UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AYLO FREESITES LTD,
Petitioner
v.

DISH TECHNOLOGIES L.L.C.,
Patent Owner

U.S. Patent 9,407,564
Issue Date: August 2, 2016
Title: APPARATUS, SYSTEM, AND METHOD FOR ADAPTIVE-RATE SHIFTING OF STREAMING CONTENT

Inter Partes Review No. IPR2024-00047

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT 9,407,564 CHALLENGING CLAIMS 1-8, 10, AND 12-16 UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.1 *et seq.*

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PETITIONER'S EXHIBIT LIST

Table of Exhibits for U.S. Pat. 9,407,564 Petition for *Inter Partes* Review

Exhibit Number	Description
1001	U.S. Pat. 9,407,564 ("the '564 Patent")
1002	File History of U.S. Pat. 9,407,564
1003	Declaration of Dr. Henry Houh including Curriculum Vitae ("Houh")
1004	U.S. Patent No. 6,161,137 to Ogdon et al. ("Ogdon")
1005	<RESERVED>
1006	<RESERVED>
1007	U.S. Patent No. 6,848,004 to Chang ("Chang")
1008	WO1997044942 to Kliger ("Kliger")
1009	337-TA-1265 ITC Investigation Initial Determination
1010	337-TA-1265 ITC September 11, 2023 Enforcement Complaint
1011	<RESERVED>
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1013	U.S. Patent No. 6,637,031 to Chou ("Chou")
1014	<RESERVED>
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1016	U.S. Patent No. 7,529,806 to Shteyn ("Shteyn")

TABLE A: LISTING OF CLAIMS

Claim Designation	Claim Language
Claim 1	
1[Pre]	An end user station for adaptive-rate content streaming of digital content from a video server over a network, the end user station comprising:
1[A][1]	a media player operating on the end user station
1[A][2]	configured to stream a video from the video server via at least one transmission control protocol (TCP) connection over the network,
1[A][3]	wherein multiple different copies of the video encoded at different bit rates are stored on the video server as multiple sets of files,
1[A][4]	wherein each of the files yields a different portion of the video on playback,
1[A][5]	wherein the files across the different copies yield the same portions of the video on playback,
1[A][6]	and wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and wherein the media player streams the video by:
1[B]	requesting a plurality of sequential files of one of the copies from the video server based on the time indexes;
1[C][1]	automatically requesting from the video server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the media player to shift the playback quality to a higher or lower quality one of the different copies, the automatically requesting including
1[C][2]	repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the set of one or more factors relate to the performance of the network;
1[D]	making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time so that the media player upshifts to a higher quality one of the different copies when the factor is greater than a first threshold and

	downshifts to a lower quality one of the different copies when the factor is less than a second threshold; and
1[E]	presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time.
Claim 2	
[2]	The end user station of claim 1, wherein the at least one TCP connection comprises multiple Transmission Control protocol (TCP) connections with the content server.
Claim 3	
[3]	The end user station of claim 1, wherein the media player is configured to generate the factor according to the responses to segment requests.
Claim 4	
[4]	The end user station of claim 1, wherein the media player is configured to upshift to the higher quality copy when the factor is greater than the first threshold and the media player determines the higher quality playback can be sustained according to a combination of factors.
Claim 5	
[5]	The end user station of claim 1 wherein the media player is configured to upshift to the higher quality copy when the performance factor is greater than the first threshold and the media player determines that the higher quality playback can be sustained according to an amount of contiguously available files stored by the media player.
Claim 6	
[6]	The end user station of claim 1, wherein the media player is further configured to anticipate file requests and to pre-request files to enable fast-forward, skip randomly, and rewind functionality.
Claim 7	
[7]	The end user station of claim 1, wherein the media player is configured to initially request low quality files to enable instant playback of the video, and to subsequently upshift to a better quality copy of the video according to the performance factor.
Claim 8	
8[Pre]	A method executable by an end user station to present rate-adaptive streams received via at least one transmission control protocol (TCP) connection with a server over a network, the method comprising:
8[A][1]	streaming, by a media player operating on the end user station, a video from the server via the at least one TCP connection over the network,

8[A][2]	wherein multiple different copies of the video encoded at different bit rates are stored as multiple sets of files on the server,
8[A][3]	wherein each of the files yields a different portion of the video on playback,
8[A][4]	wherein the files across the different copies yield the same portions of the video on playback,
8[A][5]	and wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and wherein the streaming comprises:
8[B]	requesting by the media player a plurality of sequential files of one of the copies from the server based on the time indexes;
8[C][1]	automatically requesting by the media player from the server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the media player to shift the playback quality to a higher or lower quality one of the different copies,
8[C][2]	the automatically requesting including repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the factor relates to the performance of the network; and
8[C][3]	making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time, wherein the making the successive determinations to shift comprises upshifting to a higher quality one of the different copies when the at least one factor is greater than a first threshold and downshifting to a lower quality one of the different copies when the at least one factor is less than a second threshold; and
8[D]	presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time.
Claim 10	
[10]	The method of claim 8, wherein said making the successive determinations to shift comprises: determining if the higher quality playback can be sustained.

Claim 12	
[12]	The method of claim 8, wherein the factor is indicative of latency of the requested files, wherein the latency is a time measure between when one of the requests is issued and a time that response data of the request begins to arrive at the end user station.
Claim 13	
[13]	The method of claim 8, wherein the factor is indicative of time intervals between successive receive times for each response to the requested files.
Claim 14	
[14]	The method of claim 8, wherein the factor is indicative of delays or losses in one or more of the at least one TCP connection.
Claim 15	
[15]	The method of claim 8, wherein the server is a web server, and wherein the files are requested from the web server using Hyper Text Transfer Protocol (HTTP) messages sent via the at least one TCP connection.
Claim 16	
[16]	The method of claim 8, wherein the server comprises a cache server of a network infrastructure operator.

I. INTRODUCTION

Aylo Freesites Ltd ("Petitioner") petitions under 35 U.S.C. § 312 and 37 C.F.R. § 42 for *inter partes* review of claims 1-8, 10, and 12-16 ("Challenged Claims") of U.S. Patent No. 9,407,564 ("the '564 Patent") (EX1001). The '564 Patent is assigned to DISH Technologies L.L.C. ("DISH") and, based on information and belief, Sling TV L.L.C. is an exclusive licensee.

The '564 Patent relates to adaptive-rate shifting of streaming content, including a server storing sets of files at different bit rates and the client repeatedly generating a factor relating to the network that is indicative of an ability to sustain streaming at the highest quality set of files determined sustainable at that time. The Grounds advanced here were not relied upon during prosecution of the '564 Patent and teach such adaptive-rate shifting of content streaming.

II. MANDATORY NOTICES

A. Real Party-in-Interest – § 42.8(b)(1)

Petitioner certifies that Aylo Freesites Ltd (f/k/a MG Freesites Ltd), Aylo Premium Ltd (f/k/a MG Premium Ltd), and Aylo Billing Limited (f/k/a MG Billing Limited) are the only real parties-in-interest.

B. Related Proceedings – § 42.8(b)(2)

The '564 Patent is currently asserted in the below proceedings. Petitioner and its RPIs are only named parties in the District Court Litigations defined below:

- *MG Freesites Ltd et al. v. DISH Technologies LLC et al.* 3:23-cv-03674 (N.D. Cal.) (the "California Litigation")

- *DISH Technologies LLC et al. v. MG Premium Limited et al.* 2:23-cv-00552 (D. Utah) (the "Utah Litigation" and, collectively with the California Litigation, the "District Court Litigations");

- *DISH Technologies LLC et al. v. WebGroup Czech Republic A.S. et al.* 2:23-cv-00553 (D. Utah)

- *DISH Technologies LLC et al. v. Vidgo Inc.* 2:23-cv-00624 (D. Utah)

- *iFIT Inc. v. ITC* CAFC-23-1965 (Fed. Cir.), *which* is an appeal from Investigation No. 337-TA-1265 (ITC) (the "ITC Investigation")

- *DISH Technologies LLC v. A Parent Media Co. Inc. et al.* 1:23-*cv*-01000 (D. Del.)

