

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DISNEY ENTERTAINMENT & SPORTS LLC,
Petitioner

v.

ADEIA GUIDES INC.,
Patent Owner.

Case No. IPR2026-00054
U.S. Patent No. 9,762,639

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,762,639**

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LIST OF EXHIBITS¹

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Ex-1002	Declaration of Dr. Brian Anthony
Ex-1003	Curriculum Vitae of Dr. Brian Anthony
Ex-1004	Prosecution History of U.S. Patent No. 9,762,639
Ex-1005	U.S. Patent No. 8,677,428 to Lewis (“Lewis”)
Ex-1006	U.S. Patent No. 8,782,268 to Pyle (“Pyle”)
Ex-1007	U.S. Patent No. 9,047,235 to Barraclough (“Barraclough”)
Ex-1008	U.S. Patent Publication No. 2010/268573 to Jain (“Jain”)
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Ex-1010	INTENTIONALLY LEFT BLANK
Ex-1011	INTENTIONALLY LEFT BLANK
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Ex-1014	INTENTIONALLY LEFT BLANK
Ex-1015	INTENTIONALLY LEFT BLANK
Ex-1016	INTENTIONALLY LEFT BLANK
Ex-1017	INTENTIONALLY LEFT BLANK

¹ Four-digit pin citations that begin with 0 are to the branded numbers added by Disney in the bottom right corner of the exhibits. All other pin citations are to original page, column, paragraph, or line numbers.

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Ex-1018	INTENTIONALLY LEFT BLANK
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Ex-1020	Claim Mapping Table
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Ex-1022	U.S. Patent Publication No. 2009/0037515 to Zapata (“Zapata”)
Ex-1023	U.S. Patent No. 8,527,647 to Gopalakrishnan (“Gopalakrishnan”)
Ex-1024	U.S. Patent Publication No. 2009/0282162 to Mehrotra (“Mehrotra”)
Ex-1025	<i>Adeia Techs., Inc. v. The Walt Disney Co.</i> , No. 1:24-cv-01231, Defendants’ Supplemental Disclosure of Proposed Claim Constructions (D. Del. Sept. 16, 2025)
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Ex-1027	Prosecution History of U.S. Patent No. 9,197,688
Ex-1028	U.S. Patent Publication No. 2012/0222063 to Mao (“Mao”)
Ex-1029	U.S. Patent Publication No. 2011/0314130 to Strasman (“Strasman”)
Ex-1030	Juan Esteban Hurtado Guzman, Development and Implementation of an Adaptive HTTP Streaming Framework for H.264/MVC Coded Media (“Guzman”)
Ex-1031	U.S. Patent No. 9,209,934 to Luby (“Luby”)
Ex-1032	U.S. Patent Publication No. 2009/0288076 to Johnson (“Johnson”)

Ex. No.	Description
Ex-1033	Jit Ghosh, IIS Smooth Streaming -Enhancing Silverlight Video Experiences with Contextual Data, MSDN Magazine, 32 (Mar. 2010) (“MSDN Magazine”)
Ex-1034	U.S. Patent No. 8,621,044 to Sood (“Sood”)
Ex-1035	Delivering Live and On-Demand Smooth Streaming, Microsoft Silverlight, available at https://web.archive.org/web/20100702193600/https://download.microsoft.com/download/4/E/5/4E599FBB-6E34-4A74-B3C5-1391CBOFD55F/Delivering Live and On-Demand Smooth Streaming.pdf (July 2, 2010) (“Smooth Streaming White Paper”)
Ex-1036	European Patent No. 2,223,470 to Christian (“Christian”)
Ex-1037	U.S. Patent No. 7,584,435 to Bailey (“Bailey”)
Ex-1038	U.S. Patent Publication No. 2002/0103875 to Krishnan (“Krishnan”)
Ex-1039	Frédéric Gabin et al., <i>3GPP Mobile Multimedia Streaming Standards</i> , IEEE Signal Processing Mag., 134–38 (Nov. 2010)
Ex-1040	U.S. Patent No. 6,389,473 to Carmel (“Carmel”)
Ex-1041	U.S. Patent No. 7,818,444 to Brueck (“Brueck”)
Ex-1042	U.S. Patent Publication No. 2010/0235528 to Bocharov (“Bocharov”)
Ex-1043	Ali C. Begen et al., <i>Watching Video over the Web, Part 2: Applications, Standardization, and Open Issues</i> , IEEE Internet Comput., 59–62 (May/June 2011)

I. INTRODUCTION

Disney Entertainment & Sports LLC (“Petitioner”) requests *inter partes* review (“IPR”) of Claims 8 and 13-15 of U.S. Patent No. 9,762,639 (“the ’639 Patent”) (Ex-1001), currently assigned to Adeia Guides Inc. (“PO”).

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

Real Parties-in-Interest: Petitioner identifies the following real parties-in-interest: Disney Entertainment & Sports LLC, The Walt Disney Company, Disney Media and Entertainment Distribution LLC, Disney DTC LLC, Disney Streaming Services LLC, Disney Platform Distribution, Inc., Bamtech, LLC, Hulu, LLC, and ESPN, Inc.

Related Matters: PO has asserted the ’639 Patent against Petitioner in *Adeia Technologies, Inc., et al. v. The Walt Disney Company, et al.*, No. 1:24-cv-01231-MN (D. Del.) (“Disney litigation”).

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III. FEE AUTHORIZATION

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. LA500639.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '639 Patent is available for review, and Petitioner is not barred or estopped from requesting review.

V. PRECISE RELIEF REQUESTED

Petitioner requests review and cancellation of Claims 8 and 13-15 as unpatentable based on the following grounds, supported by a declaration from Dr. Brian Anthony. Ex-1002 ¶¶1-32, 39-60; Ex-1003.

Ground	Summary
1-2	Claims 8 and 13 are obvious over Lewis (Ex-1005) alone or Lewis and Barraclough (Ex-1007)
3-4	Claims 14-15 are obvious over Lewis and Jain (Ex-1008) or Lewis-Barraclough and Jain
5-6	Claim 8 is obvious over Pyle (Ex-1006) alone or Pyle and Barraclough
7-8	Claims 13-15 are obvious over Pyle and Jain or Pyle-Barraclough and Jain

VI. THE CHALLENGED PATENT

The '639 Patent relates to techniques for dynamically rewriting timestamps in media streams “that transition from one source to another” during the creation of a manifest so that the requested media segments (i.e., “chunks”) are “continuous

through the transition.” Ex-1001, 2:12-19. Specifically, the ’639 Patent teaches “chunk-based media streaming” wherein media content “is processed into smaller chunks and stored,” for example, in a server of the cloud-hosted integrated multi-node pipelining system (CHIMPS). Ex-1001, 6:31-35.

Figure 6² below depicts an exemplary method for providing a manifest to a requesting client. Ex-1001, Fig. 6. At step 625, “a request to stream the live media content is received” from the client. Ex-1001, 13:23-25. The client request may be “a URL request to the CHIMPS 110, which can provide a manifest file.” Ex-1001, 6:35-40. At step 635, “[t]he manifest file is created,” which “includes information for streaming” live media content segments “via a data communications network” such as a list of Universal Resource Locators (URLs) “that can be used to request chunks of the live media content.” Ex-1001, 13:26-31. The chunks are transcoded “into various formats” to accommodate “various types of networks, clients, and/or end user devices used to stream the live content.” Ex-1001, 8:50-56; *see also id.*, 2:44-46, 5:50-53. At step 645, “the manifest file is sent” to the client. Ex-1001, 13:42-43. Independent Claim 8 recites these steps for requests from both a first client and second client having different device types, which results in the generation of a

² Throughout, emphasis and annotations are added unless otherwise specified.

first and a second manifest file according to a first and a second chunking protocol, respectively. Ex-1001, Cl. 8; Ex-1002 ¶¶33-34.

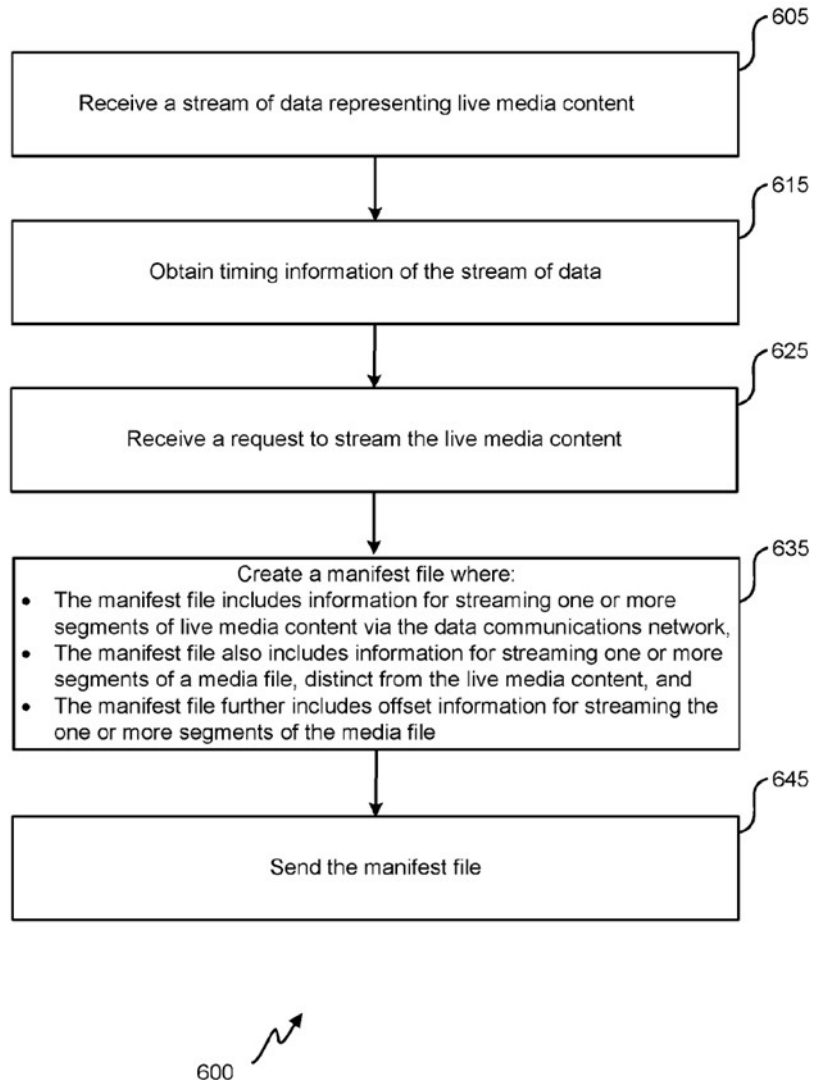


FIG. 6

VII. PROSECUTION HISTORY OF THE '639 PATENT

The '639 Patent was filed on October 28, 2016, and claims priority through a chain of 10 continuation applications, the earliest of which was filed December 22,

2010.³ The '639 Patent also claims priority to provisional application no. 61/884,709, filed September 30, 2013.

The prior art combinations and arguments in this Petition were not before the PTO during prosecution. Ex-1004. However, Applicant submitted a nine-page IDS, which cited 232 references including the publication version (US2012/0047542) of the Lewis reference (Ex-1005) described in Grounds 1-4. Ex-1004, 86-96. Applicant also filed a terminal disclaimer against the parent '688 Patent to obviate a double patenting rejection. Ex-1004, 1201-202. The Examiner did not issue any prior art rejections. Ex-1004, 1208-16.

During prosecution of the parent '688 Patent, the then-pending claims were rejected under 35 U.S.C. §103 as obvious over Biderman (US2010/0169303) in view of the publication version of Lewis. Ex-1027, 87-94. Applicant argued that the Biderman-Lewis combination did not teach that the manifest file includes “offset information based on the timing information of the stream of data” and that Lewis does not teach “providing, in the manifest file, an indication of a discontinuity in the stream of the live media content ... based on the determination of the type of client,” and “receiving a response to the request, the response including timing information,” among other limitations. Ex-1027, 108-119. After the Examiner issued a second

³ One of those continuation applications is U.S. Patent No. 9,197,688 (“the '688 Patent”), discussed below.

rejection over the Biderman-Lewis combination (Ex-1027, 123-133), Applicant amended the claims to recite that the manifest file includes offset information “indicative of a value by which at least one timestamp of the one or more segments of the media file is to be offset.” Ex-1027, 170-178.

The limitations that Applicant argued and/or added to overcome Lewis during prosecution of the ’688 Patent are not at issue in the ’639 Patent. The Examiner materially erred by not rejecting Claims 8 and 13-15 of the ’639 Patent over Lewis during prosecution because, as demonstrated in Grounds 1-4 below, Lewis in combination with Barraclough and/or Jain renders obvious each limitation of Claims 8 and 13-15. Ex-1002 ¶¶35-38.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the relevant time (“POSITA”) would have had a bachelor’s degree in electrical engineering, computer science, computer engineering, or a related field, and two-to-three years of experience in the research, design, development, or testing of interactive streaming technologies, computing and software systems, user interfaces, and platforms, with additional education substituting for experience and vice versa. Ex-1002 ¶¶27-31.

IX. PRIORITY DATE

For purposes of this proceeding only, Petitioner applies the earliest alleged priority date of the '639 Patent: December 22, 2010.⁴ Accordingly, pre-AIA 35 U.S.C. §103 applies and the '639 Patent was never eligible for PGR.

X. CLAIM CONSTRUCTION

For the purposes of this Petition, Petitioner identifies the following claim construction issues. Ex-1002 ¶¶61-65. Petitioner does not currently believe that any other terms require express construction. Consolidated Trial Practice Guide, 44, 45.

A. “Chunking protocol” (Claim 8)

In the litigation, Petitioner has proposed that the recited “chunking protocol” is a “protocol that dynamically creates segments of media based on a request.” Ex-1025, 2. PO has proposed that “[p]lain and ordinary meaning” should apply. Ex-1026, 1. As explained below, there is no meaningful difference between these constructions as applied to the prior art references at issue in this Petition.

B. “At least one beaconing URL which, when used, is indicative of [playback of at least one advertisement / a certain point has been reached in playback of the requested media source” (Claims 14-15)

In the litigation, Petitioner has proposed that these limitations are indefinite. *See* Ex-1025, 2. PO has proposed that “[p]lain and ordinary meaning” should apply.

⁴ Petitioner respectfully reserves the right to challenge the priority date in other proceedings.

Ex-1026, 1. For this proceeding only, Petitioner has applied PO's apparent interpretation of the term—i.e., a URL is used to signal or track playback of the advertisement or requested media source.

C. Order of steps 8[b] to 8[e] (Claim 8)

In the litigation, Petitioner has proposed that steps 8[b]-8[e] “must be performed in order” (Ex-1025, 2) and PO has proposed that these steps “do not need to be performed in sequential order.” Ex-1026, 1. As explained below, there is no meaningful difference between these constructions as applied to the prior art references at issue in this Petition because the prior art teaches performing the steps in the order recited by the claims.

D. Order of steps 8[g] to 8[j] (Claim 8)

In the litigation, Petitioner has proposed that steps 8[g]-8[j] “must be performed in order” (Ex-1025, 2) and PO has proposed that these steps “do not need to be performed in sequential order.” Ex-1026, 2. As explained below, there is no meaningful difference between these constructions as applied to the prior art references at issue in this Petition because the prior art teaches performing the steps in the order recited by the claims.

XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART

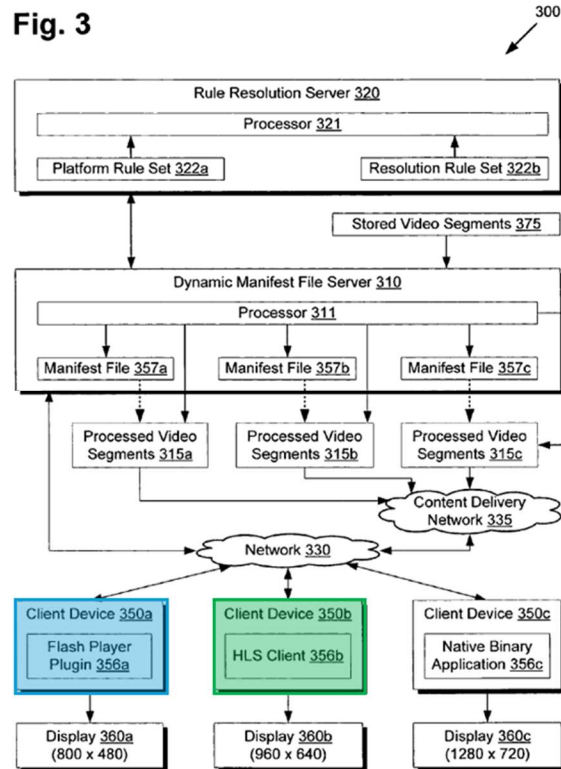
A. Lewis (Ex-1005)

Lewis (U.S. Patent No. 8,677,428) was filed August 20, 2010 and is prior art under 35 U.S.C. §102(e). Ex-1002 ¶¶66-68.

