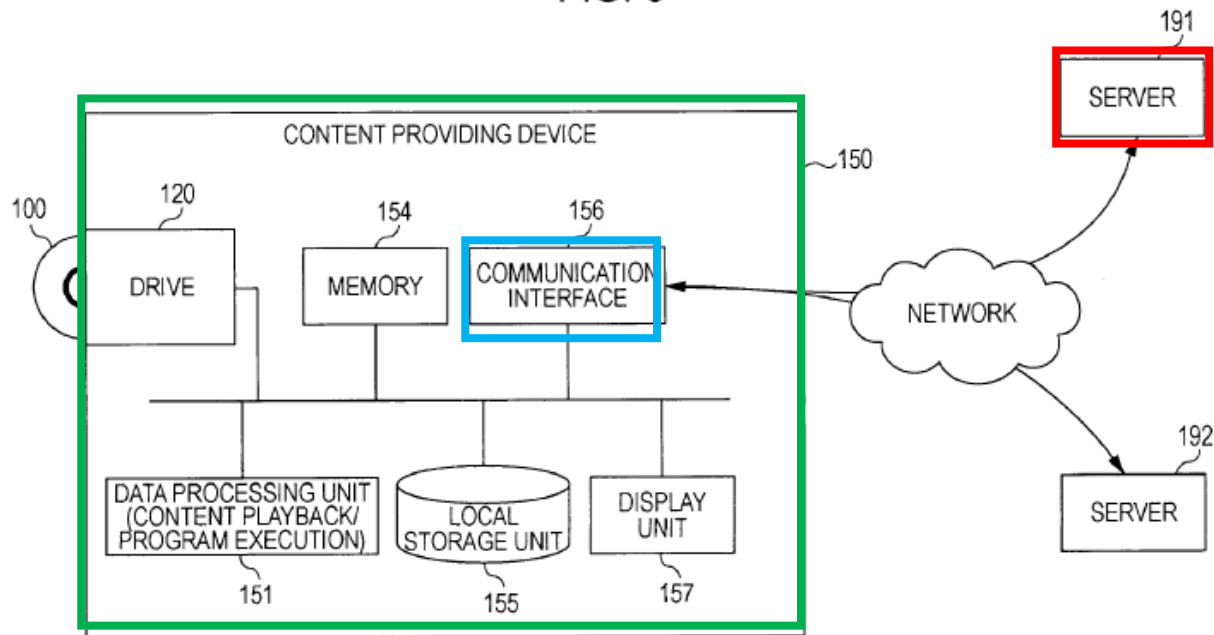
- i. **Claim 1 [element 1i]: “wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and output, based on the received main content data and sub content data, viewing content in which sub content represented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

211. In my opinion, Ueda discloses that the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and outputs, 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, and therefore teaches element 1i of claim 1 of the '427 Patent.

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

212. In particular, Figure 6 of Ueda (reproduced below) teaches that **the user equipment** (the content providing device 150) comprises a **receiver** in the form of “a communication interface 156 for executing communication through a network,” Ex1003 ¶0118 & Fig. 6. As shown by the arrows in Figure 6, the communication interface 156 receives data transmitted by **the application server system** (the server 191) through the network.

FIG. 6



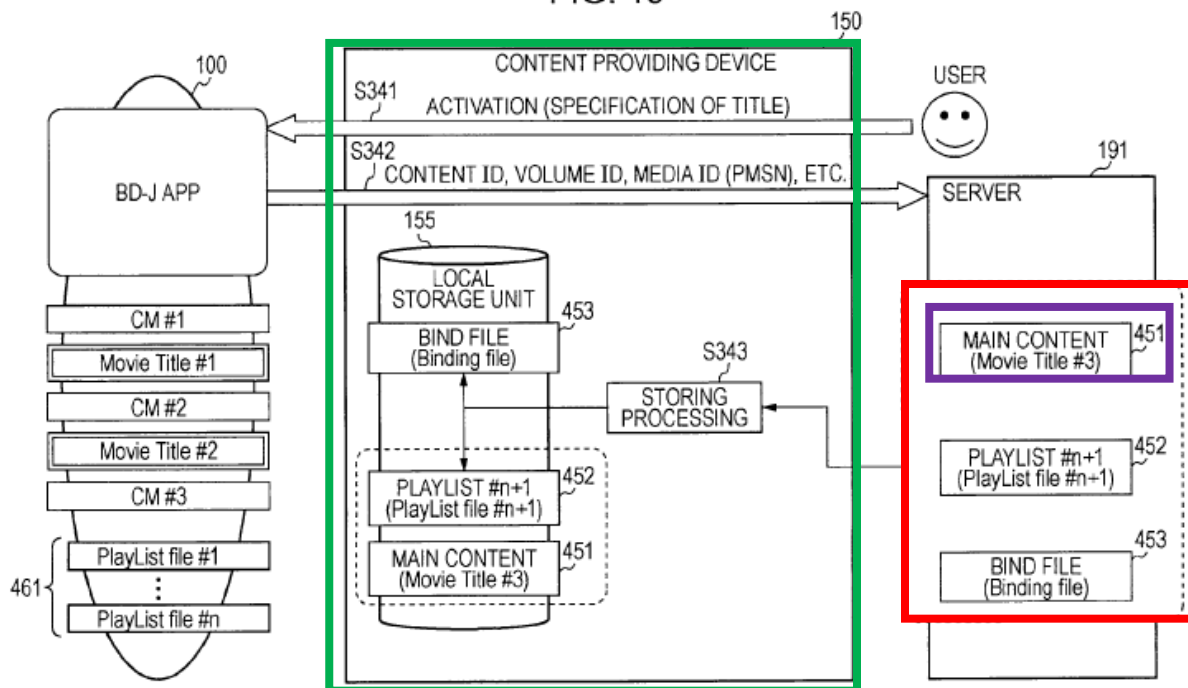
213. Although not shown in the other figures illustrating the content providing device 150, a POSITA would have understood that the content providing device 150 in the other figures (including Figures 7, 17, 19, 24 and 30-33) comprises the communication interface 156 shown in Figure 6. A communication interface or receiver is how computers, like the content providing device 150, necessarily and inherently received data from servers connected to a network at the time that Ueda was filed.

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

214. In connection with Figure 19, Ueda teaches that, after receiving the download request transmitted by the user equipment (the content providing device