- *DISH Technologies LLC v. fuboTV Media Inc.* 1:23-cv-00986 (D. Del.)

- *DISH Technologies LLC v. Beachbody, LLC d/b/a/BODi* 1:23-cv-00987 (D. Del.)

- *DISH Technologies LLC v. BritBox, LLC* 1:23-cv-08971 (S.D.N.Y.)

Additionally, Petitioner intends to file IPRs on U.S. Patent Nos. 8,868,772; 10,469,554; 10,469,555; 10,757,156; 10,951,680; 11,470,138; and 11,677,798.

C. Counsel – § 42.8(b)(3) and (b)(4); Service Information; Fees

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A Power of Attorney is filed concurrently herewith under 37 C.F.R. § 42.10(b). The Office is authorized to charge the fee set forth in 37 C.F.R. § 42.15(a) or other fees to Deposit Account No. 22-0261.

III. CERTIFICATION OF GROUNDS FOR STANDING

Petitioner certifies that the ’564 Patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR challenging the patent claims on the grounds identified in this Petition.

IV. UNPATENTABILITY GROUNDS

Petitioner requests cancellation of claims 1-8, 10, and 12-16 based on the grounds below.

Ground	Reference(s)	Challenged Claims	Basis
1	Ogdon	1-8, 10, and 12-16	103
2	Ogdon and Shteyn and Chou	1-8, 10, and 12-16	103

The two grounds are supported by the Declaration of Dr. Henry Houh (EX1003) and other supporting evidence in the Exhibit List. EX1003, ¶¶ 46-47.

V. ’564 PATENT

A. Summary

The ’564 Patent (application no. 14/516,303) was filed on October 16, 2014 and issued on August 2, 2016. EX1001, Cover. The ’564 Patent purports to relate to “adaptive-rate shifting of streaming content,” such as video, over the Internet. EX1001, Abstract, 1:18-21. The ’564 Patent describes “an agent controller module” to “simultaneously request at least portions of a plurality of streamlets” and to “continuously monitor streamlet requests and subsequent responses,” a “staging module” to “stage the streamlets and arrange the streamlets for playback on a content player,” and a “content module” to “process content and generate a plurality of high and low quality streams.” *Id.*, Abstract.

One embodiment of the system of the ’564 Patent includes “a content server 102” and “end user 104” coupled by a data communications network (*e.g.*, the Internet 106) wherein the “end user station 104” may be a personal computer, entertainment system, or a portable electronic device configured to present content. *Id.*, FIG. 1, 6:3-17. The ’564 Patent describes encoding the same content file 200 into three different “quality” streams:

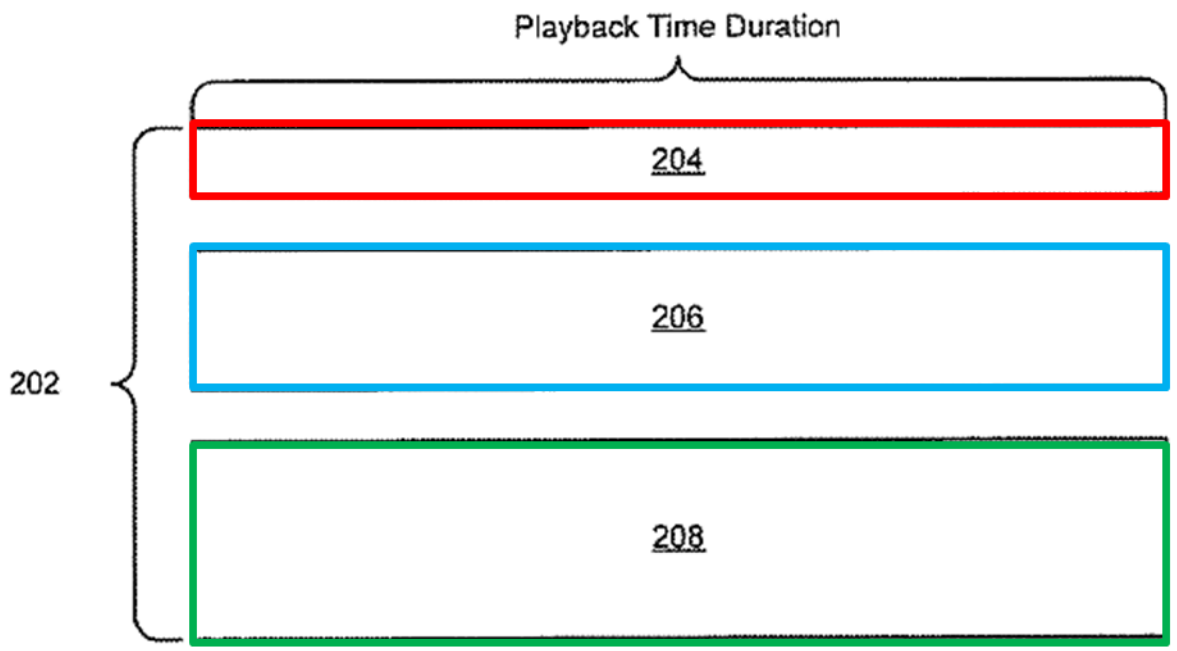


FIG. 2b

Id., FIG. 2b (annotated, low quality (red, 204), medium quality (blue, 206), and high quality (green, 208)), 6:46-57.

For example, "low quality stream 204 may be encoded and compressed to a bit rate of 100 kilobits per second (kbps), the medium quality stream 206 may be encoded and compressed to a bit rate of 200 kbps, and the high quality stream 208 may be encoded and compressed to 600 kbps." *Id.*, 6:53-57.

Each stream (204, 206, and 208) is also "divided into a plurality of streamlets" where "streamlet refers to any sized portion of the content file" and may be "an independent media object" where "streamlet 0 may have a time index of 00:00

representing the beginning of content playback, and streamlet 1 may have a time index of 00:02, and so on." *Id.*, 6:58-7:7.

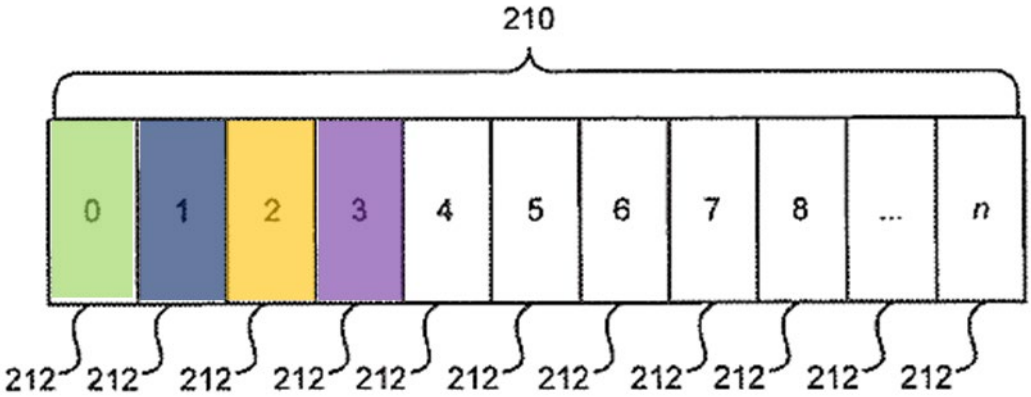


FIG. 2c

Id., FIG. 2c (annotated).