Lewis teaches a “method for rule-based dynamic server-side streaming manifest files.” Ex-1005, Abstract. Lewis teaches that “a client device 150 may send a request” by clicking “on a link ... for access to live video stream content.” Ex-1005, 3:16-28. Lewis further teaches that media player application 156 then sends a request, “such as a HTTP GET request ... to dynamic manifest file server 110,” which forwards “various parameters received from the request ... to rule resolution server 120” to “create a dynamically tailored manifest file.” Ex-1005, 3:28-38. The manifest file is then “passed back to client device 150 ... and placed into memory.” Ex-1005, 3:38-41.

As shown in Figure 3 below, Lewis’s “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including Flash Player plugin 356a at client device 350a” (blue) and “HTTP Live Streaming client 356b at client device 350b” (green). Ex-1005, 5:60-65, Fig. 3. For instance, for client device 350a, which uses Flash Player plug-in support, dynamic manifest file server 310 provides manifest file 357a “in the Flash Zeri HTTP streaming format for facilitated playback by Flash Player plugin 356a,” which accesses “the referenced

video content in processed video segments 315a over network 330.” Ex-1005, 6:14-21. For client device 350b, which uses HLS or HTTP Live Streaming support, dynamic manifest file server 310 provides “manifest file 357b in the HTTP Live Streaming format for facilitated playback by HLS client 356b,” which accesses “the referenced video content in processed video segments 315b over network 330.” Ex-1005, 6:31-38.



B. Pyle (Ex-1006)

Pyle (U.S. Patent No. 8,782,268) was filed November 3, 2010 and is prior art under §102(e). Ex-1002 ¶¶69-71.

Pyle teaches “dynamic composition of media for streaming to consuming devices.” Ex-1006, 1:14-15. Pyle teaches that “a request for the content can be transmitted (e.g., by a client),” which includes “a set of characteristics or attributes defining a suitable representation of the content.” Ex-1006, 32:45-49. The client requests are, for example, “time-based segment request URLs” (Ex-1006, 5:4-7, 5:21-22), which specify or describe the “locations” of the content included in a manifest (Ex-1006, 11:33-36) as well as “local configuration” information used “for determining a suitable representation” of the content. Ex-1006, 12:19-23. “[A] response to the request can be transmitted” to the client, which includes “a suitable manifest associated with the suitable representation of the content.” Ex-1006, 32:43-53.

As shown in Figure 12 below, Pyle teaches computing objects or devices 1220 (blue) and 1228 (green), which “can be thought of as clients.” Ex-1006, 34:21-22, Fig. 12. A composition component selects a particular “manifest 418 from the set of available manifests 204 based upon data included in a request 420 for content 206.” Ex-1006, 10:22-27. For example, if the content is a movie, requesting computing device 1220 can be “a HD television with very large form factor” (Ex-1006, 10:27-33) and requesting computing device 1228 “can be a smart phone with a more modest form factor and resolution support.” Ex-1006, 10:33-39, 10:53-56. Pyle explains that “[a]lthough both requesting devices can request the very same movie

... these two distinct devices and/or configurations ... will not demand the same representation 208 of that movie.” Ex-1006, 10:40-44. Composition component 210 thus selects a suitable manifest and transmits it to the requesting device. Ex-1006, 10:53-56.

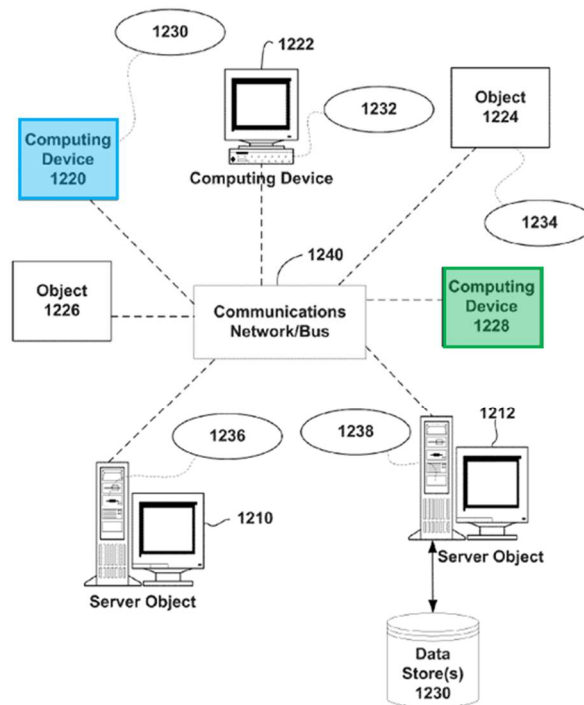


FIG. 12

C. Barraclough (Ex-1007)

Barraclough (U.S. Patent No. 9,047,235) was filed December 28, 2007 and is prior art under §102(e). Ex-1002 ¶¶72-73.

Barraclough teaches “approaches to media content routing, management and associated applications.” Ex-1007, 2:25-27. Barraclough teaches that “[w]hen the registered user ... wishes to access a playlist at a remote playback device, the user

accesses a web page hosted by” the server using their “hand-held wireless telephone-type device.” Ex-1007, 7:52-56. The user then “provides authentication information, such as the user name and password ... and in response the host authenticates the user ... and facilitates media playlist access.” Ex-1007, 7:56-62. Barraclough further teaches that the requesting device’s “device classification is retrieved from data stored for a particular user.” Ex-1007, 16:26-31. Host server 320 then “locates the appropriate version of the requested media file in the network-based content storage 360 and serves the contents of the file.” Ex-1007, 16:31-33, Fig. 3.

D. Jain (Ex-1008)

Jain (U.S. Patent Publication No. 2010/268573) was filed April 17, 2009, published October 21, 2010, and is prior art under §§102(a) and (e). Ex-1002 ¶¶74-75.

Jain teaches an audio beaconing system that includes an application programming interface (API) 113, which “is configured as a beaconing API object” that resides on the content server. Ex-1008 ¶¶18-19. As shown in Figure 2 below, Jain teaches “additional beacon events” 203, where as an “advertisement is served, an event beacon, which may include advertisement URL data, is transmitted.” Ex-1008 ¶33, Fig. 2 (yellow). Jain teaches that the “beacon also transmits a timestamp” and “[a]t the conclusion of the video, a video end beacon is transmitted to indicate the user/panelist is no longer viewing specific media.” Ex-1008 ¶33.

200	Time →	0-3 sec	4 sec 180 300 sec				301-315 sec	316—599 sec	600 sec
201	Activities→	Video Loaded	Video Played				Ad served	Video continues	Video End
202	Audio Beacon detected by portable device →	Continuous Audio representing the website (e.g., Hulu.com)							
203	Additional beacon events →	URLs (Hulu.com & Video ID)					AD Event Beacon (co-relation URL)		Video End Beacon
204	Audio matching events detected by portable device →		Audio Signature Sample 1	Audio Signature Sample 2	Audio Signature Sample 3 (Content Match Achieved)	Same Signature Sample 4 (No Change)	Audio Signature Sample 5 (Different Content couldn't match)	Audio Signature Sample 5 (Same Video again)	No Signature (But Can't assume video is completed)
205	Overlay portable device data	X			X		X	X	X
206	End- User Experience	URL of site where the video was played			Content Matched		Ad Served		Video Played till the End

FIG. 2

XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

A. Grounds 1-2: Claims 8 and 13 are obvious over Lewis alone or Lewis and Barraclough.

1. A POSITA would have been motivated to combine Lewis's teachings with Barraclough's teachings and would have had a reasonable expectation of success.

A POSITA would have been motivated to combine the teachings of Lewis and Barraclough and had a reasonable expectation of success in doing so because both address server-side selection of streaming media in response to the requesting device's characteristics and/or capabilities. Ex-1005, Abstract, 6:6-38, Fig. 3; Ex-1007, 3:22-36, 14:60-15:3; Ex-1002 ¶76.

Lewis teaches that “parameter data from the HTTP GET request” includes details such as, for example, “browser or operating platform” and other device parameters, which are “evaluated against a plurality of rules” for live video segments. Ex-1005, 8:42-52. For example, “when *client device 350a* requests video content ... dynamic manifest file server 310 may *provide manifest file 357a in the Flash Zeri HTTP streaming format* for facilitated playback by Flash Player plugin 356a” and “when *client device 350b* requests video content ... dynamic manifest file server 310 may *provide manifest file 357b in the HTTP Live Streaming format* for facilitated playback by HLS client 356b.” Ex-1005, 6:6-38. A POSITA would thus have understood that Lewis teaches determining the device type (i.e., Flash Player Plugin 356a and HLS client 356b) based on the identity of the client (i.e., client device 350a and 350b, respectively). Ex-1002 ¶¶77-78.

Moreover, Barraclough teaches that “[w]hen the host server 320 receives a request for a media file,” “the device making the request is classified and the device class is used to map to an appropriate encoding of the file to deliver.” Ex-1007, 16:22-26. Barraclough further teaches that “the *device classification is retrieved from data stored for a particular user* (e.g., at the data storage arrangement 330).” Ex-1007, 16:26-31. Host server 320 then “locates the appropriate version of the requested media file in the network-based content storage 360” and sends it to the user. Ex-1007, 16:31-33.

Thus, in view of both Lewis and Barraclough, a POSITA would have been motivated to determine the device type based on the client identity. For example Lewis's method uses device classification based on the device identity, and Barraclough teaches complementary information stored for the particular user of a particular device. These teachings would have been implemented together because storing the user's device types, as taught by Barraclough, would further Lewis's goals of "client customization" and "user and device targeting." Ex-1005, Abstract; Ex-1002 ¶79. Additionally, both references address the same core problem and offer complementary solutions: Barraclough solves what to deliver (playlist items, in suitable formats/bitrates, from cloud storage) and who/when to deliver (host server authentication and control). Lewis solves how to package the actual stream at the requested time via a device-appropriate manifest with segment lists. Unifying them produces a cloud playlist service that returns a dynamic manifest per playlist item/session, an obvious fit because Barraclough already contemplates server-side formatting for device/bandwidth and server-controlled streaming. Ex-1002 ¶¶79-84 (discussing other motivations to combine including predictable benefit of device and bandwidth targeting, natural layering "playlist" to "manifest," market pressures, and common sense). In the Lewis-Barraclough combination, Lewis's dynamic manifest file server determines the first device type (i.e., Flash Player Plugin 356a) and second device type (i.e., HLS Client 356b) based on data stored for the particular client (i.e.,

first device 350a and second device 350b, respectively), as taught by Barraclough. Ex-1002 ¶79.

A POSITA would have had a reasonable expectation of success in combining the teachings of Lewis and Barraclough. Ex-1002 ¶85. Both describe methods for streaming media content in response to a request in a similar manner such as by storing the media content in different formats corresponding to different device types and selecting a suitable format based on the requesting device type. Ex-1005, Abstract, 6:6-38, Fig. 3; Ex-1007, 3:22-36, 14:60-15:3. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶85.

2. Independent Claim 8

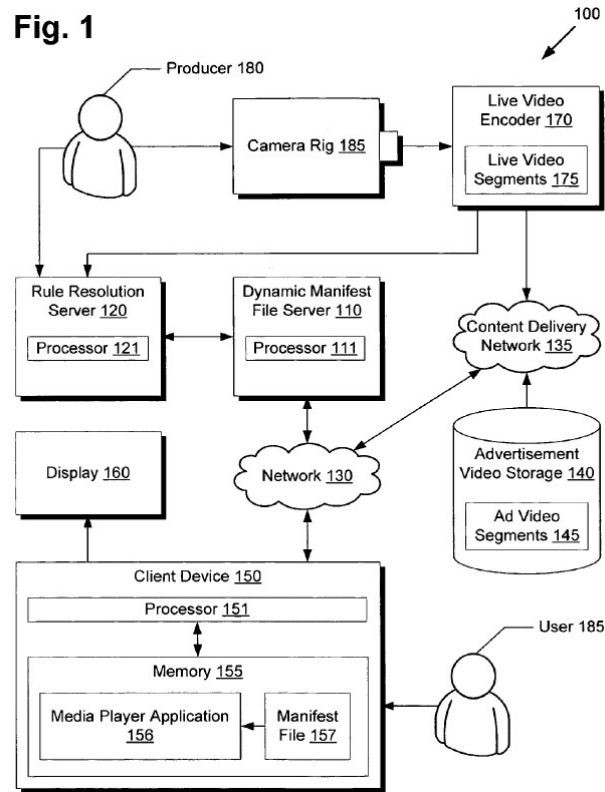
a. **Element 8[pre]: A method of streaming media via a data communications network, the method comprising:**

Lewis or Lewis and Barraclough (“Lewis-Barraclough”) teaches ⁵ the preamble, to the extent it is limiting. Ex-1002 ¶¶86-87.

Lewis teaches a “method for rule-based dynamic server-side streaming

⁵ Petitioner uses the term “teaches” to include both express teachings and those fairly suggested to a person of ordinary skill in the art. *In re Baird*, 16 F.3d 380, 383 (Fed. Cir. 1994); *In re Keller*, 642 F.2d 413, 425 (CCPA, 1981) (“The test for obviousness is...what the combined teachings of the references would have suggested to those of ordinary skill in the art.” (citations omitted)).

manifest files,” which includes “receiving a request to provide” video content, “generating a dynamic manifest file referencing” the video content, and “providing the dynamic manifest file in response to the request.” Ex-1005, Abstract. As shown in Figure 1 below, the media content is stored and distributed over content delivery network 135, which comprises “a network of servers.” Ex-1005, 3:4-6.



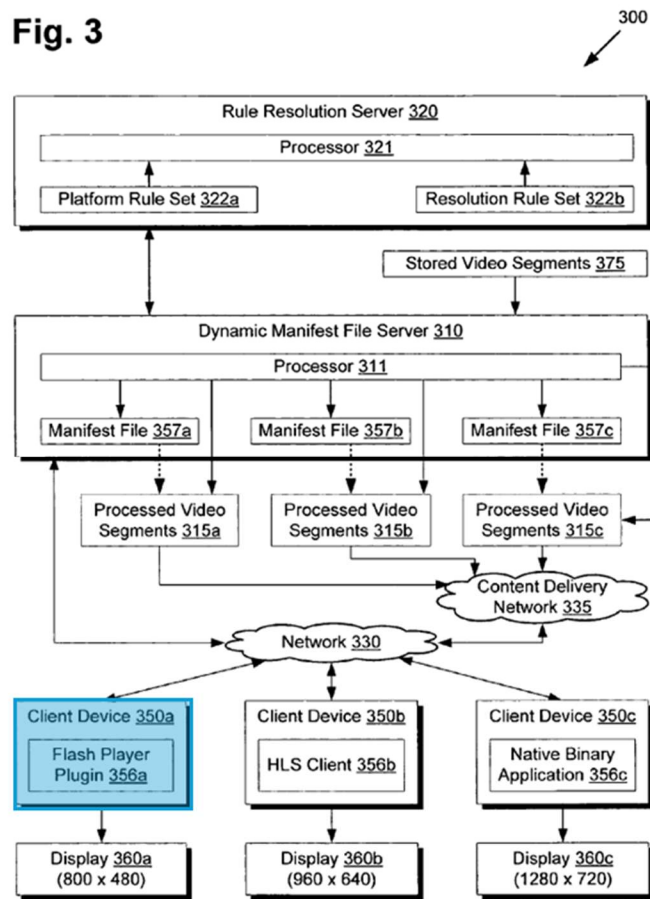
- b. Element 8[a]: receiving a universal source locator (URL) in a first request from a first client, wherein the URL includes information indicative of a requested media source;**

Lewis or Lewis-Barraclough teaches Element 8[a]. Ex-1002 ¶88.