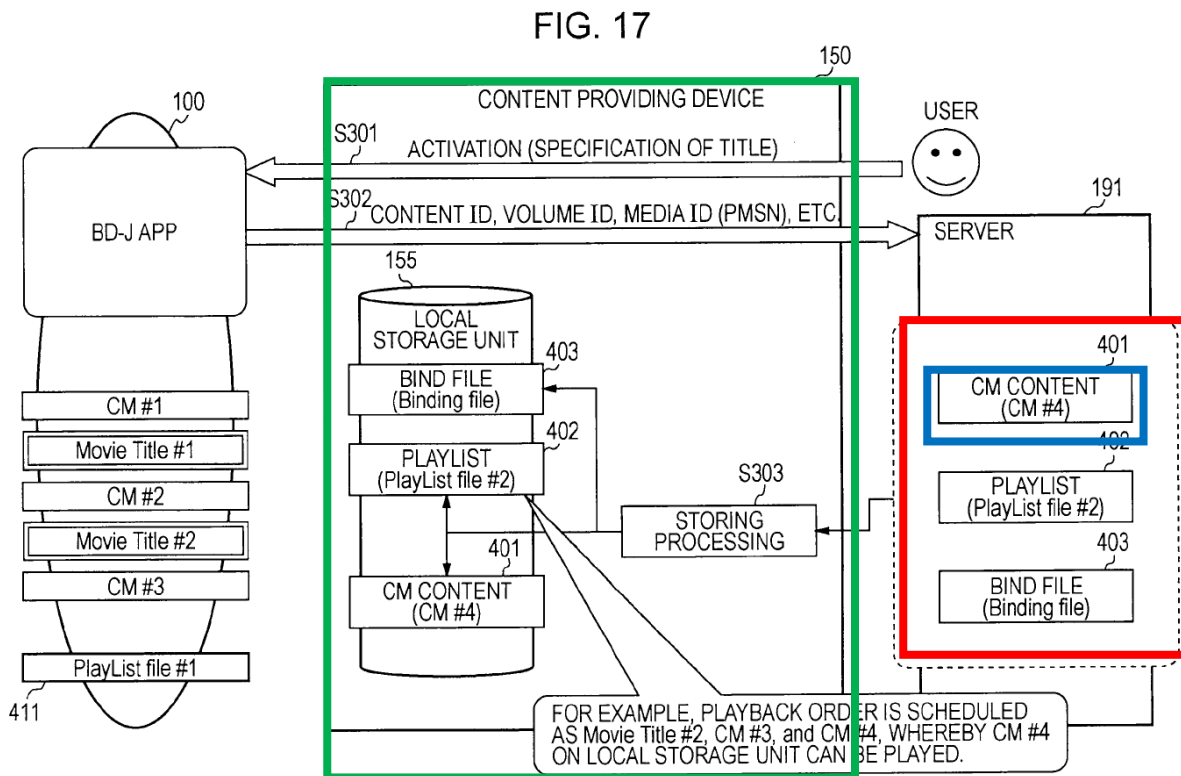
150), the application server system (the server 191) transmits main content data identified by the request to the content providing device 150. *See, e.g.*, Ex1003 ¶¶0276-0279 (teaching the transmission of “*main content (Movie Title #3)* 451” by the server 191 to the content providing device 150), ¶0370 (teaching the provision of “*main content* such as a movie or the like” by the server to the content providing device 150), Fig. 19. The transmission of the main content, identified as “Movie Title #3,” from the server 191 to the content providing device 150 is shown in Figure 19 of Ueda (reproduced below).

FIG. 19



(3) **Figure 17 of Ueda teaches user equipment “receiving ... sub content data transmitted by the application server system.”**

Figure 17 of Ueda (reproduced below) teaches that the commercial (CM) content 401 is “to be downloaded and obtained from the server 191” by the content providing device 150. Ex1003 ¶0241; *see also* Ex1003 ¶¶0245, 0248. More particularly, Ueda discloses that the “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. Ueda makes clear that “[t]he content providing device 150 receives the above-mentioned data from the server 191” Ex1003 ¶0248.



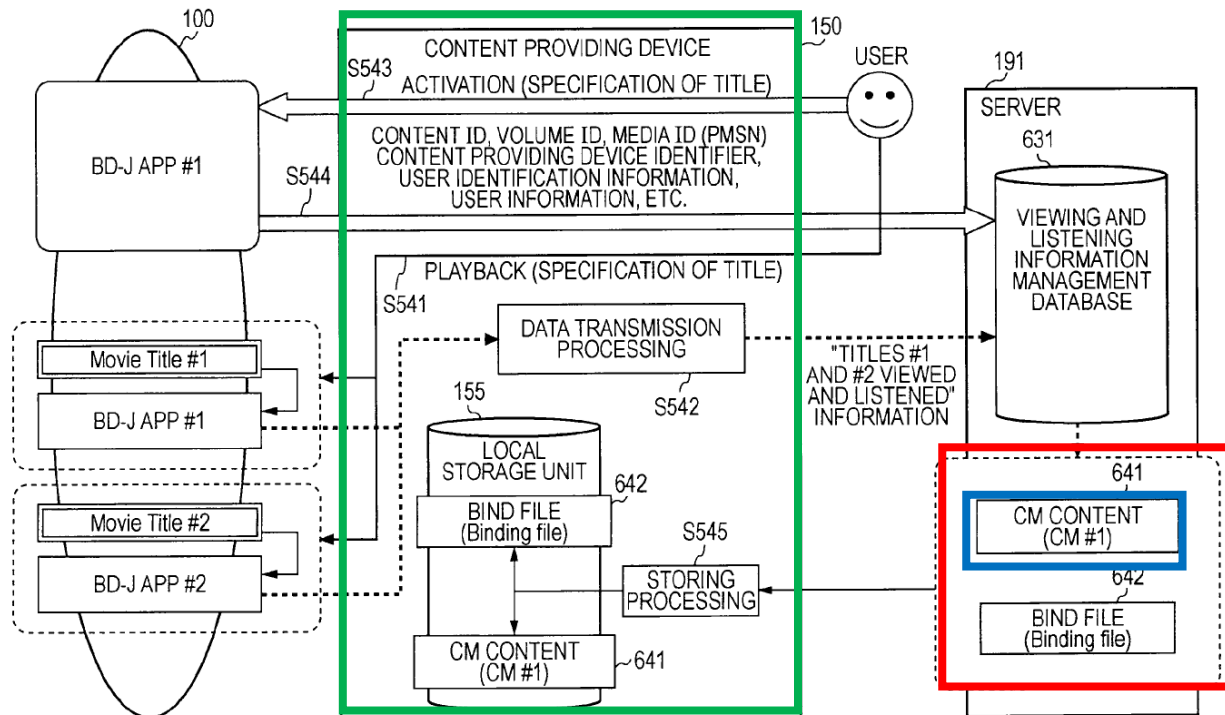
215. As discussed above in connection with element 1b, Ueda explicitly identifies commercial content as “sub content.” *See, e.g.*, Ex1003 ¶0119 (“The content providing device 150 obtains a **sub content** ..., such as caption data or dubbed-in data, **commercial content**, service content, program such as Java (registered trademark) or the like, ... through servers 191 and 192 ...”). Figure 17 of Ueda thus teaches that **the user equipment** (the content providing device 150) receives **sub content data** (the commercial content 401) transmitted by **the application server system** (the server 191).

(4) Figure 30 of Ueda teaches user equipment “receiving ... sub content data transmitted by the application server system.”

216. Additionally or alternatively, Figure 30 of Ueda (reproduced below) teaches that “[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* Ex1003 ¶0413 (“FIG. 30 is a diagram illustrating a processing example wherein the server 191 ... determines and provides a commercial content to be provided to the user from the server 191.”), ¶0439 (“[T]he server can analyze the preference of the user to provide a commercial content according to the user’s preference ...”), ¶0443 (“[T]he server 191 performs processing for providing a commercial content

adapted to the user's preference"). As discussed above, the commercial (CM) content is sub content data representing sub content. *See, e.g.,* Ex1003 ¶0119.

FIG. 30



217. Figure 30 of Ueda thus teaches that **the user equipment** (the content providing device 150) receives **sub content data** (the commercial content 641) transmitted by **the application server system** (the server 191).

- (5) Ueda teaches user equipment “output[ing], 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.”