As the client receives a streamlet, it "calculates 708 a performance ratio" and "obtain[s] a performance factor." *Id.*, 12:15-40, FIGs. 6 and 7. Thereafter, the client determines whether to upshift or downshift the stream quality based upon comparing the performance factor versus trigger thresholds and makes a "determination of whether use of the higher quality stream is sustainable." *Id.*, 12:41-65.

B. Prosecution History

The '564 Patent was filed as Application No. 14/516,303 on October 16, 2014. On June 19, 2015, the Examiner issued a non-final rejection of all pending claims. EX1002, 129-144. All pending claims were rejected under non-statutory double patenting, under 35 U.S.C. § 101 as directed to non-statutory subject matter, and 35

U.S.C. § 112 ¶ 2 as being indefinite; claims 1, 3-11, 13-20 were rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. Publication No. 2002/0144276 ("Radford") and "Intelligent Streaming" ("Birney"); and claims 2 and 12 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Radford, Birney, and U.S. Publication No. 2003/0152036 ("Quinn-Brown"). *Id*.

On December 21, 2015, Applicant in response significantly amended the claims including deleting or rewriting limitations that were rejected under 35 U.S.C. § 112. *Id.*, 221-231.

Based on the newly-amended language, Applicant requested that the Examiner reconsider the prior art rejections. Applicant also referred to a Board decision in the parent application of the present application, which held that Birney did not disclose a limitation that "each of a plurality of different copies of the video encoded at different bit rates is stored as multiple files," which Applicant stated is similar to limitations in the newly-amended language.

Then, after an Examiner-initiated interview where Applicant agreed to roll pending claims 23 and 22 into claim 20 and make all other independent claims parallel (*id.*, 255), the Examiner issued a Notice of Allowance on March 31, 2016 (*id.*, 239-254).

C. Priority Date

Petitioner assumes for the purpose of this Petition a priority date of April 30, 2004 (the "Priority Date") based on the claimed priority to the Provisional application No. 60/566,831 (EX1001, Cover), but Petitioner reserves the right to contest this priority date (and priority chain) in other proceedings.

VI. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner submits that a person having ordinary skill in the art ("POSITA") as of the Priority Date would have had at least a B.S. degree in computer science or electrical engineering (or comparable degree) and two years of experience in networking or streaming media, or a M.S. in computer science or electrical engineering (or comparable degree). EX1003, ¶ 42. A higher level of education or specific skill might make up for less experience, and vice-versa. *Id*.

VII. CLAIM CONSTRUCTION

Petitioner submits that, for purposes of institution, no constructions are necessary. However, Petitioner acknowledges that in the ITC Investigation between Patent Owner and iFIT Inc., the Chief Administrative Law Judge ("ALJ") construed "a factor indicative of the current ability to sustain the streaming [of the video … wherein the set of one or more factors relate to the performance of the network]" according to its plain and ordinary meaning, "*e.g.*, one or more factors relating to the performance of the network that is indicative of an ability to sustain the streaming

of the video." EX1009, 53-61. The ALJ also construed "repeatedly generating a factor" as "generating a factor more than once" and construed "successive determinations" according to its plain and ordinary meaning. *Id.*, 61-64.

The PTAB is not bound by the ITC's constructions. *Mediatek Inc. v. Advanced Micro Devices, Inc.*, IPR2018-00102, Paper 48 (Final Written Decision), at 10-11 (PTAB Apr. 29, 2019) (citing *Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018)). Nevertheless, as shown herein, the asserted grounds render claims 1-8, 10, and 12-16 of the '564 Patent unpatentable even under the ITC's constructions. By asserting that the '564 Patent claims are unpatentable under the ITC's constructions, Petitioner is not conceding that those constructions are correct and reserves its rights to challenge those constructions in any future proceeding.

In the ITC Investigation, iFIT proposed a design-around with respect to certain limitations of other patents in the family of the '564 Patent. In response, DISH argued that even where limitations "require repeated up- and down-shifting, the single, initial adaptive stream selection performed by iFIT's Redesigned Products ***is equivalent***." EX1010, 32 (emphasis added). Thus, although Petitioner does not necessarily agree with Patent Owner, Patent Owner should be held to its argument that a "single, initial adaptive stream selection" is equivalent to limitations that require repeated up- and down-shifting.

VIII. OVERVIEW OF THE PRIOR ART

A. State of the Art

The ’564 Patent admits in the “Description of Related Art” section that “streaming media” was known, including streaming of “audio/video,” including on demand and live broadcasts. EX1001, 1:31-41. The ’564 Patent further admits that TCP connections were known and that “[m]ost streaming solutions use a TCP connection.” *Id.*, 2:6-49. Further, Patent Owner admits that the “standard HTTP/TCP protocol” is “the web standard upon which the Internet is built.” *See DISH Technologies LLC et al v. Aylo Premium Limited et al* Case No. 2:23-cv-00552-BSJ, D.I. 1 at ¶30. Other admissions in the ’564 Patent are that “[u]se of cache servers is well known to those skilled in the art.” EX1001, 8:6-10.

Before the Priority Date, “client-pull” streaming systems were known in the art wherein a client requested from a server sequential portions of a file at different encoded quality levels based on network bandwidth. EX1003, ¶ 49. For example, Chang describes “real time measurement and prediction of bandwidth for adaptive content delivery of rich media according to available user bandwidth.” EX1007, Abstract. Chang discloses a client (via java applets) that performs real time bandwidth measurement according to user’s available bandwidth and fetches the corresponding bandwidth sensitive track content from the server via HTTP requests. *Id.*, 7:43-53, 8:59-9:5, 9:45-51, 10:15-14, 10:35-58. In another example, Kliger

teaches a media player device that requests from a server the appropriate bandwidth object depending on network bandwidth. EX1008, 3:25-32, 5:25-28, 9:32-10:4, 12:33:13:8, claim 3.

B. Ogdon

Ogdon (EX1004) was filed on March 31, 1998 and issued on December 12, 2000. Ogdon is prior art under at least (pre-AIA) 35 U.S.C. § 102(b). Ogdon is not cited on the face of the ’564 Patent nor was it considered in the ITC Investigation.

Ogdon discloses a system for distributing a video presentation, during the performance of the presentation, over the Internet via webservers to a plurality of client nodes at a quality level appropriate for each client node based upon the transmission characteristics of the network, such as data transmission rate. EX1004, Abstract, 1:9-15, 2:21-35. Ogdon discloses that each presentation includes presentation “elements” (also referred to as “collections” or “subcollections”) containing “one or more segments” of the presentation and being “an indivisible portion of a presentation performance” wherein each such element has multiple versions of the same content and same duration at a different quality levels such that each version of each element can be substituted for the other as an alternative based upon network performance. *Id.*, 2:36-66, 13:47-49. Ogdon further discloses that each client node selects and requests each element at the appropriate quality level based

upon its calculated network characteristics. *Id.*, 4:29-36, 6:40-51, 7:10-15, 21:40-45, 22:10-33, 23:40-24:3, 25:24-30.

C. Shteyn

Shteyn (EX1016) was filed on November 4, 1999 and issued on May 5, 2009. Shteyn is prior art under at least (pre-AIA) 35 U.S.C. § 102(e). Shteyn is not cited on the face of the ’564 Patent, nor was it considered in the ITC Investigation.

Shteyn discloses partitioning a content file into segments at a server including storing alternates encoded at different bitrates for each segment. EX1016, Abstract, FIGs. 1-2, claims 1, 9, 11. Shteyn discloses that the client connects to the server and downloads the control XML file that enables the client to request, download, and play out each segment of the content file sequentially. *Id.*, 2:57-3:36, 3:44-61, 4:8-16. Shteyn further discloses that the client application may detect a change in bandwidth and select a different quality (higher or lower quality) segment when requesting subsequent segments. *Id.*, 4:20-31, FIG. 2, claim 1.