Lewis teaches receiving a URL in a first request from a first client that indicates a requested media source. Specifically, Lewis teaches that the user directs

the client device “to execute media player application 156” (e.g., a web browser), “by clicking on an application icon shown on display 160.” Ex-1005, 3:21-25. The user then navigates “to a video streaming portal site accessible over network 130 to *click on a link directed to dynamic manifest file server 110 for access to live video stream content.*” Ex-1005, 3:25-28. Media player application 156 then sends “*a HTTP GET request* over network 130 to dynamic manifest file server 110,” which forwards “various parameters received from the request” to rule resolution server 120 “to evaluate various business rules and create a dynamically tailored manifest file accordingly.” Ex-1005, 3:28-38. As shown in Figure 3 below, Lewis allows users of a plurality of client devices including “client devices 350a through 350c” (Ex-1005, 5:37), to request content. Ex-1005, Fig. 3, 6:5-21 (“*client device 350a* requests video content”). The HTTP GET request received from a user of client device 350a (blue) corresponds to the recited URL “in a first request from a first client” received by the dynamic manifest file server. Ex-1002 ¶89. The URL includes information indicative of the requested media source, which is the requested “live video stream content.” Ex-1002 ¶¶89-91.

Fig. 3



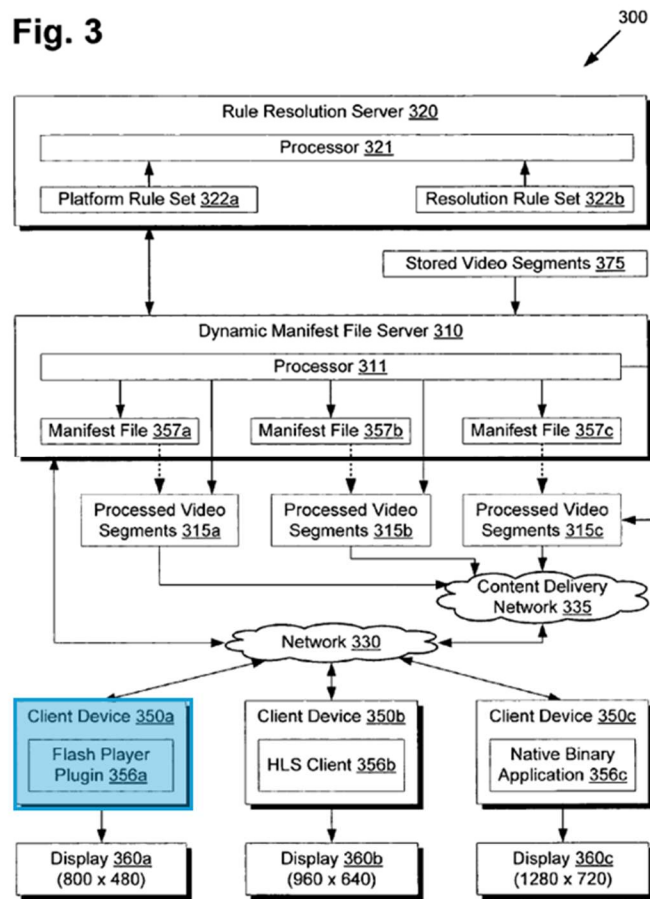
c. **Element 8[b]: determining an identity of the first client;**

Lewis or Lewis-Barracough teaches Element 8[b]. Ex-1002 ¶92.

Lewis teaches determining the identity of the first client. Lewis teaches that a URL's HTTP GET parameters include client details such as “the *client IP address*,” “*device identifiers*,” “or *user parameters*,” which are “evaluated against a plurality of rules” for live video segments 175. Ex-1005, 8:47-52. Lewis also teaches that “a *user tracking profile* associated with client device 350a may be analyzed to formulate a targeted advertising campaign for the manifest file 357a ... to be most

relevant and interesting for *the user of client device 350a*.” Ex-1005, 7:13-19. As shown in Figure 3 below, Lewis’s system is designed to identify and distinguish different types of user client devices: “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including Flash Player plugin 356a *at client device 350a*, HTTP Live Streaming client 356b *at client device 350b*, and native binary application 356c *at client device 356c*.” Ex-1005, 5:60-65, Fig. 3. The “user of client device 350a” corresponds to the recited “identity of the first client.” Ex-1002 ¶¶93-95. Therefore, the first client’s identity is determined by the rule resolution server using, for example, the client IP address, device identifier, and/or the user tracking profile, which are analyzed by the server to generate the manifest file. *Id.*

Fig. 3



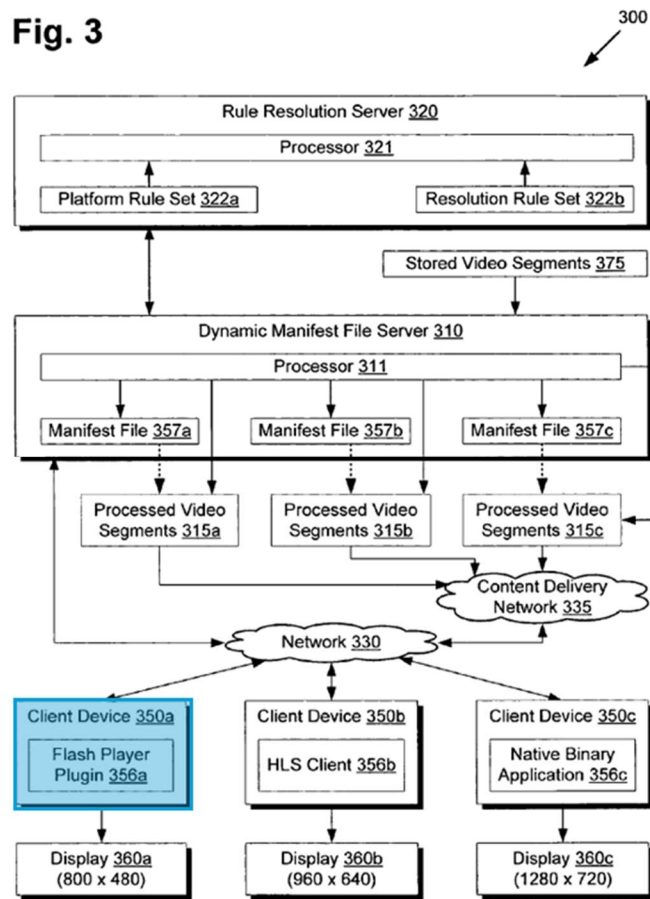
d. Element 8[c]: determining a first device type based on the identity of the first client;

Lewis or Lewis-Barracough teaches Element 8[c]. Ex-1002 ¶¶96.

Ground 1: Lewis teaches determining the first device type based on the first client's identity. Lewis teaches that a device type may be determined using a user's "parameter data from the HTTP GET request," which includes device-specific details such as "browser or operating platform" "and other device, display, or user parameters," which are "evaluated against a plurality of rules" for live video segments 175. Ex-1005, 8:42-52. Lewis also teaches "client or *device targeting*,

wherein video content is processed and customized according to particular client device parameters.” Ex-1005, 5:58-60. As shown in Figure 3 below, “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including *Flash Player plugin 356a at client device 350a.*” Ex-1005, 5:60-65. Platform rule set 322a includes “various rules as how to customize video content based on the target device platform to be supported.” Ex-1005, 5:65-67. Each of the users of the exemplary client devices in Figure 3 (e.g., **350a**, 350b, 350c) has a corresponding device type (e.g., *Flash Player Plugin 356a*, HLS Client 356b, Native Binary Application 356c, respectively), which the server determines to generate the appropriate manifest file for that particular device. Ex-1005, Fig. 3 (blue); Ex-1002 ¶97. For instance, for the user using “*client device 350a*” (i.e., first client identity), platform rule set 322a may dictate that if the client device request indicates “*Flash Player plug-in support*,” then dynamic manifest file server 310 should preferably generate a F4M Flash Zeri manifest file ... referencing F4F Flash video files.” Ex-1005, 6:5-21. Flash Player Plugin 356a corresponds to the recited “first device type.” Ex-1002 ¶97. Lewis thus teaches determining the first device type (i.e., Flash Player Plugin 356a) based on the first client identity (i.e., user using client device 350a). Ex-1002 ¶¶97-98.

Fig. 3



To the extent PO argues that Lewis’s device type determination is not based on the client’s identity, this feature is further taught by Barraclough.

Ground 2: Barraclough teaches providing media content over a packet-based network for remote access by a user. Ex-1007, Abstract. Specifically, Barraclough teaches that “host server 320 serves the populated content” from content storage 360 “to *authorized users* at remote packet-based devices.” Ex-1007, 16:20-22. Barraclough further teaches that “[w]hen the host server 320 receives a request for a media file ... *the device making the request is classified and* the device class is

used to map to an appropriate encoding of the file to deliver.” Ex-1007, 16:22-26.

Additionally, in some applications, “*the device classification is retrieved from data stored for a particular user* (e.g., at the data storage arrangement 330).” Ex-1007, 16:26-31. The device type classification is thus specifically based on the identify of a particular user that requested the media. Host server 320 then “locates the appropriate version of the requested media file ... and serves the contents of the file.” Ex-1007, 16:31-33, Fig. 3 (blue).

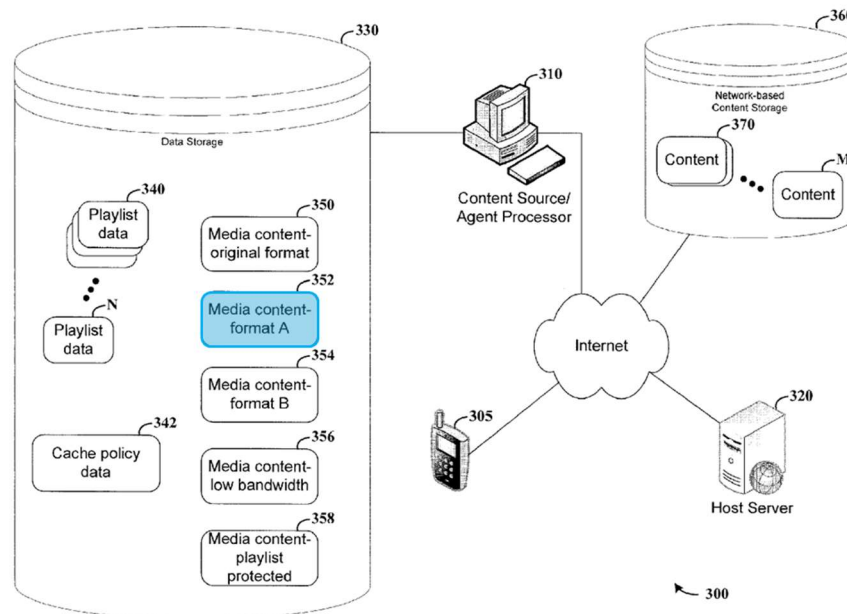


FIG. 3

In the Lewis-Barracough combination, Lewis’s dynamic manifest file server determines the first device type (i.e., Flash Player Plugin 356a) based on the particular client (i.e., user using first client device 350a), as taught by both Lewis’s “user tracking profile” and Barracough’s “particular user” data storage. Ex-1002

¶¶99-101. A POSITA would have been motivated to combine Lewis-Barracough and had a reasonable expectation of success in doing so for the reasons described in Section XII.A.1. *Id.*

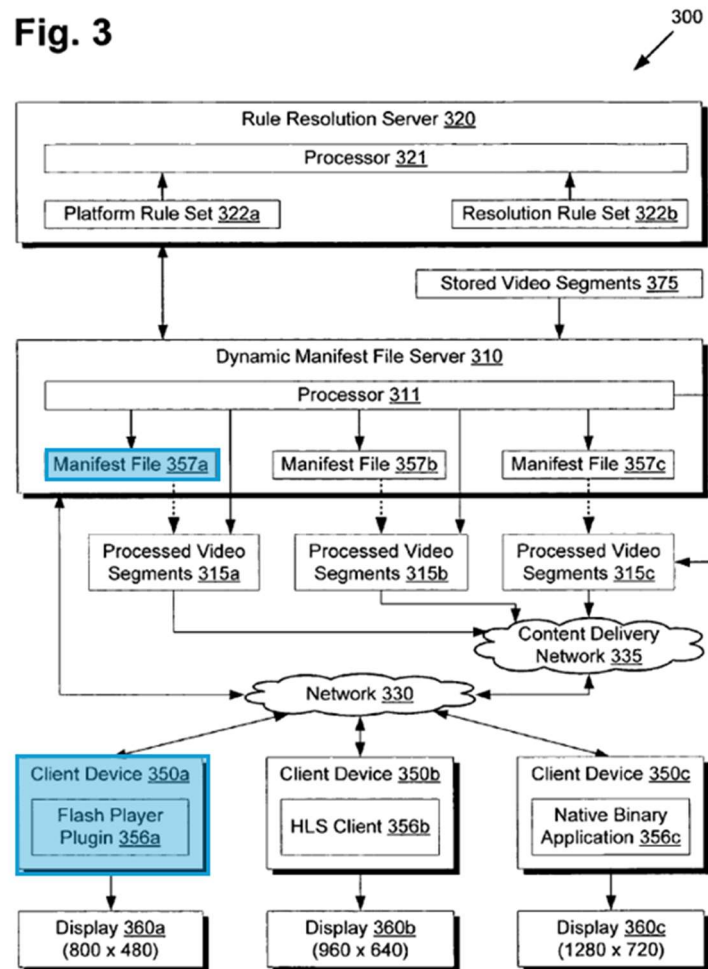
- e. **Element 8[d]: based at least in part on the determination of the first device type, generating, with a processor, a first manifest having information for streaming one or more segments of the requested media source in accordance with a first chunking protocol via the data communications network;**

Lewis or Lewis-Barracough teaches Element 8[d]. Ex-1002 ¶102.

(1) Generating first manifest with a processor based on determination of first device type

Lewis teaches that “[d]ynamic manifest server 310 includes *processor 311* and manifest files 357a through 367c.” Ex-1005, 5:40-41. As shown in Figure 3 below, “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including Flash Player plugin 356a at client device 350a.” Ex-1005, 5:60-67. Moreover, Lewis teaches that “for client device 350a ... if a request” indicates “*Flash Player plug-in support*, then dynamic manifest file server 310 should preferably *generate a F4M Flash Zeri manifest file, or manifest file 357a*, referencing F4F Flash video files, or processed video segments 315a.” Ex-1005, 6:5-10, Fig. 3 (blue). Manifest file 357a corresponds to the recited “first manifest” based on the first device type. Ex-1002 ¶¶103-104.

Fig. 3



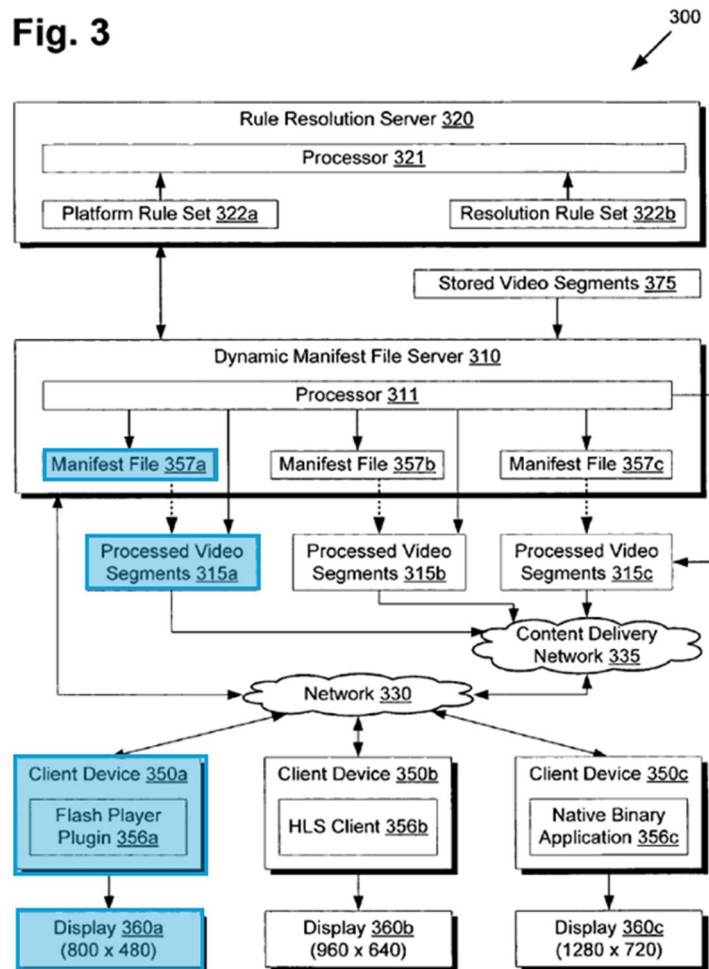
(2) Manifest has information for streaming requested media source segments via data communications network

Lewis teaches that “*when client device 350a requests video content represented by stored video segments 375, dynamic manifest file server 310 may provide manifest file 357a in the Flash Zeri HTTP streaming format for facilitated playback by Flash Player plugin 356a.*” Ex-1005, 6:14-18. Flash Player plugin 356a then accesses “*the referenced video content in processed video segments 315a over network 330 via content delivery network 335.*” Ex-1005, 6:19-21; Ex-1002 ¶105.