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

219. Thus, where the playlist includes both main content (movie) data and sub content (commercial) data, the user equipment (the content providing device 150) will output viewing content in which a commercial is inserted in the movie. *See, e.g.*, Ex1003 ¶¶0009-0010 (“[A] playlist stipulates the playback order of contents such as *movie content 1*→*commercial a*→*movie content 2*→*commercial b*→*movie content 3*→*commercial c* and so on, and the content playback order is determined, and playback processing is performed.”), ¶¶0158-0159 (“[A] playlist stipulates the following playback order of *movie content 1*→*commercial a*→*movie content 2*→*commercial b*→*movie content 3*→*commercial c*, and so on, processing for replacing the commercials a, b, and c with download contents downloaded from the server 191 and recorded in the local storage unit 155 to play the download contents, and processing for playing a new additional content downloaded from the server 191, can be performed.”), ¶¶0163-0164 (“[A] virtual file system (VFS) is built by employing the mapping information recorded in the bind file (Binding file) 343

(=335), and playback is performed by employing the same playlist, playback processing can be performed by replacing as follows: ***movie content 1 →commercial x→movie content 2 →commercial y→movie content 3 →next provided content preview information→commercial z***, and so on.”), ¶¶0193-0198 (“[A] playlist stipulates the following playback order of ***movie content 1 →commercial a→movie content 2 →commercial b→movie content 3 →commercial c***, and so on, playback wherein the commercials a, b, and c are replaced with download contents downloaded from the server 191 and recorded in the local storage unit 155, i.e., commercial x, commercial y, and commercial z, playback processing can be performed by replacing the contents as follows: ***movie content 1 →commercial x→movie content 2 →commercial y→movie content 3 →commercial z***, and so on.”), ¶¶0253-0254 (“For example, in a case wherein the playlist file (PlayList file #2) 402 has the following playback specification information, Movie Title # 2→CM # 3→CM # 4[,] Subsequently to Movie Title # 2, and CM # 3 from the disc 100, playback of CM # 4 of the local storage unit 155 is performed.”), ¶¶0399-0405 (teaching a playlist including both movie and commercial content).

(6) The teachings of Figures 17, 19 and 30 of Ueda may be combined.

220. As discussed above for element 1b, although different figures of Ueda show the commercial (CM) content 401/641 and the main content 451 being transmitted by the server 191 to the content providing device 150, Ueda teaches that both types of content can be transmitted. Among other things, Ueda states that “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.” Ex1003 ¶0239. Figures 17, 19 and 30 thus show examples for the download processing of different types of content stored in the memory of the server 191, and Ueda makes clear that all of these types of content, including both commercial (CM content) and main content, can be stored in and downloaded from a single server.

221. Additionally or alternatively, a POSITA would have understood that the example of Figure 19 (showing the main content 451 transmitted by the server 191 to the content providing device 150) could be combined with the examples of Figures 17 and/or 30 (showing the commercial content 401/641 transmitted by the server 191 to the content providing device 150). A POSITA would have been motivated to combine these examples so that both the main content 451 and the commercial (CM) content 401/641 could be stored in and downloaded from the same server, as taught in paragraph 0239 of Ueda.

222. Accordingly, Ueda teaches element 1i.

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

223. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

a. Claim 4 [element 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.”

224. In my opinion, Ueda discloses that 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, and therefore teaches element 4a of claim 4 of the '427 Patent.

225. As discussed above for element 1c, Figure 17 of Ueda teaches that the server 191 comprises a memory configured to store sub content data representing sub content—the commercial (CM) content 401. Additionally or alternatively, as discussed above for element 1b, Figure 30 of Ueda teaches that the server 191 comprises a memory configured to store sub content data representing sub content—the commercial (CM) content 641.

226. Additionally, as discussed above for element 1e, the user-preference and personal information taught in Ueda contains attribute information representing an attribute of the commercial content.

227. Ueda further teaches that the memory is configured to store the commercial content data in association with this attribute information. As discussed above for element 1d, the 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.” Ex1003 ¶0438. For example:

in a case wherein the viewing and listening content of the user is a movie content relating to cars, a car-related commercial is provided, and in a case wherein the viewing and listening content of the user is a South Korean movie content, a commercial of South Korean travel or South Korean products is provided.

Ex1003 ¶0439. Thus, the attributes (e.g., cars, South Korea, South Korean products) in the user-preference and personal information also represent attributes of the commercial content 641 that is selected by the server 191. For the server 191 to be able to select the commercial content based upon these attributes, the server’s memory must necessarily and inherently be configured to store the commercial content data in association with the attributes. Otherwise, the server 191 would not know which commercials to select.

228. Accordingly, Ueda teaches element 4a.

- b. **Claim 4 [element 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.”**

229. In my opinion, Ueda discloses that 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 therefore teaches element 4b of claim 4 of the '427 Patent.

230. In particular, the user-preference and personal information taught in Ueda is selection information that contains user basic information, which is information for specifying the attribute information. Ueda explicitly discloses that “an arrangement may be made wherein 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. More particularly, as disclosed in connection with Figure 30, Ueda teaches that the user-preference and personal information is recorded in a user preference information management database 631, which is a part of the server 191. Ex1003 ¶0432 & Fig. 30. Upon receiving a content download request from the content providing device 150, the 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.

231. The user-preference and personal information is then used by the server 191 to select the commercial content based upon 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. In this way, “the preference of the user is determined to provide a commercial content adapted to the user’s preference” Ex1003 ¶0440. The attributes taught in Ueda thus closely resemble the “user basic information” defined in the ’427 Patent. *See* ’427 Patent, 9:14-20 (“The user basic information is information for specifying advertisement attribute information representing an attribute of advertisement content (in this example, categories of advertisement content such as *cars*, real estate, *travel*, insurance, cell-phones, coffee, gadgets and so on).”).

232. The user-preference and personal information taught in Ueda is also information associated with user identification information for identifying a user of the user equipment. *See, e.g.,* Ueda, Abstract (“[T]he data processing unit receives ... the identification information of at least either the device identifier of a device on the client side, or *the user identifier of a user on the client side*, from the client ... and analyzes the user’s preference on the client side to provide a content adapted to the user’s preference.”), ¶0017 (same), ¶0022 (same), ¶0023 (same),

¶0028 (same), ¶0031 (same), ¶0441 (same), ¶0147 (“[T]he content providing device 150 ... transmits ... 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.”), ¶0148, ¶0169 (“[A] transmission identifier may be set variously, such as ... **user identifier**, content providing device identifier, or a combination of these, or the like.”), ¶0243, ¶0258, ¶0275 (“[A] **user ID**, device ID, and so forth may be included in the transmission information.”), ¶0343 (same), ¶0360, ¶0375, ¶¶0378-0382 (“The server 191 performs user management based on data received from the content providing device at the content download processing process, ... i.e., ... (b) identifier of content providing device 150 (content providing device ID), (c) **user identifier (user ID)**, and (d) user information.”), ¶0386 (“[A]n arrangement is made wherein the server 191 transmits a **user ID** along with the disc ID, whereby user management information such as shown in FIG. 27 can be generated and updated.”), ¶0387, ¶0389, ¶0429, ¶¶0433-0437 (“[T]ransmission request data set beforehand in the program, e.g., one of the following information (a) through (d): ... (b) identifier of content providing device 150 (content providing device ID) (c) **user identifier (user ID)**, and (d) user information, or a combination thereof is transmitted to the server 191.”), ¶0485.

233. Accordingly, Ueda teaches element 4b.

- c. **Claim 4 [element 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.”**

234. In my opinion, Ueda discloses that 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, and therefore teaches element 4c of claim 4 of the '427 Patent.

235. As discussed above for element 4a, the sub content data (commercial content data) is stored in association with the attribute information.

236. Additionally, as discussed above for element 4b, this 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.

237. Furthermore, as discussed above for element 4b, the server 191 selects the commercial content based upon 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; *see also* Ex1003 ¶¶0440-0441.