D. Chou

Chou (EX1013) was filed on December 4, 1998 and issued on October 21, 2003. Chou is prior art under at least (pre-AIA) 35 U.S.C. § 102(e). Chou is not cited on the face of the ’564 Patent, nor was it considered in the ITC Investigation.

Chou discloses obtaining real-time responses with interactive multimedia servers providing at least two different audio/visual data streams, with a first data

stream having fewer bits per frame and providing a video image much more quickly than a second data stream with a higher number of bits and quality. EX1013, Abstract. Chou discloses that the first data stream is available much faster and may be more quickly displayed on demand. *Id.* Chou further discloses that start-up delay and seek delay occur in order to guard against future buffer underflow due to network jitter. *Id.*, 2:59-3:8.

E. Analogous Art

Each prior art reference is analogous art to the claimed invention in the ’564 Patent, and each is in the same field of endeavor of adaptive-rate streaming based on network conditions. *Compare* EX1001, title, Abstract, 1:18-21, 2:44-48, 2:60-3:67, FIGs. 2c, 4, and 7, *with* EX1004, Abstract, 1:9-15, 3:38-63, 7:10-15, 7:40-63, 21:40-22:33, 23:40-24:3, FIG. 2; EX1016, Abstract, 1:6-14, 2:53-63, 3:44-64, 4:20-31, FIGs. 1-2; EX1013, Abstract, 2:7-3:19, 3:29-60, 6:50-7:30, FIG. 2; EX1003, ¶ 56.

Additionally, each prior art reference is reasonably pertinent to any purported problem addressed in the ’564 Patent, such as “alleviat[ing] the problems of reliability, efficiency, and latency” and “offer[ing] instantaneous viewing” using “multiple connections between a source and a destination, requesting varying bitrate streams depending upon network conditions.” EX1001, 2:39-2:48; EX1003, ¶ 57.

IX. SPECIFIC GROUNDS

A. Ground 1: Claims 1-8, 10, and 12-16 Would Have Been Obvious in view of Ogdon

1. Claim 1

a. 1[Pre]: "An end user station for adaptive-rate content streaming of digital content from a video server over a network, the end user station comprising:"

Whether or not the preamble is limiting, Ogdon teaches 1[Pre].

Ogdon discloses an end user station (client node 56) for streaming of digital content (e.g., video presentation) from a video server (webserver(s)) over a network (Internet). EX1004, Abstract ("distributing a performance of a presentation synchronously to a plurality of client nodes" via "the Internet"), 8:27-40 ("content webservers 96a, and alternate content web servers 96b" provide "presentation data to client sites 54 requesting such data via client nodes"), 7:40-48 ("at least one of a client node 56 (e.g., a personal computer) . . . may receive video . . . from a communications network 70 such as the Internet"), FIGs. 1A-1B.

Ogdon further teaches that each client node adaptively receives the video data and switches between versions of the video presentation based on network characteristics. *Id.* 3:38-41 ("**dynamically and adaptively switch**[1] between . . .

[1] All emphases in prior art citations are added unless otherwise noted.

versions of the presentation according to network transmission characteristics at each client network node"), 22:10-23 ("the client node 56 uses its most recent network 70 data transmission characteristics together with the host 200 transmitted list of current network 70 addresses for content webservers 96 to select an appropriate content webserver and an appropriate version of the next collection of segments to be retrieved."); EX1003, ¶ 59.

b. 1[A][1]: "a media player operating on the end user station"

Ogdon teaches 1[A][1]. Ogdon discloses a media player (client presentation software 88 and/or browser 78) operating on the end user station (client node). EX1004, 7:52-63 ("if the client node 56 is resident at a client site 54, then a network interface **software package** is required for receiving, e.g., video presentation information from the communications network 70 . . . includ[ing] a network browser 78 such as the Internet browsers offered by Microsoft and Netscape, together with a **client presentation software system 88** that coordinates with the browser 78 for requesting, receiving and **displaying presentation segments** (from the network 70) as appropriate during the presentation."); EX1003, ¶ 60.

Because Ogdon refers to the client presentation software and the browser as part of a "software package" that "together" perform functions of the invention, a POSITA would have considered the client presentation software and the browser as together forming "a media player." EX1003, ¶ 61.

Alternatively, if "a media player" is interpreted as requiring one single computer program, Ogdon contemplates receiving and displaying presentation data via just "an internet browser" or a plug-in within the browser (EX1004, 5:28-36), and a POSITA would have been motivated to modify the system such that each of the functions performed in Ogdon collectively by the client presentation software and browser be performed by a single program alone to simplify the system, reduce the number of programs that are required to run on the client node, and make it easier to debug. EX1003, ¶ 62. Further, this would have been a straightforward modification because it would have been a simple matter of programming one computer program to perform all functionality that the client presentation software and the browser are disclosed to perform collectively. *Id.*

c. 1[A][2]: "configured to stream a video from the video server via at least one transmission control protocol (TCP) connection over the network,"

Ogdon teaches 1[A][2]. Ogdon discloses that the media player (client presentation software and/or browser) is configured to stream the video from the video server (webserver(s)) via at least one TCP connection over the network (Internet). EX1004, 7:59-63 ("client presentation software system 88 that coordinates with the browser 78 for requesting, receiving and displaying presentation segments (**from the network 70**) as appropriate during the presentation"), 2:1-10 ("the present invention may communicate the video portion

of a presentation to a user site via the Internet (more generally, via any **TCP/IP network**) . . . both the video and audio portions of the presentation may be provided solely by a **TCP/IP network** such as the Internet"), 19:34-44 ("when the time for the presentation arrives, the client's client presentation software 88 via the network 70 establishes a network 70 connection between the client's client node 56 and the host 200 controlling the presentation performance. . . . After the host 200 is contacted, it instructs the client presentation software 88 to establish a connection with one of the internal webservers 248 for dynamic content."), claim 7 ("a network using **TCP/IP** for communicating between at least one of: (a) one of said content supplying nodes and said first client node; (b) said presentation controlling node and said first client node; (c) one of the content supplying nodes and said presentation controlling node."); EX1003, ¶ 63.

d. 1[A][3]: "wherein multiple different copies of the video encoded at different bit rates are stored on the video server as multiple sets of files,"

Ogdon teaches 1[A][3]. Ogdon discloses that each copy of the video presentation is made up of multiple files ("segments") and each segment has alternative bitrate versions for the client nodes to choose from. Ogdon uses the term "segment" to mean a portion of the video presentation and explains that "one or more" segments may be grouped into an "element," "collection," or "subcollection" *E.g.*, EX1004, 2:36-49, 4:29-36, 18:40-45, 22:10-29. EX1003, ¶ 64. Ogdon explains

that this is "an indivisible portion" of the video presentation (EX1004, 2:36-42) and that a segment can be a file. EX1004, 28:17-18 ("presentation data segment file"); EX1003, ¶ 64. Thus, Ogdon discloses that the video presentation is made up of multiple sets of files. EX1003, ¶ 64

Ogdon further discloses that the video presentation has multiple different copies (*e.g.*, high quality (full animation) and lower quality (limited animation) versions) encoded at different bitrates for each segment because there are "[d]ifferent versions of the same presentation" with "different network requirements," for example, "a first version of a presentation may require a network transmission rate sufficient for real time or animated video" and "another version of the presentation may only require a transmission rate sufficient for graphic slides." EX1004, 2:30-66. Further, "if a low transmission data rate is detected . . . presentation elements of a reduced size can be retrieved" or "if a higher transmission rate is detected . . . presentation elements of a greater size (and **corresponding enhanced quality of presentation**) can be retrieved." *Id.*, Abstract; *see also id*, 22:44-47 ("better presentation quality presentation elements may be retrieved (e.g., the presentation quality may be enhanced from **limited** or no animation **to full animation**)"), 13:47-49 ("**several variations** of presentation content can be provided to clients based on the available bandwidth"), 24:55 ("alternative segment collections that are smaller"), claim 9 ("said first subcollection includes a first video

portion, and said second subcollection includes a different second video portion that corresponds in content with said first video portion, and wherein said first and second video portions have substantially different expected data transmission rates for being transmitted to said first client node"); EX1003, ¶ 65. A POSITA would have understood the smaller size and lower transmission rate for "limited or no animation" video to be encoded at a lower bitrate than the larger size, higher quality, and higher transmission rate requirement "full animation" video, which would be encoded at a higher bitrate. EX1003, ¶ 65.