(3) In accordance with first chunking protocol

Lewis teaches that the first manifest has information for streaming the requested media source segments in accordance with a first chunking protocol. Lewis teaches that for client device 350a, “[p]rocessed video *segments* 315a *may be encoded from stored video segments* 375, and may be *resized and cropped* ... to optimally fit the 800 by 480 resolution provided by display 360a.” Ex-1005, 6:5-14, Fig. 3 (blue). Dynamic manifest file server 310 then provides manifest file 357a “*in the Flash Zeri HTTP streaming format* for facilitated playback by Flash Player plugin 356a,” which accesses “the referenced video content in processed video segments 315a.” Ex-1005, 6:14-21, Fig. 3 (blue). Lewis also teaches that the HTTP streaming format is a protocol that determines how the video segments are fragmented and sent to the client device. Specifically, Lewis teaches that “the live video footage may be *encoded into MPEG transport stream (TS) fragment files of a fixed length, such as 10 seconds*, for ease of distribution *using streaming protocols such as HTTP streaming*.” Ex-1005, 2:64-3:1. The HTTP streaming protocol was a well-known protocol where media is sent in chunks over HTTP so that the client can start playing it before the entire file is downloaded. Ex-1002 ¶¶106-107.

Fig. 3



Lewis’s HTTP chunking protocol, which encodes fragment files of a fixed length into MPEG TS fragment files, when applied to the first manifest generated based on the determination of the first device type (i.e., Flash Player plugin), corresponds to the recited “first chunking protocol.” Ex-1002 ¶108. Lewis thus teaches the “chunking protocol” limitation under either parties’ construction because it teaches both a “protocol that *dynamically* creates segments of media based on a [user’s] request” and more broadly teaches a pre-determined protocol that allows

data to be sent in a series of smaller, manageable pieces. Ex-1002 ¶¶108-110; *see, e.g.*, Ex-1005, 7:4-6.

f. Element 8[e]: sending the first manifest to the first client;

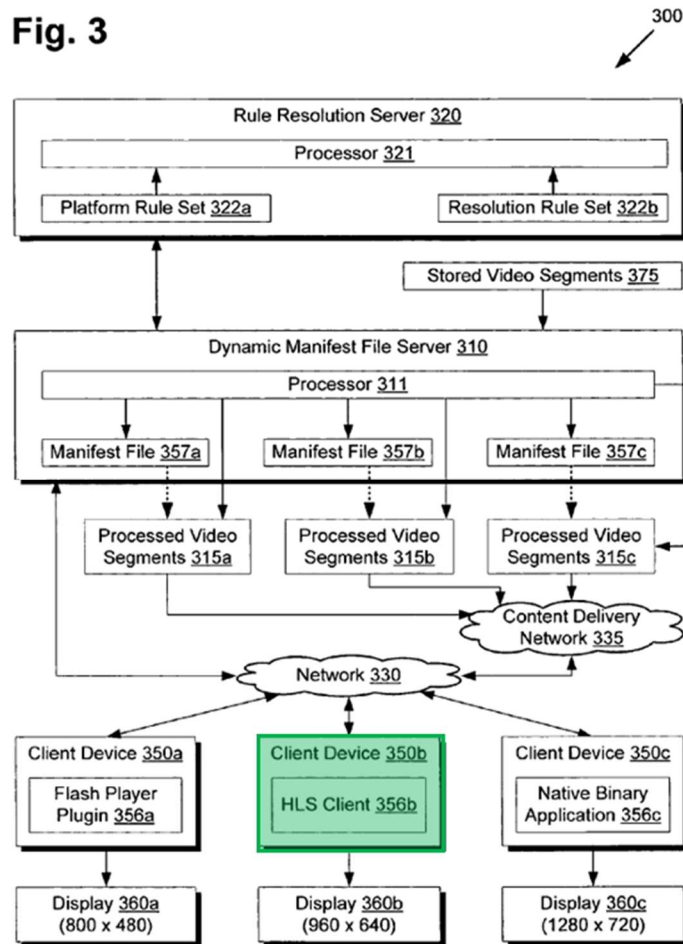
Lewis or Lewis-Barracough teaches Element 8[e]. Ex-1002 ¶¶111-113.

Lewis teaches that “*dynamic manifest file server 310 may provide manifest file 357a* in the Flash Zeri HTTP streaming format *for facilitated playback* by Flash Player plugin 356a” to client device 350a. Ex-1005, 6:14-18; *see also id.*, 3:16-41.

g. Element 8[f]: receiving the URL in a second request from a second client;

Lewis or Lewis-Barracough teaches Element 8[f] for the reasons described in Section XII.A.2.b. Ex-1002 ¶114. Specifically, Lewis allows users of a plurality of client devices including “client devices 350a through 350c” (Ex-1005, 5:37), to request content. Ex-1005, Fig. 3, 6:22-38 (“*client device 350b* requests video content”). As discussed in Section XII.A.2.b, the HTTP GET request received from a user of client device 350b (green) corresponds to the recited “URL in a second request from a second client” received by the dynamic manifest file server. Ex-1002 ¶¶114-116.

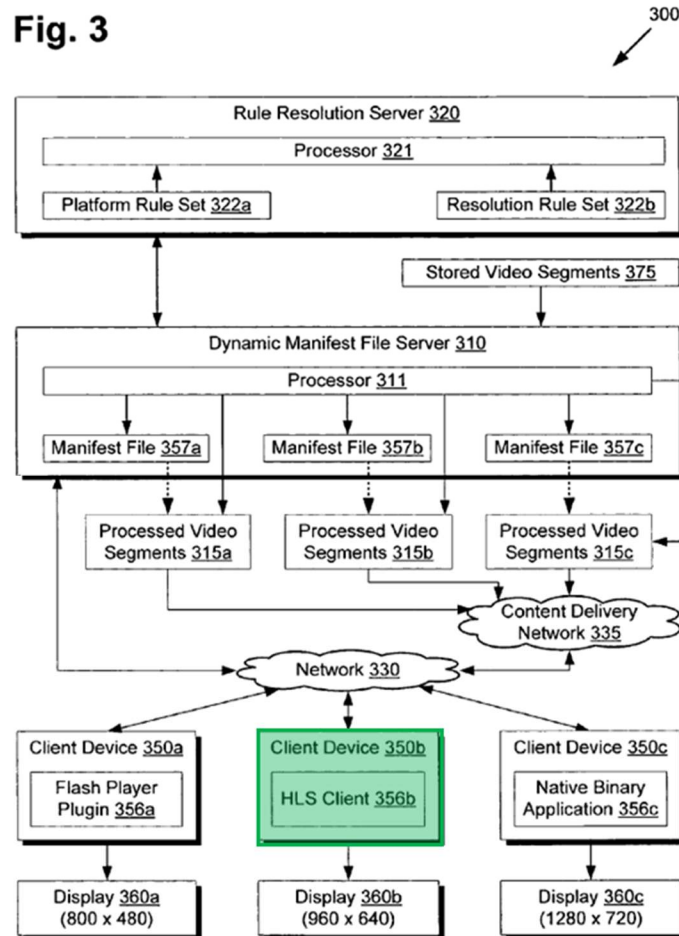
Fig. 3



- h. Element 8[g]: determining an identity of the second client, the identity of the second client different from the identity of the first client;**

Lewis or Lewis-Barracough teaches Element 8[g] for the reasons described in Section XII.A.2.c. Ex-1002 ¶117. Specifically, Lewis teaches that a URL's HTTP GET parameters may include client details such as “the *client IP address*,” “*device identifiers*,” “or *user parameters*,” which are “evaluated against a plurality of rules” for live video segments 175. Ex-1005, 8:47-52. Lewis also teaches that “a user tracking profile associated with” the particular client device (i.e., 350b) “may be

analyzed to formulate a targeted advertising campaign for the manifest file ... for the user of client device.” Ex-1005, 7:13-19. As shown in Figure 3 below, Lewis’s system is designed to identify and distinguish different types of client devices that users may use: “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including ... HTTP Live Streaming client 356b at *client device 350b*.” Ex-1005, 5:60-65, Fig. 3 (green). The “user of client device 350b” corresponds to the recited second client identity, which is different from the first client identity. Ex-1002 ¶¶117-119.

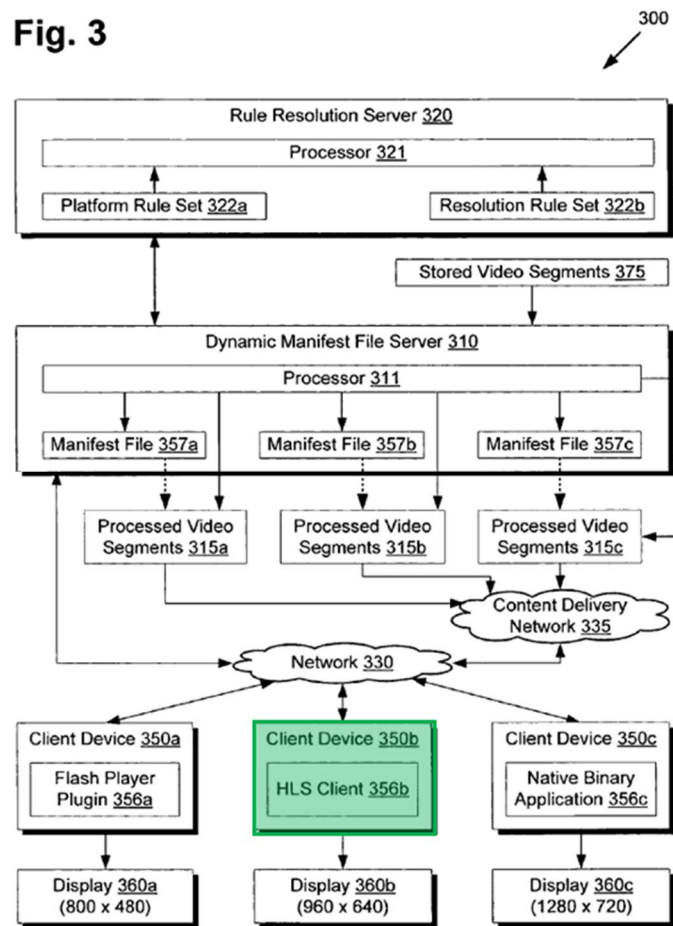


- i. **Element 8[h]: determining a second device type based on the identity of the second client, the second device type different from the first device type;**

Lewis or Lewis-Barracough teaches Element 8[h]. Ex-1002 ¶120.

Ground 1: As explained in Section XII.A.2.d, each of the users of the exemplary client devices in Figure 3 (e.g., **350b**) has a corresponding device type (e.g., **HLS Client 356b**), which the server determines to generate the appropriate manifest file for that particular device. Ex-1005, Fig. 3 (green); Ex-1002 ¶121. For example, for the user using “client device 350b” (i.e., the second client identity), “platform rule set 322a may dictate that if a request” indicates “**HLS or HTTP Live Streaming support**,” then dynamic manifest file server 310 should preferably generate a M3U8 manifest file, or manifest file 357b, referencing MPEG transport stream video files, or processed video segments 315b.” Ex-1005, 6:22-27. HLS Client 356b corresponds to the recited “second device type,” which is “different from the first device type.” Ex-1002 ¶121. Lewis thus teaches determining the second device type (i.e., HLS Client 356b) based on the second client identity (i.e., user using client device 350b). Ex-1002 ¶¶121-122.

Fig. 3



To the extent PO argues that Lewis’s device type determination is not based on the client’s identity, this feature is further taught by Barraclough.

Ground 2: Barraclough teaches this limitation for the reasons described in Section XII.A.2.d. Ex-1007, 16:26-31 (“device classification is retrieved from data stored for a particular user”), Fig. 3 (green).

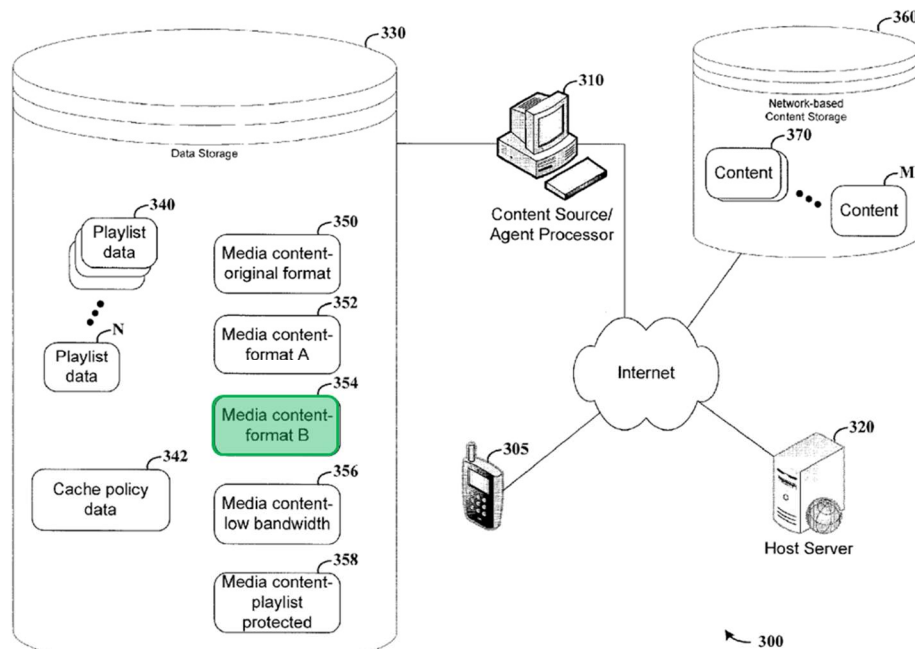


FIG. 3

In the Lewis-Barracrough combination, Lewis’s dynamic manifest file server determines the second device type (i.e., HLS Client 356b) based on the particular client (i.e., user using second client device 350b), as taught by both Lewis’s “user tracking profile” and Barracrough’s “particular user” data storage. Ex-1002 ¶¶123-125.

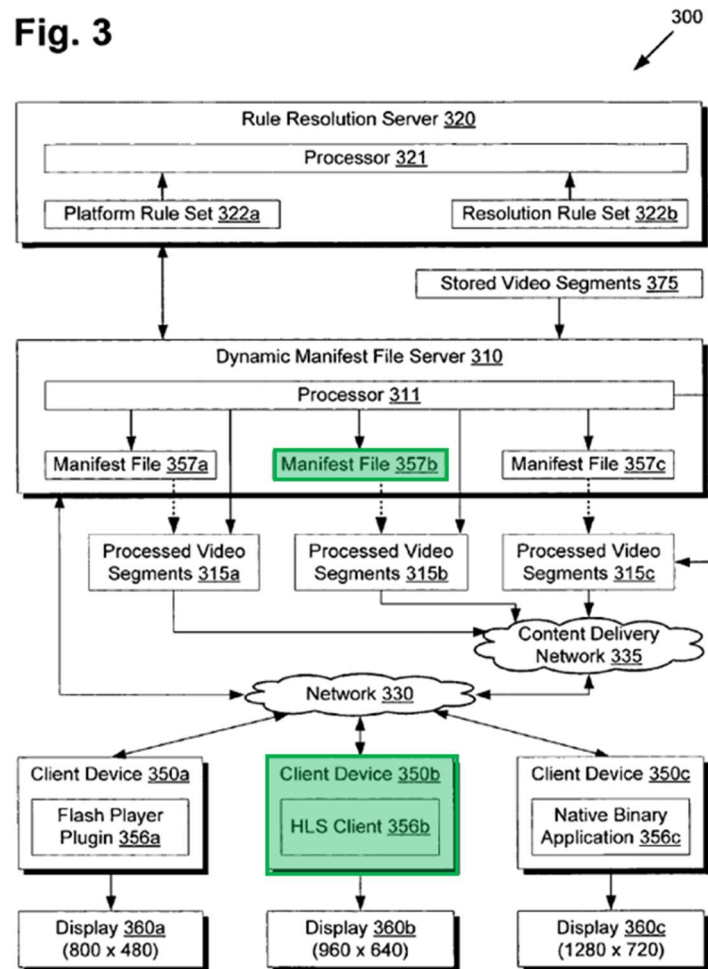
- j. **Element 8[i]: based at least in part on the determination of the second device type, generating, with the processor, a second manifest having information for streaming the one or more segments of the requested media source in accordance with a second chunking protocol via the data communications network, wherein content of the second manifest is different from content of the first manifest; and**

Lewis or Lewis-Barraclough teaches Element 8[i] for the reasons described in Section XII.A.2.e. Ex-1002 ¶126.