238. Finally, as discussed above for element 1d, Ueda discloses that the server 191 comprises a processor in the form of a “data processing unit” 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.

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

239. Accordingly, Ueda teaches element 4c.

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

240. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

a. Claim 5 [element 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

241. As discussed above for element 4a, it is my opinion that Ueda discloses that 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, and therefore teaches element 5a of claim 5 of the '427 Patent.

- a. **Claim 5 [element 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”**

242. In my opinion, Ueda discloses that 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 therefore teaches element 5b of claim 5 of the '427 Patent.

243. In particular, the selection information taught in Ueda may contain content basic information in the form of a “content ID” for specifying the attribute information, with the content basic information being associated with main content identification information for identifying the main content (e.g., a movie). As disclosed in connection with Figure 30, an “application program (BD-J #1) includes a program for executing processing for informing the server 191 of playback of (a1) ***main content #1 (Movie Title #1)*** being executed, and (b2) application program (BD-J #2) includes a program for executing processing for informing the server 191 of playback of (b1) ***main content #2 (Movie Title #2)*** being executed.....” Ex1003 ¶0424. Thus,

in step S541, when the user employing the content providing device 150 plays the following contents by employing the corresponding playlist,

(a1) **main content #1 (Movie Title #1)**,

(a2) application program (BD-J #1),

(b1) **main content #2 (Movie Title #2)**, and

(b2) application program (BD-J #2),

in step S542 the server 191 is informed of playback fact by execution of each application program. With this notice processing, an ID set corresponding to ... information such as a **content ID** ... is informed.

Ex1003 ¶¶0425-0429. Subsequently, “[i]n step S544, according to the execution of the application (BD-J app #1), 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 of the ’427 Patent.

244. Based in part upon this content ID, which identifies the main content (e.g., Movie Title #1, Movie Title #2), the server 191 “searches the recorded information of the user preference information management database 631 ..., and determines the preference of the user” Ex1003 ¶0438. The 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. Thus, “in a case wherein the viewing and listening content of the user is a *movie content relating to cars*, a car-related commercial is provided, and in a case wherein the viewing and listening content of the user is a *South Korean movie content*, a commercial of South Korean travel or South Korean products is provided.” Ex1003 ¶0439. The server 191 thus uses the content ID for specifying the attribute information, such as “cars,” “South Korean travel,” or “South Korean products.”

245. Accordingly, Ueda teaches element 5b.

- b. **Claim 5 [element 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.**

246. In my opinion, Ueda discloses that 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, and therefore teaches element 5c of claim 5 of the '427 Patent.

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

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

249. Furthermore, as discussed above for element 5b, the server 191 selects the commercial content based upon an attribute such as “cars,” “South Korean travel,” or “South Korean products.” Ex1003 ¶0439; *see also* Ex1003 ¶¶0440-0441.

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

251. Accordingly, Ueda teaches element 5c.

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

252. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

- a. **Claim 6 [element 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”**

253. In my opinion, the SIP Standard discloses that 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 therefore teaches element 6a of claim 6 of the '427 Patent.

254. As discussed above for element 1b of claim 1, the SIP Standard teaches one or more connection control servers in the form of one or more proxy servers that are between two endpoints. Further, as discussed for element 1b of claim 1, the SIP Standard teaches one or more connection establishment messages in the form of SIP messages, which are exchanged between the two endpoints, Alice and Bob, for establishing a connection. More particularly, as discussed above, the SIP Standard teaches that the one or more proxy servers receives a SIP invite message (INVITE F1) from Alice's softphone that is routed to Bob's SIP phone via the one or more proxy servers; Bob's SIP phone responds with a 200 (OK) F9 message that is routed to Alice's softphone via the one or more proxy servers; Alice's softphone transmits an acknowledgement message, ACK, to Bob's SIP phone to confirm the reception of the final response (200 (OK)); and a media session is established. Ex1004, pp.

11-12, 15, 16 & Fig. 1. Any one or more of the SIP messages taught by the SIP Standard can be considered to be a connection establishment message. In fact, these are the messages described in the '427 Patent itself as the connection establishment messages. *See, e.g.*, Ex1001, 16:29-35.

255. Further, a POSITA would have understood that the SIP messages are constructed according to a predetermined protocol as set forth in the SIP Standard. *See, e.g.*, Ex1004, pp. 1 (“[The SIP Standard] describes Session Initiation Protocol (SIP), an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants.”).

256. Accordingly, Ueda teaches element 6a.

- b. Claim 6 [element 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.”**

257. As discussed above for element 1f of claim 1, it is my opinion that Ueda in view of the SIP Standard discloses 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. Additionally, the SIP Standard teaches that the 200 OK message F9 transmitted by Bob’s softphone (e.g., the application server)

carries Bob's SDP message specifying information about the multimedia session, which is transmitted to Alice's softphone (e.g., the user equipment) via the one or more proxy servers (e.g., the one or more connection servers). Ex1004, p. 15.

258. Further, as discussed above for element 6a of claim 6, a connection establishment message can be considered as the 200 OK message F9 transmitted by Bob's softphone. This is the one of the example messages referred to as a connection establishment message in the '427 Patent. *See, e.g.*, Ex1001, 15:49-63.

259. Accordingly, Ueda teaches element 6b.

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

260. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

a. Claim 7 [element 7a]: "the application server system comprises a service control server and a media server"

261. As discussed above for element 1a of claim 1, Ueda discloses a server 191 that is configured to deliver a content management application (BD-J app 3) 332, management data 333, content 334, and a bind file 335 to a content providing device 150. Ex1003 ¶¶0122, 0151-0155 & Fig. 7. Additionally or alternatively, as discussed above for the element 1a of claim 1, Ueda also discloses that the server 191 is configured to deliver a playlist 511 and a bind file 512. Ex1003 Fig. 24.

262. In either case, it is my opinion that Ueda discloses that the application server comprises a service control server in the form of a portion of the server 191 and a media server in the form of another portion of the server 191. *See, e.g.*, Ex1003 ¶¶0122, 0151-0155 & Figs. 7, 24. More particularly, Ueda discloses a service control server in the form of portions of the server 191 that include the memory as discussed for element 1c of claim 1, the first receiver as discussed for element 1d of claim 1, and the first transmitter as discussed for element 1f of claim 1. Ueda discloses a media server in the form of other portions of the server 191, including the portions that serve the main content and the commercial content to the content providing device 150.

263. Therefore, Ueda teaches element 7a of claim 7 of the '427 Patent.

- b. Claim 7 [element 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.”**

264. As discussed above for element 7a of claim 7, it is my opinion that Ueda discloses that 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, and therefore teaches element 7b of claim 7 of the '427 Patent.

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

265. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

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

266. As discussed above for element 7a of claim 7, it is my opinion that Ueda discloses that the application server system comprises a service control server and a media server, and therefore teaches element 8a of claim 8 of the '427 Patent.

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

267. As discussed above for elements 7a and 7b of claim 7, it is my opinion that Ueda discloses that the service control server comprises a memory for storing sub content data. More particularly, Ueda discloses a service control server in the form of portions of the server 191 that include the memory as discussed for element 1c of claim 1. Therefore, Ueda teaches element 8b of claim 8 of the '427 Patent.