Ogdon further discloses that a set of video servers (webserver(s)) store the different copies of the video presentation as "[d]ifferent versions of the same presentation, accessible from the one or more of the content webservers." EX1004, 2:30-31, 9:30-31, 22:60-64; *see also id.*, 9:44-46 ("content manager 104 distributes presentation content (e.g., presentation segments) to the content webservers 96"); claim 21 ("storing a plurality of segments of a presentation for network access via one or more content supply nodes"), FIG. 2C (step 508 "list of network 70 addresses (URLs) of the content webserver(s) 96 from which this next collection of segments can be retrieved").

e. 1[A][4]: "wherein each of the files yields a different portion of the video on playback,"

Ogdon teaches 1[A][4]. Ogdon discloses that each of the files (segments) yields a different portion of the video on playback because the "subcollection of segments (i.e., presentation elements) [are] ordered according to their presentation sequence." EX1004, 2:44-45, 3:46-47 ("presentation as an **ordered series of presentation segments**"), claim 21 ("there are subcollections of one or more segments, each subcollection having a predetermined presentation order"), FIG. 2C (step 508 "next collection of one or more (video) segments"); EX1003, ¶ 67.

f. 1[A][5]: "wherein the files across the different copies yield the same portions of the video on playback,"

Ogdon teaches 1[A][5]. *See* 1[A][3]. Ogdon discloses that the files (segments) across the different copies contains the same portions of the video on playback because each version (*e.g.*, high quality (full animation) and lower quality (limited animation) versions) of the stream encodes the same portion of the presentation at different quality levels. EX1004, 2:43-49 ("each version of a presentation typically has its subcollection of segments (i.e. presentation elements) ordered according to their presentation sequence" and "**every segment** (or subcollections thereof) **in one version corresponds with a segment** (or subcollections thereof) **having the same presentation order in each of the other versions**."); *see also id.*, 2:49-55 ("**corresponding segments** (or subcollections thereof) in different versions" are the

same such that "any of the corresponding alternative segments (or subcollections thereof) from different versions can be **presented as a replacement for another such corresponding segment** (or subcollection) during the presentation."), claim 21 ("said first subcollection is replaceable with said second subcollection"); EX1003, ¶ 68.

g. 1[A][6]: "and wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and wherein the media player streams the video by:"

Ogdon teaches 1[A][6]. Ogdon discloses that each of the files (segments) in the different copies (versions) have a time index because the segments across different versions are aligned in time such that each begin at the same playback time in relation to the beginning of the video and because they have the same video presentation order (just different quality levels). EX1004, 2:44-49 ("substantially every segment (or subcollections thereof) in one version corresponds with a segment (or subcollections thereof) having **the same presentation order**, in each of the other versions."); 3:11-15 ("ordering of predefined segments (or subcollections thereof) is capable of being presented and archived . . . such ordering can take into account alternative segments for the presentation."). Each segment is sequentially ordered starting from the beginning of the video presentation, which corresponds to the playback times and the segments are requested in such order.

In the ITC Investigation, the ALJ interpreted "time index" according to its plain and ordinary meaning and found this limitation was met by requesting sequential media segments according to an increasing "sequential Media Sequence number" noting that the "URI contains information that is an index for the relative position in time of the Media Segment within the larger Media Sequence." EX1010, 90-92.

Here, as explained above, Ogdon teaches that each segment for each quality level is sequentially ordered in the same order starting from the beginning of the video presentation, which corresponds to the playback times and are requested in order. EX1004, FIG. 2 (step 508: "The host 200 sends one or more commands to the client presentation software 88 at each client node 56 indicating; (A) **the next** collection of one or more (video) segments", then at step 560, when there are no more segments to present, the process loops back to step 476 for identifying **the next** collection of presentation segments). Thus, to the extent "time index" is interpreted as the ALJ interpreted this limitation, Ogdon meets this limitation.

To the extent "time index" requires files to be indexed or named with some indication of playback time, Ogdon also teaches this limitation. For example, Ogdon contemplates a "virtual time" identification for segments of the video presentation. EX1004, 25:63-26:14 ("A 'virtual time' column 620 is provided wherein values in this column set and reset a presentation performance timer so that, for example, some

portions of a presentation will automatically be skipped if a performance of the presentation is running behind a predetermined performance schedule . . . for a presentation performance corresponding to script level 1, in row 608a, the timer is set to 0.00 and the subsequent rows 608 for script level 1 are sequentially performed until 608e is encountered, wherein a determination is made as to whether the timer has a value greater than one minute and one second….”), FIG. 3 (620: “Virtual Time HR:MN:SEC”). A POSITA would have understood that the virtual time at a given script level applies to each of the files (segments) across the different qualities whose playback is that same portion of the video, such that they have the same time index in relation to the beginning of the video, given Ogdon’s disclosure of segments at different versions having the same presentation order. EX1003, ¶ 71.

As discussed above, the files (segments), starting with the first segment, play the files (segments), starting with the first segment, play back the same portion of video for the different copies. *See* 1[A][5]. And the media player (client presentation software and/or browser) streams the video. *See* 1[A][1]-1[A][2]; EX1003, ¶ 72.

h. 1[B]: “requesting a plurality of sequential files of one of the copies from the video server based on the time indexes,”

Ogdon teaches 1[B]. Ogdon discloses that the files of each of the copies are in the same sequential order. *See* 1[A][3], 1[A][5] (segments ordered according to their presentation sequence), 1[A][6] (time indexes). Ogdon further teaches that end

user device client nodes request (via client presentation software and/or browser) sequential files (segments) of one of the copies from the video server because Ogdon is a "client-request" system that requires the client to request each sequential segment or element where "each client node" must "request presentation content from a given set of communications network servers rather than having such servers push presentation content to the client node." EX1004, 6:41-44. More specifically, "the present invention employs a 'client-request' technology, where each presentation member's browser requests information from a communication network server." *Id.*, 7:10-13, claim 12 ("a network interface component, residing on said first client node, for receiving said presentation control information and transmitting a request for a subcollection of said collection of data segments to one of said content supplying nodes, wherein said network interface component includes a network browser for communicating with said communications network"), FIG. 2C (step 528: "the browser, in turn, sends a network 70 (Internet) request to the selected content webserver 96 for the selected collection of segments").

Ogdon discloses that "requesting a plurality of sequential files" may include a request for a single segment per request or multiple segments per request because Ogdon discloses that each "element" (a/k/a "subcollection" or "collection") that is requested contains "one or more segments." EX1004, 2:39-40, 22:30-33. Thus, each requested element may contain one segment (file) or, alternatively, each requested

element may contain two or more segments (files). In the latter case, the request would be for multiple segments (files) at once. EX1003, ¶ 74.