- (1) **Generating second manifest based on determination of second device type, wherein content of second manifest is different from content of first manifest**

Lewis teaches that “dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including ... HTTP Live Streaming client 356b at client device 350b.” Ex-1005, 5:60-65, Fig. 3. For example, for client device 350b, if a request indicates “*HLS or HTTP Live Streaming support*, then dynamic manifest file server 310 should preferably *generate a M3U8 manifest file, or manifest file 357b*, referencing MPEG transport stream video files, or processed video segments 315b.” Ex-1005, 6:22-27, Fig. 3 (green). Manifest file 357b corresponds to the recited “second manifest” based on the second device type, having different content from that of first manifest file 357a. Ex-1002 ¶127.

Fig. 3



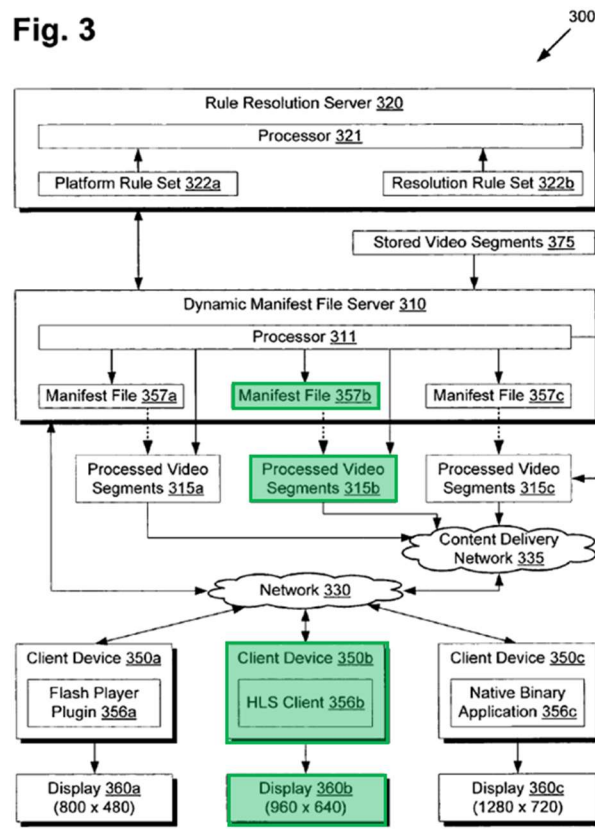
(2) Manifest has information for streaming requested media source segments via data communications network

Lewis teaches that “*when client device 350b requests video content ... dynamic manifest file server 310 may provide manifest file 357b in the HTTP Live Streaming format for facilitated playback by HLS client 356b.*” Ex-1005, 6:31-35. HLS client 356b then accesses “*the referenced video content in processed video segments 315b ... via content delivery network 335.*” Ex-1005, 6:35-38; Ex-1002 ¶128.

(3) In accordance with second chunking protocol

Lewis teaches that the second manifest has information for streaming the requested media source segments in accordance with a second chunking protocol. Lewis teaches that for client device 350b, “[p]rocessed video *segments* 315b *may be encoded from stored video segments* 375, and may be *resized and cropped* ... to optimally fit the 960 by 640 resolution provided by display 360b.” Ex-1005, 6:28-31, Fig. 3 (green). Dynamic manifest file server 310 then provides manifest file 357b “*in the HTTP Live Streaming format* for facilitated playback by *HLS* client 356b,” which accesses “the referenced video content in processed video segments 315b.” Ex-1005, 6:31-38, Fig. 3 (green). HTTP Live Streaming (“HLS”) was a well-known “chunking protocol” implemented by Apple by 2010 and, indeed, is the most common chunking protocol in streaming. Ex-1002 ¶129 (citing, e.g., Ex-1043, 59-60, 62). The HLS chunking protocol breaks video into small chunks (typically 2-10 seconds), with a playlist file (M3U8) that tells the player which chunks to request next. Ex-1002 ¶129. Lewis expressly teaches that its manifest file may comprise a M3U8 playlist file. Ex-1005, 3:46-48.

Fig. 3



Lewis’s HLS chunking protocol, when applied to the second manifest generated based on the determination of the second device type (i.e., HLS Client 356b), corresponds to the recited “second chunking protocol.” Ex-1002 ¶130. Moreover, as explained in Section XII.A.2.e, Lewis teaches the “chunking protocol” limitation under either parties’ construction. Ex-1002 ¶¶130-132.

k. Element 8[j]: sending the second manifest to the second client.

Lewis or Lewis-Barracough teaches Element 8[j] for the reasons described in Section XII.A.2.f. Ex-1002 ¶¶133-136.

Lewis teaches that “dynamic manifest file *server 310 may provide manifest file 357b in the HTTP Live Streaming format for facilitated playback* by HLS client 356b” to client device 350b. Ex-1005, 6:31-35; *see also id.*, 3:16-41.

Thus, Lewis or Lewis-Barracough renders obvious Claim 8.

3. Dependent Claim 13

- a. **Element 13[pre]: The method of streaming media via the data communications network as recited in claim 8, further comprising:**

Lewis or Lewis-Barracough teaches the preamble. *See* Section XII.A.2.a. Ex-1002 ¶137.

- b. **Element 13[a]: receiving data regarding the requested media source, wherein the data includes information indicative of at least one point, during playback of the requested media source, at which at least one other media source is to be shown;**

Lewis or Lewis-Barracough teaches Element 13[a]. Ex-1002 ¶138.

Lewis teaches receiving data regarding the requested media source at the client device, which is ultimately included in the manifest file. Lewis teaches that dynamic manifest file server 110 forwards parameters received in the client request to rule resolution server 120 to “create a dynamically tailored manifest file accordingly, which may then be passed back to client device 150” as a “manifest file.” Ex-1005, 3:30-41. The manifest file references “live video segments ... on servers hosted in content delivery network 135.” Ex-1005, 3:44-46; *see also id.*,

3:46-48 (manifest file may comprise “a playlist file such as a M3U8 playlist file”). The manifest file, which is received by the client device, includes the recited data received “regarding the requested media source.” Ex-1002 ¶139.

To the extent PO argues that the “receiving” step refers to data received *at the server* regarding the requested media source, this is also taught by Lewis. Lewis teaches that producer 180 records “live footage ... to be streamed to users,” which is sent “to live video encoder 170” to “encode the live video footage in real-time into live video segments 175,” which are distributed over content delivery network 135. Ex-1005, 2:59-3:4. Content delivery network 135 comprises “a network of servers for storage and distribution of media content.” Ex-1005, 3:4-6. Lewis further teaches that live video encoder 170 provides “rule resolution server 120 with an updated list of references for accessing live video segments 175 ... which may then be passed to dynamic manifest file server 110 for generating manifest file 157.” Ex-1005, 3:6-11. Therefore, the servers receive data (e.g., rules for access and generation of the manifest file) regarding the requested media source (i.e., live video segments). Ex-1002 ¶140.

Lewis also teaches that data in the manifest file includes information indicative of a point during playback at which another media source is to be shown. Lewis teaches that “*substantive content such as advertising content may also be targeted and prepared* based on various parameterized rules evaluated by rule

resolution server 320.” Ex-1005, 7:10-13. The user’s tracking profile for client device 350a, for example, “may be analyzed to formulate a targeted advertising campaign for manifest file 357a, *adding appropriate pre-roll, post-roll, and mid-roll advertising content* estimated to be most relevant and interesting for the user of client device 350a.” Ex-1005, 7:13-19. Lewis also teaches that “[p]roducer 180 may provide specific rules to rule resolution server 120 to customize the generation of manifest file 157, such *a rule to insert advertising segments to overwrite a particular time block* in the live stream.” Ex-1005, 3:11-15. The “advertising segments” correspond to the recited “other media source” and the associated “time block” corresponds to the recited “at least one point, during playback.” Ex-1002 ¶141. Data in the manifest file received at the client device and/or in the rules provided to the server thus includes information indicative of a point during playback of the requested media source (i.e., live video segments) at which the other media source (i.e., advertising segments) is to be shown. Ex-1005, 3:44-46; Ex-1002 ¶141.

c. Element 13[b]: receiving information regarding the at least one other media source; and

Lewis or Lewis-Barracough teaches Element 13[b]. Ex-1002 ¶142.

Lewis teaches receiving information regarding the other media source (i.e., advertising segments) at the client device. The manifest file received by the client

references “live video segments and ad video segments on servers.” Ex-1005, 3:44-46; *see also id.*, 3:46-48. This information is also received at the server. Lewis teaches that producer 180 dynamically adds “new rules to ***rule resolution server 120*** ... to schedule advertising blocks,” which then directs “dynamic manifest file server 110 to ***switch to advertising content at specific time blocks*** specified by the new rules.” Ex-1005, 3:55-60. For example, “producer 180 may provide a rule ... specifying a time block to ***switch to a commercial***, such as ***thirteen (13) seconds into the live broadcast.***” Ex-1005, 4:52-55. The timing information for switching to advertising segments received by the client device in the manifest file and at the server from producer 180 corresponds to the recited “information” received “regarding the at least one other media source.” Ex-1002 ¶143.

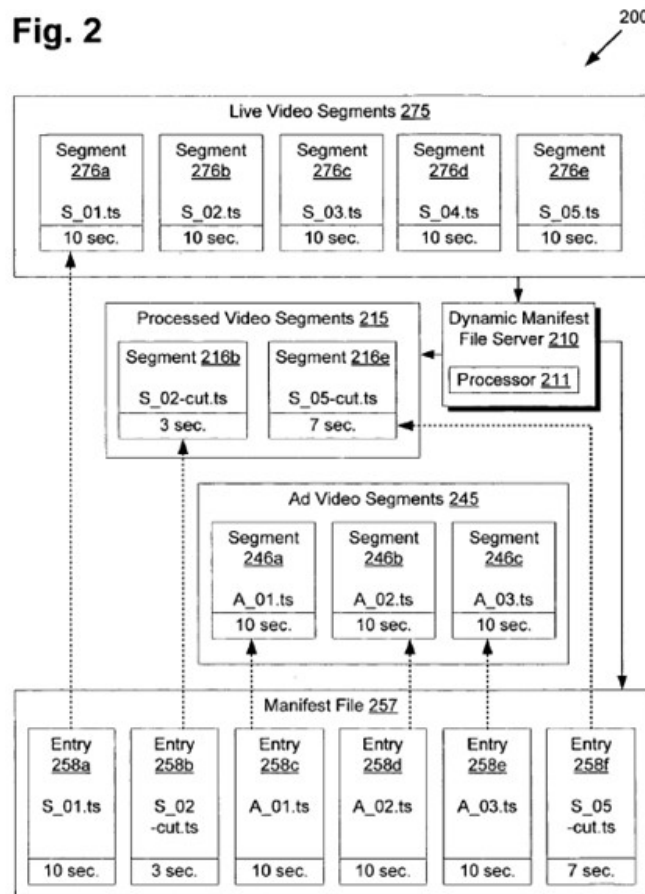
- d. **Element 13[c]: including, in either or both of the first manifest and the second manifest, information for streaming one or more segments of the at least one other media source at the at least one point during the playback of the requested media source.**

Lewis or Lewis-Barracough teaches Element 13[c]. Ex-1002 ¶144.

Lewis teaches including in the manifest, information for streaming the advertising segments at the at least one point during the playback of the live video segments. As shown in Figure 2 below, “[a]ssuming a rule specifying ***commercial insertion at thirteen seconds for ad video segments 245 running at thirty seconds***, [processed video] segments 216b and 216e” may be “created from [live video]

segments 276b and 276e, respectively.” Ex-1005, 5:2-5, Fig. 2. Specifically, “segment 216b may comprise the first three seconds of [live video] segment 276b, and segment 216e may comprise the last seven seconds of [live video] segment 276e ... allowing advertisement or other content insertion at any desired playback offset or position without dead time.” Ex-1005, 5:5-11. In Figure 2’s example, dynamic manifest file server 210 thus generates “manifest file 257, with entry 258a referencing original [live video] segment 276a, entry 258b referencing processed segment 216b, entries 258c through 258e referencing [ad video] segments 246a through 246c respectively, and entry 258f referencing processed segment 216e.” Ex-1005, 5:16-21. Entries 258a through 258f are therefore “played back successively without gaps by a media player application,” resulting in “an advertisement smoothly integrated into a live stream with no interruptions or dead time.” Ex-1005, 5:21-24. The manifest file “may be provided as a M3U8 file, and each of the referenced [live and ad] video segments may comprise a MPEG-2 transport stream (.TS) file,” such that “media player application 156 can download the referenced segments” and output them “to display 160 for viewing by user 185.” Ex-1005, 9:46-62. Lewis’s manifest thus includes information for streaming the advertising segments at the at least one point during the playback of the live video segments. Ex-1002 ¶¶145-147.

Fig. 2



B. Grounds 3-4: Claims 14-15 are obvious over Lewis and Jain or Lewis-Barracrough and Jain.

- 1. A POSITA would have been motivated to combine Lewis's or Lewis-Barracrough's teachings with Jain's teachings and would have had a reasonable expectation of success.**

A POSITA would have been motivated to combine the teachings of Lewis and Jain or Lewis-Barracrough and Jain and had a reasonable expectation of success in doing so because each relates to methods for streaming media content in response to a request and the control/signaling of time-based events during playback. *See* Section XII.A.1; Ex-1008 ¶¶22, 53, 59; Ex-1002 ¶148.

Lewis teaches that “producer 180 may provide a rule to rule resolution server 120 specifying a time block to ***switch to a commercial***, such as ***thirteen (13) seconds into the live broadcast***.” Ex-1005, 4:52-55. Moreover, Lewis teaches that “if any of the rules require the insertion of content ***at a time offset starting or ending within a video segment***, then a cutting or cropping processing procedure may be carried out ... so that the generated manifest file can insert the content at any playback offset.” Ex-1005, 8:65-9:3. Lewis leaves the implementation details for how to indicate that an advertisement will be played or that a certain point has been reached in playback of the requested media source in the manifest file to a POSITA. Ex-1002 ¶¶149-150.

Jain teaches “a combination of audio beaconing and audio matching and its application to track a video on a content site, such as Hulu.com.” Ex-1008 ¶32. As shown in Figure 2 below, Jain teaches activities 201, which “shows actions taken in user system 150 where a video is loaded in the user device 130, and played.” Ex-1008 ¶32. “At the 5 minute mark (301 sec.), ***a 15 second advertisement is served***” and at the end “of the advertisement (316 sec.), the video continues to play until its conclusion (600 sec.).” Ex-1008 ¶32. Jain also teaches “additional beacon events” 203, where “additional data may be transmitted in the beacon to include URLs and video ID’s when a video is loaded and played.” Ex-1008 ¶33. Jain teaches that “[a]s the advertisement is served, an event beacon, which may include advertisement URL data, is transmitted.” Ex-1008 ¶33. Jain also teaches that the beacon “transmits a

timestamp” and “[a]t the conclusion of the video, *a video end beacon is transmitted to indicate the user/panelist is no longer viewing specific media.*” Ex-1008 ¶33.