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

268. In my opinion, Ueda discloses a media sever in the form of portions of the server 191 that include the memory as discussed for element 1c of claim 1, the processor as discussed for element 1e of claim 1), and the first transmitter as

discussed for element 1f of claim 1. Therefore, Ueda teaches element 8c of claim 8 of the '427 Patent.

d. Claim 8 [element 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”

269. In my opinion, Ueda in view of the SIP Standard discloses that 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.

270. As discussed above for element 1e of claim 1), Ueda discloses selection information in the form of user-preference or personal information.

271. Further, Ueda describes that server 191 receives user-preference information, which is recorded in a user preference information management database 631. Ex1003 ¶0432 & Fig. 30. Upon receiving a content download request from the content providing device 150, the server 191 searches the recorded information of the user preference information management database 631 to obtain user-preference information. Ex1003 ¶0438 & Fig. 30. The server 191 then selects a commercial content (CM#1) 641 based upon the determined user's preferences as a download content, and provides this to the content providing device 150. Ex1003 ¶0438 & Fig. 30

272. As discussed above for element 8c, Ueda teaches that the media server comprises a processor that selects sub content data (e.g., the commercial content CM#1). Further, as discussed above for element 8b of claim 8 and element 1c of element 1, the service control server comprises a receiver for receiving a content delivery request transmitted by the user equipment (e.g., the content download request from content providing device 150 of Ueda). As such, a POSITA would have understood that the service control server would necessarily and inherently comprise a transmitter for transmitting the user-preference and/or personal information located in the user preference information management database 631 to the media server so that the commercial content could be selected.

273. Further, as discussed for the element 1b of claim 1, “the one or more connection control servers” may be considered to be the proxy servers taught in the SIP Standard.

274. Therefore, Ueda teaches element 8d of claim 8 of the '427 Patent.

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

275. As discussed above for element 8d of claim 8, it is my opinion that Ueda discloses that the media server receives the selection information transmitted by the service control server. Further, a POSITA would have understood that the

portion of the server 191 serving as the media server would necessarily and inherently have included a receiver for receiving user-preference information. A receiver is how servers, like the server 191, necessarily and inherently receive information and data at the time that Ueda was filed.

276. Therefore, Ueda teaches element 8e of claim 8 of the '427 Patent.

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

277. As discussed above for element 1e of claim 1, it is my opinion that Ueda discloses that the processor is configured to select the sub content data based on the received selection information, and therefore teaches element 8f of claim 8 of the '427 Patent.

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

278. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 1.

a. Claim 9 [element 9a]: “wherein the sub content is advertisement content.”

279. As discussed above for element 1c of claim 1, Ueda discloses sub content as commercial content. Further, Ueda describes commercial content as advertisement content. Ex1003 ¶0100 (“Various contents other than encoded data

recorded in accordance with this format may be recorded in a disc, such as a *commercial (i.e., advertisement) content*, service content, Java (registered trademark) program content, and so forth.”).

280. Therefore, Ueda teaches element 9a of claim 9 of the ’427 Patent.

8. Claim 14

281. Claim 14 recites “[a] content delivery method” that is a method counterpart of the content delivery system recited in claim 1. Other than re-phrasing the system 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.

282. Ueda teaches a “storing device” for the same reasons that it teaches a “memory”—the server 191 obtains the commercial (CM) content 401 and other download content “from a database,” which is a type of storing device. Ex1003 ¶0244. Otherwise, the invalidity analysis of claim 14 is subsumed within the invalidity analysis above for claim 1. Therefore, for the reasons set forth for claim 1 above, it is my opinion that Ueda in view of the SIP Standard and the SDP Standard teaches each element of claim 14.

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

283. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery method according to claim 14.

a. Claim 16 [element 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.”

284. As discussed above for element 1i of claim 1, it is my opinion that Ueda discloses 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, and therefore teaches element 16a of claim 16 of the '427 Patent.

10. Claims 18 and 22

285. Other than reciting a “service control server” in the preamble, rephrasing 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 the

same as claim 1. In my opinion, these changes do not alter the invalidity analysis for claims 18 and 22, which is subsumed within the invalidity analysis for claim 1.

286. The server control server of the '427 Patent performs the same functions as the application server system of claim 1. Thus, as discussed for element 1a of claim 1, to the extent that the preamble is limiting, Ueda teaches it. As discussed for claim 14, Ueda discloses a “storing device.”

287. Accordingly, it is my opinion that Ueda combined with the SIP Standard and the SDP Standard discloses all of the elements of claims 18 and 22.

11. Claim 20

288. Claim 20 is substantively identical to claim 1, except as shown below in redline:

- “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~~-this user equipment based on the received equipment specification information”
- “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”

- “~~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” and
- “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~~ 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.”

289. The changes in claim 20 indicated above do not alter the invalidity analysis. Accordingly, as discussed for claim 1, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 20.

12. Claim 32

290. Claim 32 is similar to claim 1, except as shown below in redline:

- **Element 32b:** “the one or more connection control servers being configured to receive ~~equipment—specification~~user identification information transmitted by a user equipment and establish a connection between the application server system and ~~the~~this user equipment based on the received ~~equipment—specification~~user identification information,”
- **Element 32c:** “the application server system comprising: ~~a memory for storing sub content data representing sub content and main content data representing main content;~~ 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;”
- **Element 32d:** “a processor for selecting the ~~stored~~ sub content data based on ~~selection~~user basic information ~~containing attribute or the main content identification information representing an attribute,~~ the user basic information being associated with the user identification information for identifying a user of the sub contentuser equipment having transmitted the content delivery request, and the main content identification information being contained by the content delivery request” and

291. Elements 32a and 32e through 32g of claim 1 are identical to elements 1a and 1f through 1h, respectively. Element 32c is substantively similar to element 1d of claim 1, except that “via the one or more connection control servers” is added. Accordingly, as discussed for claim 1, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to elements 32a, 32c and 32e through 32g.

292. Elements 32b replaces “equipment specification information” with “user identification information.” As discussed above for element 1d, Ueda discloses that the connection control server is configured to receive user identification information transmitted by the user equipment and establish connection between the application server system and this user equipment based on the received user identification information. Ex1003 ¶¶0147-0148, 0169, 0243, 0258, 0275, 0343-0345, 0374, 0380, 0388-389, 0435, 0441, 0485 & Figs. 31-33 & Fig. 7, 24, 26-28, 30-33. Accordingly, as discussed for claim 1, it is my opinion that Ueda in combination with the SIP Standard discloses element 32b.

293. Element 32d is substantively identical to element 4c of claim 4 and element 5c of claim 5. Accordingly, as discussed for claim 1, it is my opinion that Ueda in combination with the SIP Standard discloses element 32d.

294. Therefore, it is my opinion that Ueda combined with the SIP Standard and the SDP Standard discloses all of the elements of claim 32.

13. Claim 34

295. Claim 34 recites “[a] content delivery method” that is a method counterpart of the content delivery system recited in claim 32. Other than re-phrasing the system elements of claim 1 as method steps the elements of claim 34 are all included in claim 32.

296. Accordingly, the invalidity analysis of claim 34 is subsumed within the invalidity analysis above for claim 32. Therefore, for the reasons set forth for claim 32 above, it is my opinion that Ueda in view of the SIP Standard and the SDP Standard teaches each element of claim 34.

14. Claim 35

297. The preamble of Claim 35 recites “[a] non-transitory computer-readable medium storing a program comprising instructions for causing a service control server.” Other than deleting elements 1a through 1c and 1i, claim 35 differs from claim 1 as shown below:

- “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~~ 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;”

- “a processor for selecting ~~the stored~~ sub content data based on ~~selection~~content basic information ~~containing attribute~~associated with the main content identification information ~~representing an attribute of~~contained by the sub-content delivery request; and”
- 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~~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, ~~transmit~~transmitting 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.