Ogdon also teaches that the client requests the segments "based on the time indexes" because, as explained with respect to 1[A][6], each element is sequentially ordered starting from the beginning of the video presentation, which corresponds to the playback times and the elements are requested in such order and because segments may be requested based on a "virtual time." EX1004, FIG. 2 (step 508: "The host 200 sends one or more commands to the client presentation software 88 at each client node 56 indicating; (A) the next collection of one or more (video) segments", then at step 560, when there are no more segments to present, the process loops back to step 476 for identifying the next collection of presentation segments); 23:41-50 ("client node 56 provides the identity of the selected webserver and next collection of segments to the client node's browser 78, and the browser, in turn, sends a network 70 request to the selected web server for the selected (subversion) of segments" then "client presentation software 88 monitors the time elapsed before transmission of the selected collection of segments is completed, and determines whether these segments are provided within an appropriate window of time that allows them to be presented during the performance of the presentation."); EX1003, ¶ 75.

i. 1[C][1]: "automatically requesting from the video server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the media player to shift the playback quality to a higher or lower quality one of the different copies, the automatically requesting including"

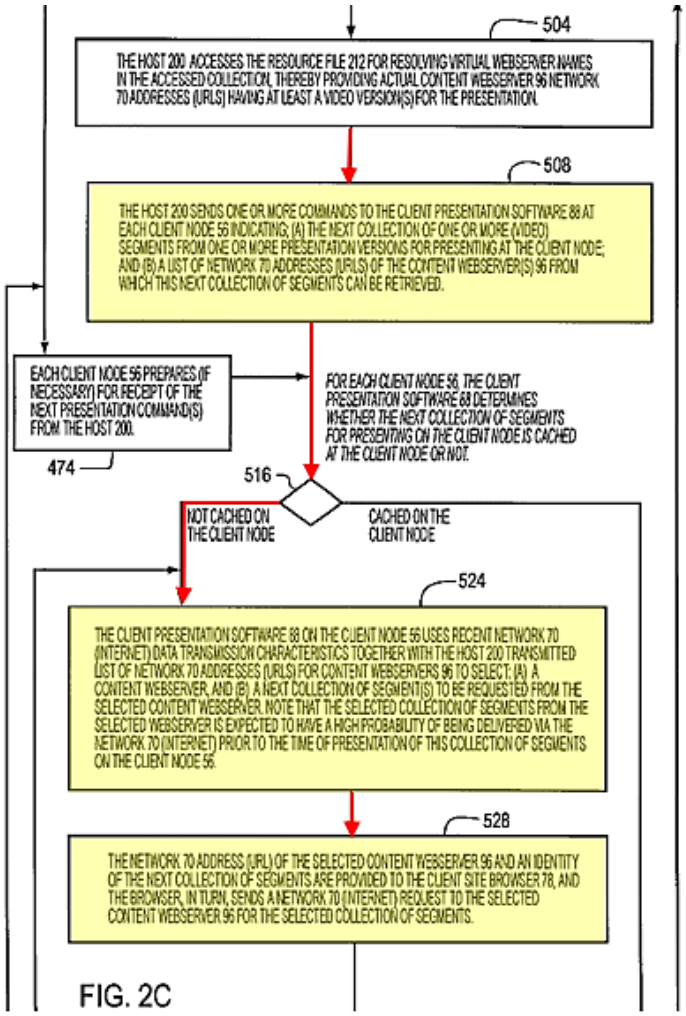
Ogdon teaches 1[C][1]. Ogdon discloses automatically requesting from the video server subsequent portions of the video. EX1004, 6:18-23 ("Thus, when the data required for a segment is not timely cached prior to its intended performance at a client's node, alternate segment data is **automatically requested** from the communications network by the client node."), FIG. 2C (step 524: "The client presentation software 88 . . . select[s] . . . a next collection of segment(s)"). Ogdon teaches that selection of a higher or lower quality for each segment may be dependent upon successive determinations (*e.g.*, (step 516) client **determines** whether segments are already cached; (step 532) after requesting, client **determines** whether the requested segments are cached within a desired time; (step 536) if no, client **determines** whether there is time to try again; (step 544) if yes, client **determines** network characteristics at client node). *Id.*, FIGs. 2C-2D, 24:50-57 ("on such **subsequent iterations for determining** an alternative way to present a particular portion of the presentation, the following steps may be performed: the **original calculation is again performed with new times and current bandwidth information** . . . [a]n overall limit of three re-tries of any URL will force smaller

alternative segment collections to be selected"), claims 3 ("without manual input from the first user"), 11 ("without user selection input").

Ogdon further discloses making such successive determinations to shift the playback quality to a higher or lower quality of one of the different copies of the video because Ogdon repeatedly determines, based on bandwidth, in a loop to shift the quality of the segments.

> [I]f the next collection of segments is not cached on a client node 56, then step 524 is performed wherein the client presentation software 88 on the client node 56 uses its most recent network 70 data transmission characteristics together with the host 200 transmitted list of current network 70 addresses for content webservers 96 **to select** an appropriate content webserver and **an appropriate version of the next collection of segments to be retrieved**.

Id., 22:10-18, 23:5-22 (calculating bandwidth to "[s]elect the highest quality collection of presentation elements available"), 23:40-48, 24:50-57; EX1003, ¶ 77; *see also* EX1004, FIGs 2B-2D.



EX1004, FIG. 2C (annotated).

j. 1[C][2]: "repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the set of one or more factors relate to the performance of the network;"

Ogdon teaches 1[C][2]. Ogdon discloses repeatedly generating "a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies" because it repeatedly calculates data transmission characteristics such as the current client node bandwidth to select a quality version

for each segment collection. EX1004, 22:10-23 ("the client node 56 uses its **most recent network 70 data transmission characteristics** together with the host 200 transmitted list of current network 70 addresses for content webservers 96 **to select** an appropriate content webserver and **an appropriate version of the next collection of segments to be retrieved**."), 23:5-22 (calculating "average bandwidth" for "[s]elect[ing] the highest quality collection of presentation elements available"), FIG. 2C ("Client node 56 uses recent network 70 (Internet) data transmission characteristics . . . to select . . . (B) a next collection of segment(s) to be requested from the selected content webserver."), 5:36-39 ("several variations of presentation content can be delivered **based on, e.g., the current bandwidth available** and the client's affiliated network server(s)."), 13:47-49, 24:50-57 ("on such subsequent iterations for determining an alternative way to present a particular portion of the presentation, the following steps may be performed: the original calculation is again performed with new times and current bandwidth information . . . [a]n overall limit of three re-tries of any URL will force smaller alternative segment collections to be selected"), claim 2.

Ogdon also explains that additional factors may be calculated for selecting the quality segments such as "network 70 error rates, fluctuations in bandwidth, or a predictive statistical expectation of bandwidth." *Id.*, 23:6-28. Both current bandwidth and these additional factors also "relate to the performance of the

network" because bandwidth determines the capacity of the network and clients will select the most appropriate version to ensure the requested segments are delivered in time for presentation to sustain the stream. *Id.*, 23:18-20 ("Select the highest quality collection of presentation elements available"), 23:10-23 ("the goal of assuring that there is a **high probability** of this next collection of segments being delivered to the client node 56 **prior to the time that this collection is to be used in the presentation performance on the client**"), 21:62-63 ("attempt to assure a **timely caching** of this next collection of segments for timely performance"); EX1003, ¶ 79.

k. 1[D]: "making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time so that the media player upshifts to a higher quality one of the different copies when the factor is greater than a first threshold and downshifts to a lower quality one of the different copies when the factor is less than a second threshold; and"

Ogdon teaches 1[D]. Ogdon discloses making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files (segments) of the highest quality copy of the video that is determined to be sustainable at that time. In Ogdon, the process for retrieving the next file and determining whether to shift the playback quality of the next file to the highest quality sustainable is carried out in a loop. *See* EX1004, 23:10-23, FIG. 2B

(step 476 "first (next) collection of corresponding presentation segments"), FIG. 2C (step 508 "next collection of one or more (video) segments from one or more presentation versions" and steps 524, 528), FIG. 2D (step 552 present "the next segment" and loop at 560), 22:10-18, 23:5-22 (calculating bandwidth to "[s]elect the highest quality collection of presentation elements available"), 23:40-48, 24:50-57; EX1003, ¶ 80.