200	Time →	0-3 sec		4 sec ----- 180 ----- 300 sec		301-315 sec		316—599 sec		600 sec			
201	Activities→	Video Loaded		Video Played				Ad served		Video continues		Video End	
202	Audio Beacon detected by portable device →	Continuous Audio representing the website (e.g., Hulu.com)											
203	Additional beacon events →	URLs (Hulu.com & Video ID)					AD Event Beacon (co- relation URL)				Video End Beacon		
204	Audio matching events detected by portable device →		Audio Signature Sample 1	Audio Signature Sample 2	Audio Signature Sample 3 (Content Match Achieved)	Same Signature Sample 4 (No Change)	Audio Signature Sample 5 (Different Content couldn't match)	Audio Signature Sample 5 (Same Video again)	No Signature (But Can't assume video is completed)				
205	Overlay portable device data	X			X		X	X	X				
206	End- User Experience	URL of site where the video was played			Content Matched		Ad Served		Video Played till the End				

FIG. 2

A POSITA would have been motivated to indicate in Lewis’s manifest file that an advertisement will be played or that a certain point has been reached in playback of the requested media source, using a beaconing URL, as taught by Jain, because beacons were a well-known and cost-effective customer engagement tool for signaling or tracking the playback of an advertisement or requested media source. Ex-1002 ¶151. Using beacons in a media stream are particularly beneficial for advertising because they allow businesses to target consumers nearby in real-time and create hyper-personalized experiences based on the data from the beacons. Ex-1002 ¶151. Additionally, given that Lewis already teaches that the manifest file

comprises URLs (*see, e.g.*, Ex-1005, 7:31-35), it would have been obvious to implement a beacon for signaling or tracking the playback of an advertisement or requested media source in the form of a URL in Lewis's manifest, as taught by Jain. Ex-1002 ¶¶151-161 (describing additional motivations to combine). In the Lewis-Jain (Ground 3) or Lewis-Barracough-Jain (Ground 4) combination, Lewis's first and/or second manifest would include a beaconing URL which, when used, indicates playback of an advertisement or that a certain point has been reached in playback of the requested media source, such as the start or end of the video, as taught by Jain. Ex-1002 ¶152.

A POSITA would have had a reasonable expectation of success in combining the teachings of Lewis or Lewis-Barracough and Jain. Ex-1002 ¶162. All three describe methods for streaming media content. *See* Section XII.A.1; Ex-1008 ¶¶22, 53, 59; Ex-1002 ¶162. Additionally, both Lewis and Jain teach methods for inserting advertisements into a media stream. Ex-1005, 8:52-56; Ex-1008 ¶¶32-33. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶162.

2. Dependent Claims 14-15

- a. Claim 14: The method of streaming media via the data communications network as recited in claim 13, wherein either or both of the first manifest and the second manifest include at least one beaconing URL which, when used, is indicative of playback of at least one advertisement.**

Lewis and Jain (“Lewis-Jain”) or Lewis-Barracough and Jain (“Lewis-Barracough-Jain”) teaches Claim 14. Ex-1002 ¶163.

As explained in Section XII.A.3, Lewis teaches that “producer 180 may provide a rule to rule resolution server 120 specifying a time block to *switch to a commercial*, such as *thirteen (13) seconds into the live broadcast*.” Ex-1005, 4:52-55. Moreover, producer 180 generates “insertion rules in real-time ... allowing the dynamic insertion of advertisement time blocks or other content while a live event is in progress.” Ex-1005, 8:57-60. Lewis leaves the implementation details for how to indicate that an advertisement will be played in the manifest file to a POSITA. Ex-1002 ¶164. It would have been an obvious design choice to use a beaconing URL to indicate playback of the advertisement, as taught by Jain. Ex-1002 ¶¶164-165.⁶

As shown in Figure 2 below, Jain teaches that timeline 200 shows “a scenario

⁶ The term “beaconing URL” only appears in the claims of the ’639 Patent. The patent states that “[a]dvertising breaks can be determined by the media provider(s) 130 and indicated by ‘cue tones,’ which are analog or digital signals which indicate in a first form that a break is about to begin” and “in a second form that the break is about to end.” Ex-1001, 9:63-67.

where a user/panelist plays a ten minute video on Hulu.com.” Ex-1008 ¶32. Activities 201 shows actions taken by the “user system 150 where a video is loaded in the user device 130, and played,” “[a]t the 5 minute mark (301 sec.), a 15 second advertisement is served,” and at the end “of the advertisement (316 sec.), the video continues to play until its conclusion (600 sec.)” Ex-1008 ¶32. Jain also teaches “additional beacon events” 203, where “additional data may be transmitted in the beacon to include URLs and video ID’s when a video is loaded and played.” Ex-1008 ¶33, Fig. 2 (yellow). Jain teaches that “[a]s the advertisement is served, an event beacon, which may include advertisement URL data, is transmitted.” Ex-1008 ¶33.

200	Time →	0-3 sec	4 sec ----- 180 ----- 300 sec				301-315 sec	316—599 sec	600 sec
201	Activities→	Video Loaded	Video Played				Ad served	Video continues	Video End
202	Audio Beacon detected by portable device →	Continuous Audio representing the website (e.g., Hulu.com)							
203	Additional beacon events →	URLs (Hulu.com & Video ID)					AD Event Beacon (co-relation URL)		Video End Beacon
204	Audio matching events detected by portable device →		Audio Signature Sample 1	Audio Signature Sample 2	Audio Signature Sample 3 (Content Match Achieved)	Same Signature Sample 4 (No Change)	Audio Signature Sample 5 (Different Content couldn't match)	Audio Signature Sample 5 (Same Video again)	No Signature (But Can't assume video is completed)
205	Overlay portable device data	X			X		X	X	X
206	End- User Experience	URL of site where the video was played			Content Matched		Ad Served		Video Played till the End

FIG. 2

In the Lewis-Jain (Ground 3) or Lewis-Barracough-Jain (Ground 4)

combination, Lewis's first and/or second manifest would include a beaconing URL which, when used, indicates playback of an advertisement, as taught by Jain. Ex-1002 ¶¶166-167.

- b. **Claim 15: The method of streaming media via the data communications network as recited in claim 8, wherein either or both of the first manifest and the second manifest include at least one beaconing URL which, when used, is indicative of a certain point has been reached in playback of the requested media source.**

Lewis-Jain or Lewis-Barraclough-Jain teaches Claim 15. Ex-1002 ¶168.

Lewis teaches this claim for the reasons explained in Section XII.B.2.a. Additionally, Lewis teaches that “if any of the rules require the insertion of content *at a time offset starting or ending within a video segment*, then a cutting or cropping processing procedure may be carried out ... so that the generated manifest file can insert the content at any playback offset.” Ex-1005, 8:65-9:3. Lewis leaves the implementation details for how to indicate that a certain point has been reached in playback in the manifest file to a POSITA. Ex-1002 ¶169. It would have been an obvious design choice to use a beaconing URL for this purpose, as taught by Jain. Ex-1002 ¶¶169-170.

In addition to the teachings described in Section XII.B.2.a, Jain teaches that “video beacons can be embedded within an action script that will be running within the video Flash Player's run time environment on web page 110,” such that when

the page is accessed and the script is activated, the video beacon is triggered “which extracts and store[s] URL information on a server (e.g., content server 100), and launches the video Flash Player.” Ex-1008 ¶26. When the beacon is triggered, it accesses AM server 120 “to load a pre-recorded audio file containing a special embedded compatible code (e.g., CBET),” which is “utilized for beacon 131 *to transmit for a given period of time (e.g., every x seconds).*” Ex-1008 ¶26. Jain further teaches that “[t]he web activity monitoring application collects web activities data from the user device 130” including “*start and end timestamp* and any additional metadata about videosite information, URL information, time, etc.” Ex-1008 ¶29. Moreover, Jain teaches that the “beacon also transmits a *timestamp*” and “[a]t the conclusion of the video, *a video end beacon is transmitted to indicate the user/panelist is no longer viewing specific media.*” Ex-1008 ¶33; *see also id.*, ¶¶20, 23, Fig. 2 (yellow).

200	Time →	0-3 sec	4 sec 180 300 sec				301-315 sec	316—599 sec	600 sec
201	Activities→	Video Loaded	Video Played				Ad served	Video continues	Video End
202	Audio Beacon detected by portable device →	Continuous Audio representing the website (e.g., Hulu.com)							
203	Additional beacon events →	URLs (Hulu.com & Video ID)					AD Event Beacon (co-relation URL)		Video End Beacon
204	Audio matching events detected by portable device →		Audio Signature Sample 1	Audio Signature Sample 2	Audio Signature Sample 3 (Content Match Achieved)	Same Signature Sample 4 (No Change)	Audio Signature Sample 5 (Different Content couldn't match)	Audio Signature Sample 5 (Same Video again)	No Signature (But Can't assume video is completed)
205	Overlay portable device data	X			X		X	X	X
206	End- User Experience	URL of site where the video was played			Content Matched		Ad Served		Video Played till the End

FIG. 2

In the Lewis-Jain (Ground 3) or Lewis-Barracough-Jain (Ground 4) combination, Lewis's first and/or second manifest would include a beaconing URL which, when used, indicates that a certain point has been reached in playback of the requested media source, such as the start or end of the video, as taught by Jain. Ex-1002 ¶¶171-172.

C. Grounds 5-6: Claim 8 is obvious over Pyle alone or Pyle and Barracough.

- 1. A POSITA would have been motivated to combine Pyle's teachings with Barracough's teachings and would have had a reasonable expectation of success.**

A POSITA would have been motivated to combine the teachings of Pyle and Barracough and had a reasonable expectation of success in doing so because each relates to methods for streaming media content in response to a request based on, for

example, characteristics and/or capabilities of the requesting device. *See* Section XII.A.1; Ex-1006, 10:22-56; Ex-1002 ¶173.

Pyle teaches that if the requested content is a movie, a requesting device can be, for example, “*a HD television* with very large form factor” (Ex-1006, 10:27-33) or “*a smart phone* with a more modest form factor and resolution support.” Ex-1006, 10:33-39, 10:53-56. A “composition component” examines data included in the request and determines “a suitable or optimal manifest” to “select and transmit ... to the requesting device.” Ex-1006, 10:53-56. Pyle further teaches that “individual manifests 204 can be optimized for ... *client preferences*.” Ex-1006, 8:23-27. A POSITA would have understood that Pyle determines the identity of the client because Pyle customizes the manifest to the particular user’s preferences. Ex-1002 ¶174. A POSITA would also have understood that Pyle determines the first device type (i.e., HD television) and second device type (i.e., smartphone) based on the identity of the first and second client, respectively, because Pyle teaches that the particular representation is selected based upon the “*capabilities, limitations, or a current state of the presentation device ... as well as settings or preferences input by users* of the presentation device.” Ex-1006, 11:63-12:3; Ex-1002 ¶¶174-175.

In addition to the teachings described in Section XII.A.1, Barraclough teaches that the user “provides authentication information, such as the user name and

password ... and in response the host *authenticates the user as an authorized user*, and facilitates media playlist access.” Ex-1007, 7:56-62.

Thus, in view of both Pyle and Barraclough, a POSITA would have been motivated to determine the device type based on the client identity. For example, Pyle’s method teaches to use device classification based on the identity of the device, and Barraclough teaches complementary information stored for the particular user of a particular device. *See* Section XII.A.1. Barraclough furthers Pyle’s goal of optimizing manifests based on “a particular setting or reference or a particular set of settings or preferences” of the user. Ex-1006, 10:65-11:9; Ex-1002 ¶176. Additionally, both references address the same core problem, offer complementary solutions, and the combination provides a predictable benefit—device and bandwidth targeting for the reasons described in Section XII.A.1. Ex-1002 ¶¶176-183 (describing additional motivations to combine). In the Pyle-Barraclough combination, Pyle’s components determine the device type based on data stored for the particular client, as taught by Barraclough. Ex-1002 ¶176.

A POSITA would have had a reasonable expectation of success in combining the teachings of Pyle and Barraclough. Ex-1002 ¶184. Both describe methods for streaming media content in response to a request in a similar manner such as by storing the media content in different formats corresponding to different device types and selecting a suitable format based on the requesting device type. *See* Section

XII.A.1; Ex-1006, 10:22-56; Ex-1002 ¶¶184-185. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶¶184-185.

2. Independent Claim 8

a. Element 8 ``` : ```

Pyle or Pyle and Barraclough (“Pyle-Barraclough”) teaches the preamble. Ex-1002 ¶¶186-187.

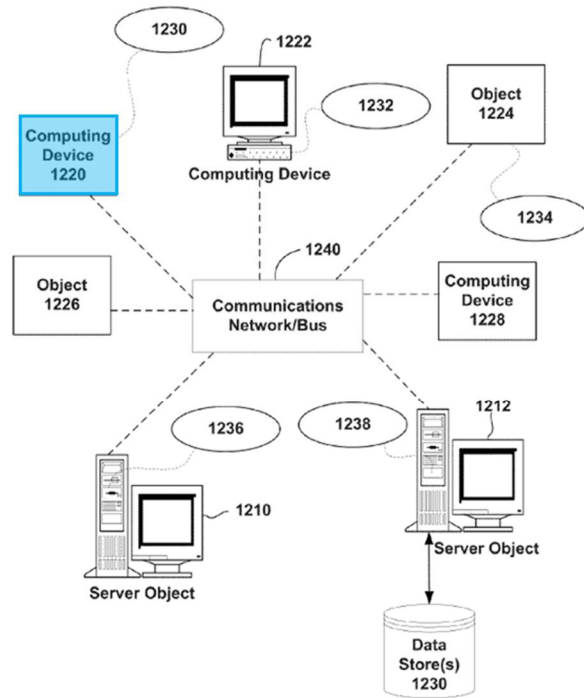
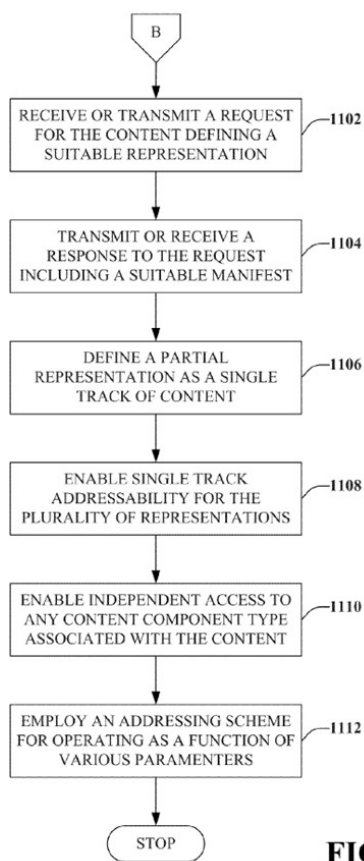
Pyle teaches “dynamic composition of media for streaming to consuming devices.” Ex-1006, 1:14-15. Pyle also teaches “a network environment in which the communications network/bus 1240 is the Internet” and “the computing objects 1210, 1212, etc. can be Web servers with which the client computing objects or devices 1220, 1222, 1224, 1226, 1228, etc. communicate via any of a number of known protocols, such as the hypertext transfer protocol (HTTP).” Ex-1006, 34:47-55.

b. Element 8[a]:

Pyle or Pyle-Barraclough teaches Element 8[a]. Ex-1002 ¶188.

Pyle teaches receiving a URL in a first request from a first client that indicates a requested media source. Specifically, Pyle teaches a method for “facilitating HTTP delivery of streaming content” (Ex-1006, 32:43-45), which allows “multiple clients to take advantage of the information-gathering capabilities of the server.” Ex-1006,

34:41-43, Figs. 11-12. Pyle teaches “***computing objects or devices 1220, ... 1228, etc.***” which “***can be thought of as clients.***” Ex-1006. 34:21-22. Moreover, Pyle teaches that “a request for the content can be transmitted (e.g., by a client) or received (e.g., by a server),” which includes “a set of characteristics or attributes defining a suitable representation of the content.” Ex-1006, 32:45-49. Pyle further teaches that Media Presentation Description (“MPD”) “information is constantly updated for the client to formulate the correct uniform resource locator (URL) to obtain the latest segment of content” such that “***the client can formulate time-based segment request URLs.***” Ex-1006, 5:4-7, 5:21-22. The URLs specify or describe the “***locations***” of the content “included in one or more manifest 204” (Ex-1006, 11:33-36) and are “determined as a function of,” for example, “***an attribute associated with the content***” or a time associated with “***a particular content segment.***” Ex-1006, Cl. 12. The request URL received from a first client (e.g., computing device 1220 (Fig. 12, blue)) corresponds to the recited “URL in a first request from a first client.” Ex-1002 ¶¶189-191.



c. Element 8[b]:

Pyle or Pyle-Barracough teaches Element 8[b]. Ex-1002 ¶192.