298. The changes in claim 35 indicated above do not alter the invalidity analysis. Accordingly, as discussed for claim 1, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard discloses the content delivery system according to claim 35.

15. Claim 36

299. Other than reciting a “service control server” in the preamble, replacing a “for” with a “is configured to” and replacing a “transmitting” with “transmit”, claim 36 is substantively the same as claim 35. In my opinion, these changes do not alter the invalidity analysis for claim 36, which is subsumed within the invalidity analysis for claim 35.

C. Ground 2: Ueda in View of the SIP Standard and Bechtolsheim Renders Obvious Claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36.

300. In my opinion, the combination of Ueda, the SIP Standard, and Bechtolsheim renders obvious claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36. In the discussion that follows, I explain the correspondence between the disclosures of the prior art and each claim limitation.

301. As discussed above for claim 1, it is my opinion that Ueda in combination with the SIP Standard discloses all of the elements of claims in Ground 1, except for elements 1g, 14f, 18d, 20g, 22d, 32f, 34d, 35d, and 36d.

- a. **Claims 1, 14, 18, 20, 22, 34, and 34-36 [elements 1g, 14f, 18d, 20g, 22d, 32f, 34d, 35d, and 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”**

302. In my opinion, Ueda combined with SIP Standard and Bechtolsheim teaches 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, and therefore teaches elements 1g, 14f, 18d, 20g, 22d, 32f, 34d, 35d, and 36d of claims 1, 14, 18, 20, 22, 34, and 34-36 of the '427 Patent.

303. As discussed above for element 1g, it is my opinion that Ueda in view of SIP Standard teaches a first transmitter that transmits

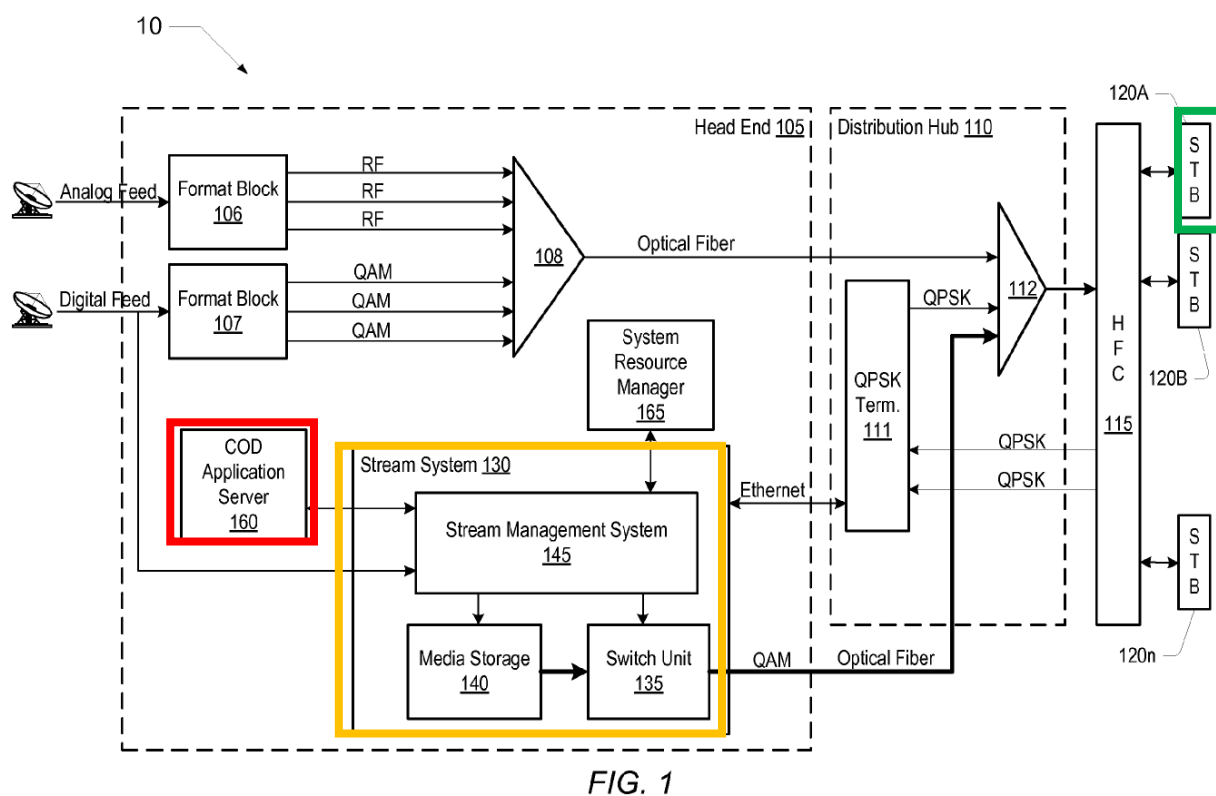
play-list information via one or more connection control servers to user equipment which has transmitted the content delivery request.

304. As discussed above for element 1g(2), it is my opinion that 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.”**

305. In my opinion, Bechtolsheim teaches a content delivery system in the form of a cable television system 10, shown in Figure 1 of the reference (reproduced below). Ex1006 ¶¶0017 & Fig. 1. The cable television system 10 comprises an application server system in the form of a content on demand (COD) application server 160 and a connection control server in the form of a stream system 130. Ex1006 ¶¶0023-0024 & Fig. 1. The stream system 130 includes a switch unit 135 that is configured to establish a connection via a distribution hub 110 with user equipment in the form of a set top box (STB) 120. Ex1006 ¶¶0023, 0046 (“[T]he switch unit 135 is configured to be a centralized head end unit that combines the function of video content streaming, video switching, memory-based content

caching, and network connectivity.”), Fig. 1. The COD application server 160, in turn, comprises a receiver for receiving a content delivery request transmitted by the STB 120 and containing main content identification information for identifying a movie. Ex1006 ¶0064 & Fig. 4 (step 410). Collectively, the stream system 130 and the COD application server 160 comprise a memory (media storage 140) for storing both 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 Ex1006 ¶¶0033, 0050, 0057, 0064-0065, 0067 & Figs. 1, 2.



306. In my opinion, Bechtolsheim also teaches that the switch unit 135 of the steam system 130 is configured to put together a playlist of the content segments for a movie, with the content segments specifying chapters of the movie and commercials. Ex1006 ¶0033. A POSITA would thus understand that the switch unit 135 thus prepares “selected sub content specification information for specifying the selected sub content data,” as recited in claim 1 of the ’427 Patent.

307. At the same time that the playlist is put together, Bechtolsheim teaches that the import preprocessor 148 of the stream system 130 executes a process for guaranteeing a communication bandwidth for transmitting content data. Ex1006 ¶0034. The output of this process “for each title is a metadata file and one or more files of block data.” Ex1006 ¶0034. Bechtolsheim discloses that the metadata file includes “the list of video segments in the title,” making clear that the metadata file is a playlist. Bechtolsheim then explains as follows:

The title metadata may include the title name, the title encoding (e.g., UDP/IP or RTP/UDP/IP), and the list of video segments in the title, and each segment’s associated metadata. 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 of content data thus are determined at the same time that the playlist is prepared by the steam system 130.

308. Bechtolsheim additionally teaches that the import preprocessor 148 executes a process for guaranteeing this bandwidth. As Bechtolsheim explains:

the import preprocessor 148 may be configured with the ... target bandwidth by the CFE 146. *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.