Ogdon further teaches that the media player (client presentation software and/or browser) upshifts to a higher quality one of the different copies (*e.g.*, higher quality full animation version) when a certain threshold is exceeded such that the factor is greater than a first threshold (*e.g.*, bandwidth high enough to timely cache higher quality) and similarly downshifts to a lower quality one of the different copies (*e.g.*, lower quality reduced animation version) when the factor is less than a second threshold (*e.g.*, bandwidth only sufficient to timely cache lower quality). *See* 1[B]-1[D]; EX1004, 6:14-23 ("the present invention monitors: . . . the data transmission rate . . . the amount of data cached on each client's node" and "when the data required for a segment is not timely cached prior to its intended performance at a client's node, alternative segment data is automatically requested"), FIG. 2C (step 524 selecting segments that "have a high probability" of being delivered "prior to the time of presentation"), 2:62-66, 21:61-62; EX1003, ¶ 81.

l. 1[E]: "presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time."

Ogdon teaches 1[E]. Ogdon discloses that the segments are played back by the client node(s) in order of ascending playback time, *i.e.*, in sequential order. *See* 1[Pre], 1[B], 1[C][1], 1[D]; EX1004, 7:59-63 ("a client presentation software system 88 that coordinates with the browser 78 for requesting, receiving and displaying presentation segments (from the network 70) as appropriate during the presentation"), 26:37-39 ("provide a particular presentation content file (e.g., of presentation elements) at a client node 56 in time for display."), 2:44-45, 3:46-47 ("presentation as an ordered series of presentation segments"), claim 21 ("there are subcollections of one or more segments, each subcollection having a predetermined presentation order"), FIG. 2C (step 508 "next collection of one or more (video) segments"); EX1003, ¶ 82.

2. Claim 2: "The end user station of claim 1, wherein the at least one TCP connection comprises multiple Transmission Control protocol (TCP) connections with the content server."

Ogdon teaches claim 2. EX1004, 2:13-23 ("[t]he present invention distributes a presentation [] among network server nodes of a TCP/IP network . . . a version of the presentation may be accessed **synchronously from different network server nodes**, or different versions of the presentation may be accessed **synchronously from one or more of the network server nodes**."), claim 7, 22:48-64 ("the

presentation element(s) selected is dependent upon network protocols such as HTTP" noting that "as the size of the presentation data and the time for retrieval decreases, the present invention tends to use HTTP" and, for example, "there is a primary webserver 96a and an alternative webserver 96b, and each has presentation versions for both HTTP and FTP as well as both having animated and non-animated interchangeable presentation elements."); EX1003, ¶ 83. A POSITA would have understood the above disclosures of Ogdon to teach multiple TCP connections with the content server. It was well-known to a POSITA at the time of the alleged Priority Date that simultaneously connecting to different server nodes requires multiple TCP connections. EX1003, ¶ 84. For example, a POSITA understood that TCP connections are distinguished by their IP addresses and port numbers, and that different servers have different IP addresses. As such, synchronously connecting to more than one content server, as Ogdon discloses, requires multiple TCP connections. *Id.*

To the extent that Patent Owner argues that Ogdon does not teach multiple TCP connections, a POSITA would have been motivated to configure Ogdon's apparatus to establish multiple TCP connections between a client and content server. For example, a POSITA understood that having multiple TCP connections provides a back-up if one connection fails. It also allows parallel downloading of multiple segments at the same time, which increases efficiency, *e.g.*, where maximum TCP

throughput is the limiting factor of performance. Multiple TCP connections also permits connections to an alternative webserver(s) for the user to request different quality segments, to ensure sufficient buffer of data for continuous playback. A POSITA would understand that multiple TCP connections would be required to access content parts residing on different server computers, since TCP connections are defined by the source/destination IP addresses and source/destination ports, and different server computers would have different IP addresses, and source port numbers for a TCP connection are selected at the time of the connection. EX1003, ¶ 85. A POSITA would have had a reasonable expectation of success with such a modification because the TCP protocol allows for multiple connections and Ogdon teaches using TCP to request different quality versions or the same version from different server nodes. *Id.*

3. Claim 3: "The end user station of claim 1, wherein the media player is configured to generate the factor according to the responses to segment requests."

Ogdon teaches claim 3. *See* 1[C][2] (*e.g.*, generating the factor according to successive determinations of the most recent network data transmission characteristics to select the next collection of segments to be retrieved); EX1003, ¶ 86.

4. Claim 4: "The end user station of claim 1, wherein the media player is configured to upshift to the higher quality copy when the factor is greater than the first threshold and the media player determines the higher quality playback can be sustained according to a combination of factors."

Ogdon teaches claim 4. *See* 1[B], 1[C][1] (successive determinations to shift quality higher), 1[D] (upshifting to the higher quality copy when the factor is greater than the first threshold), 1[C][2] (determining that the quality of playback can be sustained according to a combination of factors such as bandwidth and available content webservers, as well as network error rates, bandwidth fluctuations, or predictive statistical expectation of bandwidth); EX1003, ¶ 87.

5. Claim 5: "The end user station of claim 1 wherein the media player is configured to upshift to the higher quality copy when the performance factor is greater than the first threshold and the media player determines that the higher quality playback can be sustained according to an amount of contiguously available files stored by the media player."

Ogdon teaches claim 5. Ogdon discloses that the media player upshifts to the higher quality copy when the performance factor is greater than the first threshold. *See* 1[C][1] (successive determinations to shift quality higher), 1[C][2] (performance factor), 1[D] (upshifting to the higher quality copy when the factor is greater than the first threshold). Ogdon further discloses that the media player determines that this higher quality playback can be sustained according to an amount of contiguously available files stored by the media player. At step 516, the client presentation

software determines whether the next collection of segments is cached at the client node, *i.e.*, whether an amount of contiguously available files is stored by the media player. If yes, then it proceeds (through step 548) to step 552 and presents the next segment, *i.e.*, according to there being a nonzero amount of contiguously available files stored by the media player. EX1004, FIG. 2C step 516, FIG. 2D step 552, 24:60-25:30 (if the requested collection of segments is cached, present all segments to the client); *see also id.*, 21:61-64 ("client nodes now enter a processing state whereby these nodes attempt to assure a timely caching of this next collection of segments for timely performance of their portion of the presentation"), 24:14-49 (if selected segments cannot be retrieved, determining if there is sufficient time to try again, *i.e.*, enough of the presentation buffered to try to download the same segments again); EX1003, ¶ 88.

6. Claim 6: "The end user station of claim 1, wherein the media player is further configured to anticipate file requests and to pre-request files to enable fast-forward, skip randomly, and rewind functionality."

Ogdon teaches claim 6. Ogdon discloses requesting collections of segments, not limited to one segment at a time. *See* 1[C][1]; EX1004, 10:61-11:5 ("allowing the client node to **pre-load** certain content portions of a presentation"), 19:52-59 (upon connection, the client presentation software 88 retrieves and caches "one or more initial presentation segments"); EX1003, ¶ 89. Ogdon further discloses

enabling "dynamic control of the pace of the presentation by a presentation leader while each client node selects specific display materials to attain that pace." EX1004, 6:44-47.