Ground 5: Pyle teaches determining the identity of the first client. As shown in Figure 12 below, Pyle teaches that “*computing objects or devices 1220 ... can be thought of as clients*” and that servers 1210/1212 “provide data services, such as *receiving data from client computing objects or devices 1220*, ... storing of data, processing of data, *transmitting data to client computing objects or devices 1220*.” Ex-1006, 34:20-34, Fig. 12 (blue). Pyle further teaches that “individual manifests 204 can be optimized for ... *client preferences*.” Ex-1006, 8:23-27; *see also id.*,

11:63-12:3 (“particular representation 508 can be a more suitable representation based upon ... *preferences input by users of the presentation device*”). A POSITA would thus have understood that Pyle determines the identity of the first client during generation of the manifest because Pyle customizes the manifest to the particular user/client preferences. Ex-1002 ¶193. While Pyle leaves the details for *how* to determine the user/client’s identity to a POSITA, this action would have been understood by a POSITA because associating unique identities, such as IP address, with a client was a standard computing feature at the time. Ex-1002 ¶¶193-194. This feature is also expressly taught by Barraclough.

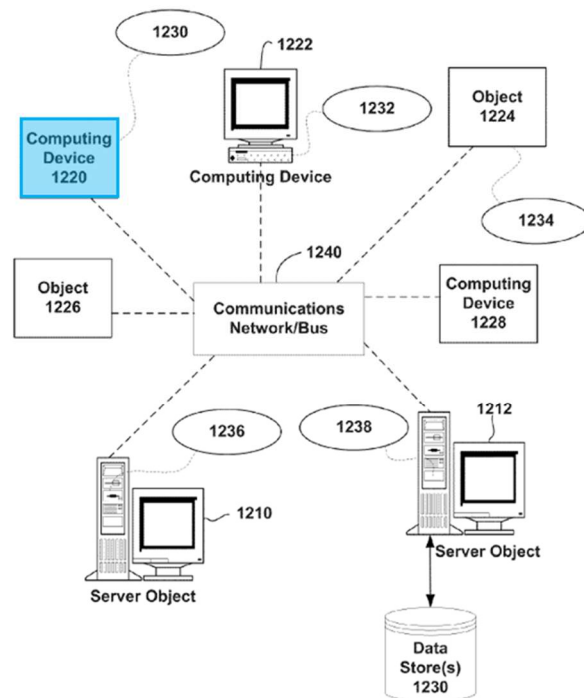


FIG. 12

Ground 6: Barraclough teaches determining the first client identity by authenticating the user on the server. Barraclough teaches that “[w]hen the registered user ... wishes to access a playlist at a remote playback device, the user accesses a web page hosted by the host server” using “a hand-held wireless telephone-type device.” Ex-1007, 7:52-56. The user then “*provides authentication information*, such as the user name and password ... and in response *the host authenticates the user as an authorized user*, and facilitates media playlist access.” Ex-1007, 7:56-62. Host server 320 then “serves the populated content to *authorized users* at remote packet-based devices.” Ex-1007, 16:20-22.

In the Pyle-Barraclough combination, Pyle’s method determines the first client identity by authenticating the user on the server, as taught by Barraclough. A POSITA would have been motivated to combine Pyle-Barraclough and had a reasonable expectation of success in doing so for the reasons described in Section XII.C.1. Ex-1002 ¶¶195-196.

d. Element 8[c]:

Pyle or Pyle-Barraclough teaches Element 8[c]. Ex-1002 ¶197.

Ground 5: Pyle teaches determining the first device type based on the first client’s identity. Pyle teaches that the client request includes device-specific details. Specifically, “[*r*]equest 606 can include a request for specific content 206, as well as all or a portion of *local configuration 602*,” which is used to determine “a suitable

representation (e.g., particular representation 508) of content 206.” Ex-1006, 12:19-23. Moreover, selection component 502 determines “selected manifest 504 ***based upon local configuration 602***,” which relates “to at least one of ***device or network configuration, device or network state, device or network settings or preferences***, an indication of options, ***features***, or ***attributes*** in connection with content 206.” Ex-1006, 12:10-17, Fig. 6. For example, if the content is a movie, “[t]he requesting device (not shown) can be, e.g., a ***HD television*** with very large form factor.” Ex-1006, 10:27-33. A “composition component” examines data included in the client’s request and determines “a suitable or optimal manifest” to “select and transmit ... to the requesting device.” Ex-1006, 10:53-56. The selection component is a “client-side selection” and the composition component is a “server-side selection.” Ex-1006, 12:32-36. Both may be used together to select the appropriate manifest based upon local configuration 602. Ex-1006, 12:32-40. A HD television corresponds to the recited “first device type.” Ex-1002 ¶198. Pyle thus determines the first device type (i.e., HD television) based on the identity of the first client because, for example, a “client-side selection” component is used, which considers the device’s “local configuration.” Ex-1006, 12:32-36; *see also id.*, Ex-1006, 11:63-12:3 (manifest is selected based upon the “***capabilities, limitations, or a current state of the presentation device ... as well as settings or preferences input by users***”); Ex-1002

¶198. To the extent PO argues that Pyle’s device type determination is not based on the client’s identity, this feature is further taught by Barraclough. Ex-1002 ¶198.

Ground 6: Barraclough teaches determining a first device type based on the first client’s identity for the reasons described in Section XII.A.2.d, namely, because Barraclough’s device type classification is specifically based on the identify of a particular user that requested the media. In the Pyle-Barraclough combination, Pyle’s selection and composition components determine the device type (i.e., HD television) based on the particular client (i.e., computing device 1220), as taught both by Pyle’s receipt of user input/preferences and Barraclough’s “particular user” data storage. Ex-1002 ¶¶199-200.

e. Element 8[d]:

Pyle or Pyle-Barraclough teaches Element 8[d]. Ex-1002 ¶201.

(1) Generating first manifest based on determination of first device type

Pyle teaches selection component 502, a client-side component, which determines a “selected manifest 504 based upon local configuration 602.” Ex-1006, 12:11-17. Moreover, Pyles teaches that composition component 210, a server-side component, “facilitate[s] composition of new manifest 422, which can be stored amongst other manifests 204.” Ex-1006, 10:57-60. For example, “[t]he requesting device (not shown) can be, e.g., a HD television with very large form factor.” Ex-1006, 10:27-33. A “composition component” examines data in the request and

determines “a suitable or optimal manifest” to “select and transmit ... to the requesting device.” Ex-1006, 10:53-56; *see also id.*, 12:32-36 (selection and composition components are used together to select an appropriate manifest). Pyle uses a processor to generate the manifest file based on the first device type. Ex-1006, 37:5-8, Cls. 1, 13 (“***processor-executable components***: a selection component that *receives a selected manifest* ... each manifest *associated with a particular configuration*”). The manifest composed for the first device type (i.e., HD television) corresponds to the recited “first manifest.” Ex-1002 ¶¶202-203.

(2) Manifest has information for streaming requested media source segments

Pyle’s system facilitates HTTP “delivery of streaming media” by using a manifest component that maintains “multiple manifests 204₁-204_N for a single item of content 206 ... suitable for delivery to or presentation at endpoints of a streaming network.” Ex-1006, 7:45-53. Pyle teaches that “content 206 can be associated with various representations 208₁-208_M of that content 206, such as, e.g., different representations based upon different bitrates, resolutions ... or substantially any other suitable attribute.” Ex-1006, 7:53-58; *see also id.*, 8:17-27 (“individual manifests 204 can be optimized for particular delivery formats, wire formats, endpoint profiles or configurations, client preferences”). Pyle also teaches a communications component that retrieves a particular representation of the content

“according to a streaming protocol based upon information included in” the selected manifest. Ex-1006, 11:60-63; Ex-1002 ¶204.

(3) First chunking protocol

Pyle teaches that the first manifest has information for streaming the requested media source segments in accordance with a first chunking protocol. Pyle teaches that a “chunk” is a “contiguous set of samples for one track.” Ex-1006, 6:17. Pyle further teaches that the manifest describes “the locations of various content segments, which can appear to a presentation device as a large set of small-interval content files, say 5 seconds or so.” Ex-1006, 8:17-20. Additionally, Pyle teaches that “[e]vent information can also be delivered in ... Smooth Streaming Transport Protocol (SSTP).” Ex-1006, 2:65-67; *see also id.*, 3:63-65. SSTP was a well-known “chunking protocol” implemented by Microsoft by 2010. Ex-1002 ¶205 (citing, e.g., Ex-1043, 62). The SSTP chunking protocol, similar to the HLS chunking protocol (*see* Section XII.A.2.j), breaks video into small fragments (typically 2-4 seconds), and the client player downloads a manifest file that tells it which fragments to request. Ex-1002 ¶205.

Pyle’s SSTP chunking protocol, when applied to the first manifest generated based on the determination of the first device type (i.e., HD television), correspond to the recited “first chunking protocol.” Ex-1002 ¶206. Pyle thus teaches the “chunking protocol” limitation under either parties’ construction because it teaches

both a “protocol that dynamically creates segments of media based on a [user’s] request” and a pre-determined protocol that allows data to be sent in a series of smaller, manageable pieces. Ex-1002 ¶¶206-208.

f. Element 8[e]:

Pyle or Pyle-Barraclough teaches Element 8[e]. Ex-1002 ¶¶209-211.

Pyle teaches that “*a response to the [client’s] request can be transmitted,*” which includes “*a suitable manifest* associated with the suitable representation of the content.” Ex-1006, 32:43-53.

g. Element 8[f]:

Pyle or Pyle-Barraclough teaches Element 8[f] for the reasons described in Section XII.C.2.b. Ex-1002 ¶212. Specifically, Pyle teaches “*computing objects or devices ... 1228*” which “*can be thought of as clients.*” Ex-1006, 34:21-22, Fig. 12 (green). Moreover, Pyle teaches that “a request for the content can be transmitted (e.g., by a client) or received (e.g., by a server),” which includes “a set of characteristics or attributes defining a suitable representation of the content.” Ex-1006, 32:45-49. The client request includes a URL. Ex-1006, 5:21-22, 11:33-36, Cl. 12; *see also id.*, 10:40-41. The URL request received from a second client (e.g., computing device 1228) corresponds to the recited “URL in a second request from a second client.” Ex-1002 ¶¶212-214.

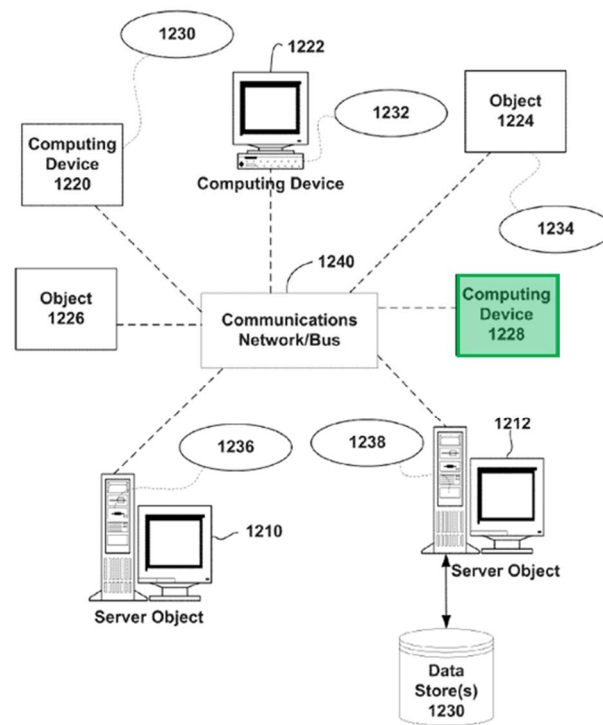


FIG. 12

h. Element 8[g]:

Pyle or Pyle-Barracough teaches Element 8[g]. Ex-1002 ¶215.

Ground 5: As explained in Section XII.C.2.c, Pyle teaches that “individual manifests 204 can be optimized for ... *client preferences*.” Ex-1006, 8:23-27; *see also id.*, 11:63-12:3 (“particular representation 508 can be ... based upon ... *preferences input by users of the presentation device*”). A POSITA would thus have understood that Pyle determines the second client’s identity (i.e., computing device 1228 (green)), which is different from the first client’s identity, during generation of the manifest because Pyle customizes the manifest to the particular user/client’s preferences. Ex-1006, Fig. 12; Ex-1002 ¶216. While Pyle leaves the details for *how*

to determine the user/client's identity to a POSITA, this action would have been understood by a POSITA because associating unique identities, such as IP address, with a client was a standard computing feature at the time. Ex-1002 ¶216. This feature is also expressly taught by Barraclough.

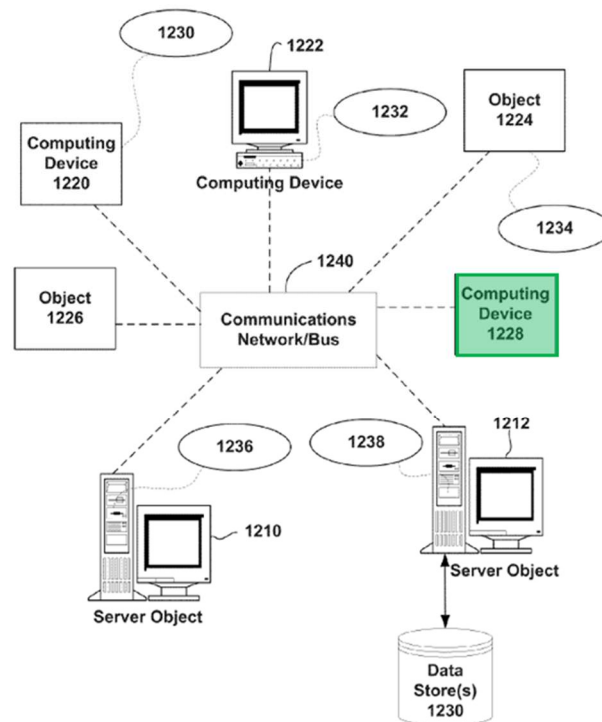


FIG. 12

Ground 6: Barraclough teaches this limitation for the reasons described in Section XII.C.2.c. Ex-1007, 7:56-62.

In the Pyle-Barraclough combination, Pyle's method determines an identity of the second client by authenticating the user on the server, as taught by Barraclough. Ex-1002 ¶¶217-219.

i. Element 8[h]:

Pyle or Pyle-Barraclough teaches Element 8[h]. Ex-1002 ¶220.

Ground 5: As explained in Section XII.C.2.d, Pyle teaches that the client request includes device-specific details, including local configuration information. Ex-1006, 12:19-23. Moreover, selection component 502 determines “selected manifest 504 *based upon local configuration 602*,” which relates “to at least one of *device or network configuration, device or network state, device or network settings or preferences*, an indication of options, *features*, or *attributes* in connection with content 206.” Ex-1006, 12:10-17, Fig. 6. For example, if the content is a movie, “the requesting device can be *a smart phone* with a more modest form factor and resolution support.” Ex-1006, 10:33-39, 10:53-56. A smartphone corresponds to the recited “second device type.” Ex-1002 ¶221. A “composition component” examines data included in the client’s request and determines “a suitable or optimal manifest” to “select and transmit ... to the requesting device.” Ex-1006, 10:53-56. The selection component is a “client-side selection” and the composition component is a “server-side selection.” Ex-1006, 12:32-36. Both may be used together to select the appropriate manifest based upon local configuration 602. Ex-1006, 12:32-40. Pyle thus determines the second device type (i.e., smart phone) based on the second client identity because, for example, a “client-side selection” component is used, which considers the device’s “local configuration.”

Ex-1006, 12:32-36; *see also id.*, 11:63-12:3; Ex-1002 ¶221. To the extent PO argues that Pyle’s device type determination is not based on the client’s identity, this feature is further taught by Barraclough. Ex-1002 ¶221.