Ex1006 ¶0038; *see also* Ex1006 ¶0049 (“A stream specifies the delivery endpoint for the content and represents the *reservation of bandwidth* and streaming capacity of the switch unit 135.”).

309. Accordingly, in my opinion, Bechtolsheim thus teaches the limitation in claim 1 of 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 the SIP Standard and Bechtolsheim teaches elements 1g, 14f, 18d, 20g, 22d, 32f, 34d, 35d, and 36d.

310. For the reasons discussed above under “motivation to combine,” it would have been obvious to a POSITA at the time the invention was made 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 a same time with (2) Ueda's server 191 transmitting playlist 402 via proxy servers of SIP Standard to Ueda's content providing device 150.

311. Accordingly, in my opinion, Ueda combined with SIP Standard and Bechtolsheim teaches elements 1g, 14f, 18d, 20g, 22d, 32f, 34d, 35d, and 36d of claims 1, 14, 18, 20, 22, 34, and 34-36 of the '427 Patent.

2. Claims 4-9

312. Each of claims 4-9 depends from claim 1. As discussed above for claims 4-9 under Ground 1, it is my opinion that Ueda combined with SIP Standard and Bechtolsheim discloses claim 1, and therefore disclose the preambles of claims 4-9.

313. As discussed above for claims 4, 5 and 7-9 under Ground 1, it is my opinion that Ueda teaches each of the individual elements of each of these claims and thus renders these claims obvious in combination with SIP Standard and Bechtolsheim.

314. As discussed above for claim 6, it is my opinion that 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

315. As discussed above for claim 14, it is my opinion that Ueda combined with SIP Standard and Bechtolsheim discloses the content delivery method according to claim 14.

316. As discussed above for claim 16 under Ground 1, it is my opinion that Ueda teaches the elements of claim 16.

D. Grounds 3 and 4: Ueda in View of the SIP Standard, SDP the SDP Standard/Bechtolsheim, and Cohee Renders Obvious Claims 2, 3, 15, and 17.

317. In my opinion, the combination of Ueda, the SIP Standard, and the SDP Standard/Bechtolsheim, and Cohee renders obvious claims 2, 3, 15, and 17. In the discussion that follows, I explain the correspondence between the disclosures of the prior art and each claim limitation.

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

318. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard/Bechtolsheim discloses the content delivery system according to claim 1.

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

319. In my opinion, Ueda discloses that the user equipment comprises: a third receiver for receiving the selected sub content specification information transmitted by the application server system, and therefore teaches element 2a of claim 2 of the '427 Patent.

320. As discussed above for element 1f of claim 1, it is my opinion that Ueda teaches that application server 191 transmits selected sub content specification information to content providing device 150 (“user equipment”). Ueda teaches that the server 191 (“application server”) transmits selected sub-content specification information for specifying the selected sub-content to the content providing device 150 (“the user equipment which has transmitted the content delivery request”). *See, e.g.,* Ex1003, Fig. 17 (“PlayList file #2”), Fig. 19 (“PlayList file #n+1”), Fig. 24 (“PlayList file #1”), Fig. 30 (commercial content (CM #1) 641), Fig. 6.

321. Ueda expressly teaches that the content providing device 150 includes a receiver in the form of “a communication interface 156 for executing communication through a network.” Ex1003 ¶0118 & Fig. 6.

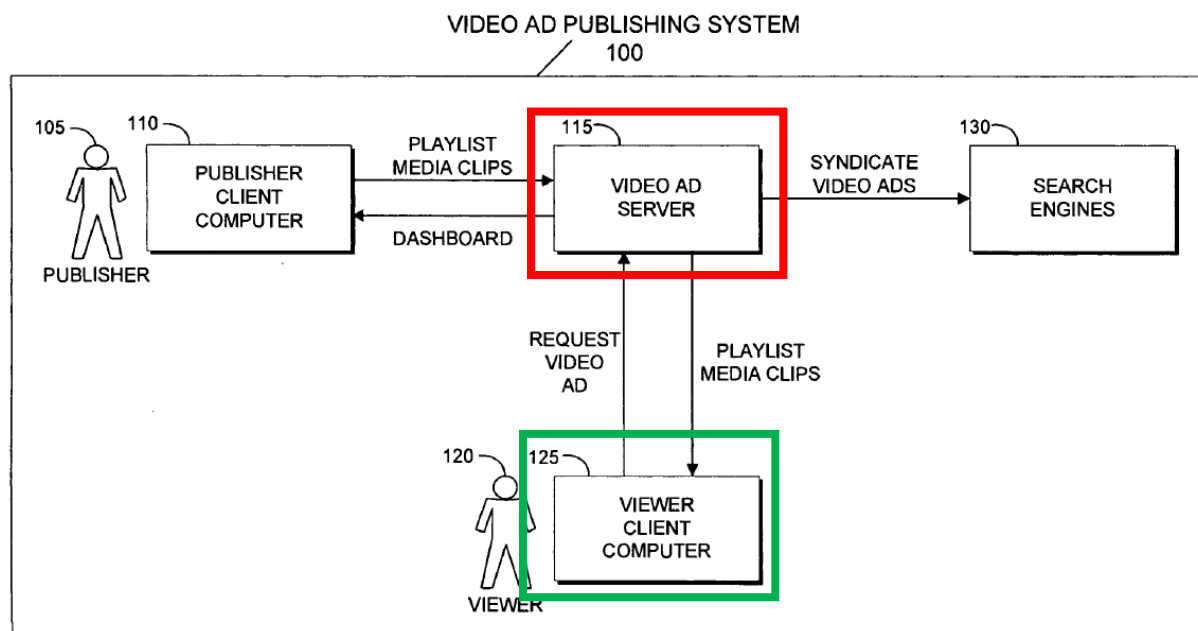
- b. **Claim 2 [element 2b]: “a second transmitter for transmitting, to the application server system, a main content viewing request containing the main content identification information and an sub content viewing request containing the received selected sub content specification information when connection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

322. In my opinion, Ueda combined with Cohee discloses 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 therefore teaches element 2b of claim 2 of the '427 Patent.

- (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 . . .”**

323. Cohee teaches a content delivery system in the form of a video ad publishing system 100, shown in Figure 1 of the reference (reproduced below). EX1007 ¶0037 (“Shown in FIG. 1 is a video ad publishing system 100 that enables content providers, referred to as publishers, to broadcast media over the Web.”) &

Fig. 1. The video ad publishing system 100 comprises an application server system in the form of a video ad server 115 and a user equipment in the form of a viewer client computer 125. EX1007 Figs. 1, 5, 7, and 8. The video ad server 115 stores media clips. EX1007 ¶¶0037, 0053, 0057, 0062, 0064, 0072-0073 & Figs. 7 and 8. The viewer client computer 125 has a two-way connection with the video ad server 115 for downloading playlists and media clips and for uploading viewing statistics. EX1007 ¶0074 & Fig. 8; *see also, e.g.*, EX1007 Figs. 1, 5, and 7.



324. Cohee teaches that the video ad server 115 stores a playlist. *See, e.g.*, EX1007 ¶¶0037 (“ . . . uploading the playlist together with any media clips referenced in the playlist to video ad server 115.”), 0053, 0057, 0062, 0064, 0072-

0073 & Figs. 7 and 8. Cohee teaches that the playlist includes instructions for rendering separately stored media clips together with information such as text overlays and timing to create and play a video ad. EX1007 ¶0037; *see also, e.g.*, EX1007 ¶¶0032, 0053-0054, 0057, 0063. More particularly, Cohee teaches that the playlists contains a reference, in the form of a Uniform Resource Locator (URL), to each media clip and does not include the media data itself. EX1007 ¶¶0053-0054, 0057, 0063.