Ground 6: Barraclough teaches determining a second device type based on the identity of the second client for the reasons described in Section XII.A.2.i. In the Pyle-Barraclough combination, Pyle’s selection and composition components determine the device type (i.e., smartphone) based on the particular client (i.e., computing device 1228), as taught both by Pyle’s receipt of user input/preferences and Barraclough’s “particular user” data storage . Ex-1002 ¶¶222-223.

j. Element 8[i]:

Pyle or Pyle-Barraclough teaches Element 8[i] for the reasons described in Section XII.C.2.e. Ex-1002 ¶224.

(1) Generating second manifest based on determination of second device type, wherein content of second manifest is different from content of first manifest

Pyle teaches selection component 502, a client-side component, which determines a “selected manifest 504 based upon local configuration 602.” Ex-1006, 12:11-17. Moreover, Pyle teaches that composition component 210, a server-side component, “facilitate[s] composition of new manifest 422.” Ex-1006, 10:57-60. For example, “the requesting device can be *a smart phone* with a more modest form factor and resolution support.” Ex-1006, 10:33-39. A “composition component”

examines data in the request and determines “a suitable or optimal manifest” to “select and transmit ... to the requesting device.” Ex-1006, 10:53-56; *see also id.*, 12:32-36 (selection and composition components are used together to select an appropriate manifest), 37:5-8, Cls. 1, 13 (processor-executable components receive selected manifest). The manifest composed for the second device type (i.e., smartphone) corresponds to the recited “second manifest,” which has different content from that of the first manifest generated for a HD television. Ex-1002 ¶225.

(2) Manifest has information for streaming requested media source segments

Pyle’s communications component retrieves a particular representation of the content “according to a streaming protocol based upon information included in” the selected manifest. Ex-1006, 11:60-63; Ex-1002 ¶226.

(3) Second chunking protocol

Pyle teaches that its second manifest has information for streaming the requested media source segments in accordance with a second chunking protocol for the reasons described in Section XII.C.2.e. Specifically, Pyle teaches using Microsoft’s well-known SSTP chunking protocol. Ex-1006, 2:65-67, 3:63-65.

Pyle’s SSTP chunking protocol, when applied to the second manifest generated based on the determination of the second device type (i.e., smartphone), corresponds to the recited “second chunking protocol.” Ex-1002 ¶227. Moreover, as

explained in Section XII.C.2.e, Pyle teaches the “chunking protocol” limitation under either parties’ construction. Ex-1002 ¶227.

To the extent PO argues that the second chunking protocol has to be different than the first chunking protocol, which is not a requirement of the claims, Pyle also teaches enabling “flexible selection between multiple wire formats for compatibility with more devices (e.g., some devices are limited to MPEG-2 Transport Streams, MP4 multiplex files, or protected interoperable file format (PIFF) Fragmented international organization for standardization (ISO), Base Media files, and so on).” Ex-1006, 2:52-57; *see also id.*, 5:8-10 (describing 3GPP live streaming method), 5:23-26 (describing HTTP Adaptive Streaming). A “wire format” is the binary format or structure that the streaming protocol uses to send video chunks, metadata, and timing information between the client and server. Ex-1002 ¶228. Any of these streaming protocols, when applied to the second manifest generated based on the determination of the second device type (i.e., smartphone), would correspond to the recited “second chunking protocol.” Ex-1002 ¶¶228-230.

k. Element 8[j]:

Pyle or Pyle-Barraclough teaches Element 8[j] for the reasons described in Section XII.C.2.f. Ex-1006, 32:43-53 (“*a response to the request can be transmitted,*” which includes “*a suitable manifest* associated with the suitable representation of the content”); Ex-1002 ¶¶231-233.

Thus, Pyle or Pyle-Barraclough renders obvious Claim 8.

D. Grounds 7-8: Claims 13-15 are obvious over Pyle and Jain or Pyle-Barraclough and Jain.

- 1. A POSITA would have been motivated to combine Pyle’s or Pyle-Barraclough’s teachings with Jain’s teachings and would have had a reasonable expectation of success.**

A POSITA would have been motivated to combine the teachings of Pyle and Jain or Pyle-Barraclough and Jain and had a reasonable expectation of success in doing so because each relates to methods for streaming media content in response to a request. *See* Sections XII.B.1 and XII.C.1; Ex-1002 ¶234.

Pyle teaches that “manifests 204 can be described based upon a set of attributes associated with one or more representation 208 and/or content 206.” Ex-1006, 8:33-35. An exemplary attribute includes “*free version with no encryption but with advertisements*.” Ex-1006, 8:55-67. Pyle further teaches that a URL included in manifest 204 “can be determined as a function of at least one of *a track set 404 (e.g., the next contiguous track set), an attribute associated with the content 206*, a particular content segment, or *a particular track (e.g., attribute naming convention), or a time associated with content 206*, a particular content segment, or a particular track.” Ex-1006, 11:35-47. Thus, a POSITA would have understood that Pyle’s first and/or second manifest includes a URL which, when used, is indicative of playback of an advertisement and that a certain point has been reached in playback of the requested media source. Ex-1002 ¶235. Pyle leaves the implementation details

as to how the manifest indicates that advertisements are to be shown during playback to a POSITA. Ex-1002 ¶235. While Pyle does not use the term “beaconing URL,” a POSITA would have understood that Pyle’s URL is used to signal or track playback of the advertisement or requested media content, which would meet the plain and ordinary meaning of this term (if it is not indefinite). Ex-1002 ¶¶235-236.

Jain teaches inserting advertisements into a media stream and beaconing URLs indicating playback of an advertisement and that a certain point has been reached in playback of the requested media source for the reasons described in Section XII.B.1.

A POSITA would have been motivated to indicate in Pyle’s manifest file that an advertisement will be played or that a certain point has been reached in playback of the requested media source, using a beaconing URL, as taught by Jain, for the same reasons described in Section XII.B.1. Ex-1002 ¶¶237-243 (describing additional motivations to combine). Moreover, given that Pyle already teaches that the manifest file comprises URLs, it would have been obvious to implement a beacon for signaling or tracking the playback of an advertisement or requested media source in the form of a URL in Pyle’s manifest, as taught by Jain. Ex-1002 ¶237. In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Pyle’s first and/or second manifest would include a beaconing URL which, when used, indicates playback of an advertisement or that a certain point has been reached in

playback of the requested media source, such as the start or end of the video, as taught by Jain. Ex-1002 ¶237.

A POSITA would have had a reasonable expectation of success in combining the teachings of Pyle or Pyle-Barracough and Jain. Ex-1002 ¶244. All three describe methods for streaming media content in response to a request. *See* Sections XII.B.1 and XII.C.1; Ex-1002 ¶244. Additionally, both Pyle and Jain teach inserting advertisements into a media stream. Ex-1006, 8:55-67; Ex-1008 ¶¶32-33. A POSITA would thus have understood that these references disclose interrelated teachings based on well-understood technologies that would have been amenable to various well-understood and predictable combinations. Ex-1002 ¶244.

2. Dependent Claims 13-15

a. Claim 13

(1) Element 13[pre]:

Pyle and Jain (“Pyle-Jain”) or Pyle-Barracough and Jain (“Pyle-Barracough-Jain”) teaches the preamble. *See* Section XII.C.2.a. Ex-1002 ¶245.

(2) Element 13[a]:

Pyle-Jain or Pyle-Barracough-Jain teaches Element 13[a]. Ex-1002 ¶246.

Pyle teaches receiving data regarding the requested media source at the client device. Pyle teaches that “*a request for the content* can be transmitted (e.g., by a client) or received (e.g., by a server)” and “a response to the request can be

transmitted or received,” which includes “*a suitable manifest associated with the suitable representation of the content.*” Ex-1006, 32:43-53. The manifest, which is received by the client device, includes the recited data received “regarding the requested media source.” Ex-1002 ¶247.

To the extent PO argues that the “receiving” step refers to data received *at the server* regarding the requested media source, this is also taught by Pyle. Pyle teaches that “request 606 can be transmitted to component composition 210” (i.e., a server-side component), which “select[s] a particular manifest 418 from the set of available manifests 204,” and transmits it to the client. Ex-1006, 10:22-25, 12:24-36; *see also id.*, 9:29-32 (manifest component 202 maintains “manifests 204 in data store 212,” which is a “repository of all or portions of data, data sets, or information,” and composition component 210 organizes “these manifests 204 based upon logic that resides in data store 212”). The manifests may also be received by the server components from content providers. Ex-1006, 10:63-65 (“a content provider can compose new manifest 422 specifically tailored to, e.g., track sets that receive the most requests, deliveries, and/or presentations”). Thus, Pyle’s server components receive data (i.e., the manifest) regarding the requested media source (i.e., requested content) from content providers via data store 212. Ex-1002 ¶248.

Pyle further teaches that data in the manifest includes information indicative of at least one point during playback of the requested media source at which at least

one other media source is to be shown. Pyle teaches that “manifests 204 can be described based upon a set of attributes associated with one or more representation 208 and/or content 206.” Ex-1006, 8:33-35. An exemplary attribute includes “***free version with no encryption but with advertisements***.” Ex-1006, 8:55-67. Data in the manifest received at the client device and/or by the server components from a content provider or the data store thus includes information indicative of at least one point during playback of the requested media source (i.e., content) at which the other media source (i.e., advertisement) is to be shown. Ex-1002 ¶249. Pyle leaves the implementation details as to how the manifest indicates when advertisements are to be shown during playback to a POSITA. Ex-1002 ¶249. These details are taught by Jain. *Id.*

As shown in Figure 2 below, Jain teaches “additional beacon events” 203, where “additional data may be transmitted in the beacon to include URLs and video ID’s when a video is loaded and played.” Ex-1008 ¶33, Fig. 2 (yellow). Jain teaches that “[a]s the advertisement is served, an event beacon, which may include advertisement URL data, is transmitted.” Ex-1008 ¶33; *see also id.*, ¶32 (“***[a]t the 5 minute mark (301 sec.), a 15 second advertisement is served,***” and at the end “of the advertisement (316 sec.), the video continues to play until its conclusion (600 sec.)”). Jain thus teaches indicating at least one point during playback of the

requested media source (i.e., video) at which the other media source (i.e., advertisements) is to be shown using a URL beacon. Ex-1002 ¶250.

In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Pyle's manifest includes information indicative of at least one point during playback of the requested media content at which an advertisement is to be shown using a URL beacon, as taught by Jain. Ex-1002 ¶251.

200	Time →	0-3 sec	4 sec ----- 180 ----- 300 sec				301-315 sec	316—599 sec	600 sec
201	Activities→	Video Loaded	Video Played				Ad served	Video continues	Video End
202	Audio Beacon detected by portable device →	Continuous Audio representing the website (e.g., Hulu.com)							
203	Additional beacon events →	URLs (Hulu.com & Video ID)					AD Event Beacon (co-relation URL)		Video End Beacon
204	Audio matching events detected by portable device →		Audio Signature Sample 1	Audio Signature Sample 2	Audio Signature Sample 3 (Content Match Achieved)	Same Signature Sample 4 (No Change)	Audio Signature Sample 5 (Different Content couldn't match)	Audio Signature Sample 5 (Same Video again)	No Signature (But Can't assume video is completed)
205	Overlay portable device data	X			X		X	X	X
206	End- User Experience	URL of site where the video was played			Content Matched		Ad Served		Video Played till the End

FIG. 2

(3) Element 13[b]:

Pyle-Jain or Pyle-Barracough-Jain teaches Element 13[b] for the reasons described in the previous section. Ex-1002 ¶252. Specifically, Pyle teaches receiving information regarding the other media source (i.e., advertisement) because the manifest received at the client device and/or the server components includes

attributes such as “free version ... *with advertisements*.” Ex-1006, 8:55-67. Moreover, Jain teaches providing timing information for switching to advertisements in a URL beacon. For example, Jain teaches that “[a]t the *5 minute mark (301 sec.)*, a *15 second advertisement is served*,” and at the end “of the advertisement (316 sec.), the video continues to play until its conclusion (600 sec.).” Ex-1008 ¶32. In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Jain’s timing information for switching to advertisements would be included in Pyle’s manifest, which corresponds to the recited “information” received “regarding the at least one other media source.” Ex-1002 ¶252.

(4) Element 13[c]:

Pyle-Jain or Pyle-Barracough-Jain teaches Element 13[c] for the reasons described in Section XII.D.2.a.2. Ex-1002 ¶253. Specifically, Pyle teaches including in the manifest, information for streaming the segments of the at least one other media source (i.e., advertisements) (Ex-1006, 8:55-67) and the Pyle-Jain or Pyle-Barracough-Jain combination teaches including timing information for streaming the advertisements at the at least one point during the playback of the requested media source (i.e., video). Jain teaches that “[a]t the *5 minute mark (301 sec.)*, a *15 second advertisement is served*,” and at the end “of the advertisement (316 sec.), the video continues to play until its conclusion (600 sec.).” Ex-1008 ¶32. In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Pyle’s first

and/or second manifest includes information for streaming an advertisement at the at least one point during playback of the requested media content, as taught by Jain. Ex-1002 ¶¶253-254.

b. Claim 14:

Pyle-Jain or Pyle-Barracough-Jain teaches Claim 14 for the reasons described in Section XII.D.2.a.4. Ex-1002 ¶255.

Pyle teaches that an exemplary attribute of a manifest includes “*free version ... with advertisements.*” Ex-1006, 8:55-67. Pyle further teaches that a URL included in manifest 204 “can be determined as a function of at least one of ... *an attribute associated with the content 206, a particular content segment, or a particular track (e.g., attribute naming convention),* or a time associated with content 206, a particular content segment, or a particular track.” Ex-1006, 11:35-47. Thus, a POSITA would have understood that Pyle’s first and/or second manifest includes a URL which, when used, is indicative of playback of at least one advertisement. Ex-1002 ¶256. While Pyle does not use the term “beaconing URL,” a POSITA would have understood that Pyle’s URL is used to signal or track playback of the advertisement, which would meet the plain and ordinary meaning of this term (if it is not indefinite). Ex-1002 ¶256.

Jain also teaches Claim 14 for the reasons described in Section XII.B.2.a. In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Pyle’s

first and/or second manifest would include a beaconing URL which, when used, indicates playback of an advertisement, as taught by Jain. Ex-1002 ¶¶257-258.

c. Claim 15:

Pyle-Jain or Pyle-Barracough-Jain teaches Claim 15. Ex-1002 ¶259.

Pyle teaches that “[t]ime based Requests can use time information in the video stream that is shared by all alternate tracks in order to push information utilized for the next universal resource locator (URL) requests for an entire Switch Group or Groups sharing a common timeline.” Ex-1006, 2:61-67. Pyle further teaches that a URL included in manifest 204 “can be determined as a function of at least one of *a track set 404 (e.g., the next contiguous track set)*, ... or *a time associated with content 206*, a particular content segment, or a particular track.” Ex-1006, 11:35-47. Thus, a POSITA would have understood that Pyle’s first and/or second manifest includes a URL which, when used, is indicative of a certain point has been reached in playback of the requested media source. Ex-1002 ¶260. While Pyle does not use the term “beaconing URL,” a POSITA would have understood that Pyle’s URL is used to signal or track playback of the requested media content, which would meet the plain and ordinary meaning of this term (if it is not indefinite). Ex-1002 ¶260.

Jain also teaches Claim 15 for the reasons described in Section XII.B.2.b. In the Pyle-Jain (Ground 7) or Pyle-Barracough-Jain (Ground 8) combination, Pyle’s first and/or second manifest would include a beaconing URL which, when used,

indicates that a certain point has been reached in playback of the requested media source, such as the start or end of the video, as taught by Jain. Ex-1002 ¶¶261-264.

XIII. CONCLUSION

Petitioner requests institution of IPR for Claims 8 and 13-15 of the '639 Patent based on each of the grounds in this Petition.

Respectfully Submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner certifies that this petition includes 13,911 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under §42.8, certificates of service, word count, and exhibits.

CERTIFICATE OF SERVICE (37 C.F.R. §42.6(e)(1))

The undersigned hereby certifies that the above document was served on November 5, 2025, by filing this document through the Patent Trial and Appeal Board P-TACTS System, as well as delivering a copy via express mail upon the following attorneys of record for the Patent Owner:

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