325. Cohee also teaches that the video viewer client computer 125 transmits to the video ad server 115 a main content viewing request in the form of a media file request. EX1007 ¶0057, 0063 & Figs. 4, 5, 6. Cohee describes that the video ad server 115 (comprising web browser 505, flash player 510, and video ad play 515 as described in connection with Fig. 5 of the reference) transmits a playlist for a video ad to the viewer client computer 125 based on a playback request of the video ad. EX1007 ¶0063 & Fig. 6 (step 625); *see also* EX1007 ¶0057 & Fig. 4 (step 435). Since the playlist references, but doesn't include media clips, the video ad player 515 requests each media file referenced in the playlist from the video ad server 115. EX1007 ¶0063 & Fig. 6 (step 635); *see also* EX1007 ¶0057.

326. Accordingly, it is my opinion that Cohee teaches transmitting, to the video ad server 125 ("application server system"), a media file request ("content viewing request") containing a reference to a media clip or media file ("content

identification information”), by the viewer client computer 125 (“user equipment”), when a connection between the viewer client computer 124 and the video ad server 125 is established.

327. Further, Cohee describes video ads referred to in the reference as:

a video or multimedia presentation that results when a smart media player renders a playlist to a Web browser window. A video ad includes one or more media clips and digital images, digital sound files including digital music, and text, and interactive elements which are combined to produce a video stream capable of being displayed on a web browser. As used herein, the playlist and component media clips are streamed across a network such as the Internet to a smart media player which renders the video ad into a window in a Web browser. In one embodiment, a playlist is in XML format. Alternatively, a playlist may be in a proprietary binary or text format.

EX1007 ¶0035.

328. Thus, it is my opinion that a POSITA would understand Cohee to teach that references to one or more media clips of a video ad contained in a playlist can be considered main content identification information, while references to other media clips contained in the playlist can be considered sub content specification information.

329. Therefore, it is my opinion that Cohee teaches transmitting, to the video ad server 125 (“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 or media file (“sub content specification information”), by the viewer client computer 125 (“user equipment”), when a connection between the viewer client computer 125 and the video ad server 115 is established.

330. Additionally or alternatively, Cohee teaches that video view client 125 requests playback of a video ad by transmitting a request for a container file to the video ad server 115. EX1007 ¶0060 & FIG. 6 (steps 600 and 605); *see also* EX1007 ¶0057 & FIG. 4 (step 430). In an example, the request contains identification information of the container file, such as main.sfw. EX1007 ¶0060, 0061, 0062. The video ad server 115 transmits the requested container file to the viewer computer client 125, which then requests the playlist associated with a GUID contained in the container file. EX1007 ¶0062 & FIG. 6 (steps 605 through 620). As described above, the video ad server 115 transmits the requested playlist to the viewer client computer 125, which the viewer client computer 125 uses to requests media file referenced in the playlist from the video ad server 115. EX1007 ¶0063 & Fig. 6 (steps 625 through 635).

331. Accordingly, it is my opinion that Cohee teaches transmitting, to the video ad server 125 (“application server system”), a playback request (“main content viewing request”) containing a reference to a container file (“main content identification information”) and a media file request (“sub content viewing request”)

containing a reference to a media clip or media file (“sub content specification information”) referenced in a playlist, by the viewer client computer 125 (“user equipment”), when a connection between the viewer client computer 125 and the video ad server 115 is established.

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

332. As discussed above for element 1b of claim 1, it is my opinion that Ueda teaches a connection control server that establishes a connection between the user equipment and the application server system.

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

333. As discussed above for element 1i of claim 1, Ueda teaches that content providing device 150 includes a transmitter in the form of “a communication interface 156 for executing communication through a network.” *See* Ex1003 ¶¶0118, Fig. 6.

(4) Ueda combined with Cohee teaches element 2b.

334. For the reasons discussed above under “motivation to combine,” it would have been obvious to a POSITA at the time the invention was made 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.

335. Accordingly, in my opinion, Ueda combined with Cohee teaches element 2b of claim 2 of the '427 Patent.

- c. **Claim 2 [element 2b]: “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”**

336. In my opinion, Ueda combined with Cohee discloses 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, and therefore teaches element 2c of claim 2 of the '427 Patent.

- (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”**

337. For the reasons discussed above for element 2b, it is my opinion that Udea in combination with 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.

- (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”**

338. As discussed above for element 2b, Cohee teaches that the viewer client computer 125 requests each media file referenced in a playlist. EX1007 ¶0063 & Fig. 6 (step 635); *see also* EX1007 ¶0057. Additionally, Cohee teaches that the video ad server 115 transmits each media file in response to the request from the viewer client computer 125. EX1007 ¶0063 (“Thus, step 635, requesting a media file by video ad player 515, and step 640, transmitting a media file by video ad server 115, are repeated for each media file referenced in the playlist.”) & Fig. 6 (step 635).

339. Furthermore, as discussed above, it is my opinion that Ueda in view of Cohee teaches receiving the main content viewing request and sub content viewing request. As so considered, it is my opinion that a POSITA would have understood that the transmitted media files as taught in Cohee would be considered “main content data identified by the 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.”

(3) Ueda combined with Cohee teaches element 2c.

340. For the reasons discussed above under “motivation to combine,” it would have been obvious to a POSITA at the time the invention was made 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).

341. Accordingly, in my opinion, Ueda combined with Cohee teaches element 2c of claim 2 of the ’427 Patent.

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

342. As discussed above, it is my opinion that Ueda in combination with the SIP Standard and the SDP Standard/Bechtolsheim discloses the content delivery system according to claim 1.

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

343. For the reasons discussed above for element 2a of claim 2, it is my opinion that Ueda in combination with Cohee teaches the third receiver is configured to receive the play-list information transmitted by the application server system, and therefore teaches element 3a of claim 3 of the of the '427 Patent.

c. Claim 3 [element 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”

344. For the reasons discussed above for element 2a of claim 2, it is my opinion that Ueda in combination with Cohee teaches 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, and therefore teaches element 3b of claim 3 of the of the '427 Patent.

3. Claims 15 and 17

345. Claims 15 and 17 depend from claim 14. As discussed above for Grounds 1 and 2, it is my opinion that Ueda combined with SIP Standard and SDP Standard/Bechtolsheim discloses claim 14, and therefore discloses the preambles of claims 15 and 17.

346. 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.

347. Accordingly, for the reasons discussed above for claims 2 and 3, it is my opinion that Ueda combined with SIP Standard, SDP Standard/ Bechtolsheim, and Cohee teaches each element of claims 15 and 17.

348. In summary, it is my opinion, for the reasons set forth above, that

a. Claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36 of the '427 Patent are rendered obvious by Ueda in view of the SIP Standard and further in view of the SDP Standard;

b. Claims 1, 4-9, 14, 16, 18, 22, 20, 32, and 34-36 of the '427 Patent are rendered obvious by Ueda in view of the SIP Standard and further in view of Bechtolsheim;

c. Claims 2, 3, 15 and 17 of the '427 Patent are rendered obvious by Ueda in view of the SIP Standard and further in view of the SDP Standard and further in view of Cohee; and

d. Claims 2, 3, 15 and 17 of the '427 Patent are rendered obvious by Ueda in view of the SIP Standard and further in view of Bechtolsheim and further in view of Cohee.