The '564 Patent explains, without elaboration, that "the agent controller module 402 may be configured to anticipate streamlet 212 requests and pre-request streamlets 212. By pre-requesting streamlets 212, the user may fast-forward, skip randomly, or rewind through the content and experience no buffering delay." EX1001, 8:46-50. A POSITA would have understood from Ogdon's commensurate disclosure of pre-loading content portions that fast-forward, skip randomly, and rewind functionality was enabled. A POSITA would have been motivated to configure Ogdon's apparatus to anticipate file requests and pre-request files in order to utilize available bandwidth and ensure a sufficient buffer of data for such standard playback and control functionality. These functions were extremely well known in the art and expected by consumers of multimedia content. *See* EX1013, 2:64-3:4 (discussing seeking to a particular point of time in on-demand multimedia content and its inherent delay); EX1003, ¶ 90. A POSITA would have had a reasonable expectation of success with such a modification because Ogdon teaches preloading the presentation in accordance with available bandwidth, and functionality for fast-forwarding, skipping randomly, and rewinding was well known and commonly implemented in media players in the art. *Id.*

7. Claim 7: "The end user station of claim 1, wherein the media player is configured to initially request low quality files to enable instant playback of the video, and to subsequently upshift to a better quality copy of the video according to the performance factor."

Ogdon teaches claim 7. Ogdon discloses that if lower network transmission characteristics exist prior to the request for the first element (*i.e.*, subcollection of segments), the client node will initially request a low quality element, and if the network characteristics subsequently improve after requesting the low quality streamlets, the client node will select a higher quality next element. EX1004, Abstract ("if a low transmission data rate is detected at a first client node, **presentation elements of a reduced size can be retrieved**."); s*ee* 1[B] (client requesting files), 1[C][1] (requesting subsequent files), 1[C][2] (performance factor), 1[D] (upshifting to the higher quality copy according to the performance factor); EX1003, ¶ 91. Additionally, a POSITA would have known that it was desirable to "reduce[] the start-up" for streaming content to beneficially allow the user to view the stream more quickly and thus request a low quality first then switch up to a better quality once there is sufficient buffering at the client. EX1013, 3:29-54.

8. Claim 8

a. 8[Pre]: "A method executable by an end user station to present rate-adaptive streams received via at least one

transmission control protocol (TCP) connection with a server over a network, the method comprising:"

Whether or not the preamble is limiting, Ogdon teaches 8[Pre].

Ogdon discloses a method executable by an end user station (client node(s) 56) to present rate-adaptive streams (*e.g.*, video presentation) received via at least one TCP connection with a server (webserver(s)) over a network (network 70, *e.g.*, Internet); *See* 1[Pre], 1[A][1]; EX1003, ¶ 92.

b. 8[A][1]: "streaming, by a media player operating on the end user station, a video from the server via the at least one TCP connection over the network,"

Ogdon teaches 8[A][1]. *See* 1[A][1] (media player operating on the end user station), 1[A][2] (streaming a video from the server at least one TCP connection over the network); EX1003, ¶ 93.

c. 8[A][2]: "wherein multiple different copies of the video encoded at different bit rates are stored as multiple sets of files on the server,"

Ogdon teaches 8[A][2]. *See* 1[A][3]; EX1003, ¶ 94.

d. 8[A][3]: "wherein each of the files yields a different portion of the video on playback,"

Ogdon teaches 8[A][3]. *See* 1[A][4]; EX1003, ¶ 95.

e. 8[A][4]: "wherein the files across the different copies yield the same portions of the video on playback,"

Ogdon teaches 8[A][4]. *See* 1[A][5]; EX1003, ¶ 96.

f. **8[A][5]: "and wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and wherein the streaming comprises,"**

Ogdon teaches 8[A][5]. *See* 1[A][6]; EX1003, ¶ 97.

g. **8[B]: "requesting by the media player a plurality of sequential files of one of the copies from the server based on the time indexes;"**

Ogdon teaches 8[B]. *See* 1[B]; EX1003, ¶ 98.

h. **8[C][1]: "automatically requesting by the media player from the server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the media player to shift the playback quality to a higher or lower quality one of the different copies,"**

Ogdon teaches 8[C][1]. *See* 1[C][1]; EX1003, ¶ 99.

i. **8[C][2]: "the automatically requesting including repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the factor relates to the performance of the network; and"**

Ogdon teaches 8[C][2]. *See* 1[C][2]; EX1003, ¶ 100.

j. **8[C][3]: "making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time, wherein the making the successive determinations to shift comprises upshifting to a higher quality one of the different copies when the at least one factor is greater than a first threshold and downshifting to a lower quality one of the**

different copies when the at least one factor is less than a second threshold; and"

Ogdon teaches 8[C][3]. *See* 1[D]; EX1003, ¶ 101.

k. 8[D]: "presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time."

Ogdon teaches 8[D]. *See* 1[E]; EX1003, ¶ 102.

9. Claim 10: "The method of claim 8, wherein said making the successive determinations to shift comprises: determining if the higher quality playback can be sustained."

Ogdon teaches claim 10. *See* claim 4, 1[C][1] (successive determinations to shift quality higher), 1[D] (upshifting to the higher quality copy when the factor is greater than the first threshold), 1[C][2] (determining that the quality of playback can be sustained according to a combination of factors such as bandwidth and available content webservers, as well as network error rates, bandwidth fluctuations, or predictive statistical expectation of bandwidth); EX1003, ¶ 103.

10. Claim 12: "The method of claim 8, wherein the factor is indicative of latency of the requested files, wherein the latency is a time measure between when one of the requests is issued and a time that response data of the request begins to arrive at the end user station."

Ogdon teaches claim 12. Ogdon discloses that latency—the measure between when a request for the files is issued and when response data begins to arrive—is a performance factor. *See* EX1004, 23:40-24:27 ("[T]he client presentation software 88 monitors the time elapsed before transmission of the selected collection of

segments is completed, and determines whether these segments are provided within an appropriate window of time that allows them to be presented during performance of the presentation."; measuring " (7.2) for each one of the one or more previous requests for presentation segments, an elapsed length of time between the request time for the presentation segments and receipt of the segments"; "the client presentation software 88 determines if there is sufficient time to retry obtaining the collection of segments or another collection of alternative segments prior to the time of their estimated performance"); EX1003, ¶ 104.

11. Claim 13: "The method of claim 8, wherein the factor is indicative of time intervals between successive receive times for each response to the requested files."

Ogdon teaches claim 13. *See* EX1004, 23:24-28 ("additional network characteristics other than bandwidth may be used" such as "network 70 error rates, fluctuations in bandwidth, or a predictive statistical expectation of bandwidth may be used"), ("comparing elapsed time as in (7.2)"). Accounting for such fluctuations in bandwidth entails multiple bandwidth measurements and as such is indicative of time intervals between successive receive times. EX1003, ¶ 105. Moreover, Ogdon recognizes that a POSITA would understand various functions dependent on measurements such network transmission rates, latencies, and segment sizes. EX1004, 23:40-24:27. One such known function was network jitter: "variability in the rate at which data is transmitted through a network." EX1013, 2:46-47. Network

jitter is indicative of time intervals between successive receive times for each response to the requested files, and a POSITA knew to utilize it as a performance factor because large jitter could result in a buffer underflow and necessitate a lower quality level, *i.e.*, an inability to sustain the current level. EX1003, ¶ 105.

12. Claim 14: "The method of claim 8, wherein the factor is indicative of delays or losses in one or more of the at least one TCP connection."

Ogdon teaches claim 14. Ogdon discloses that delays or losses in a TCP connection constitute a performance factor. *See* EX1004, 6:9-26 ("there is still the possibility of **data delays** from a slow network server"; "Accordingly, the present invention monitors: (a) characteristics of network transmissions of presentation materials to client nodes . . . ."; considering whether "the data required for a segment is **not timely cached** prior to its intended performance at a client's node"), 23:24-28 ("additional network characteristics other than bandwidth may be used" such as "network 70 error rates"), 23:40-24:27 ("[T]he client presentation software 88 monitors the time elapsed before transmission of the selected collection of segments is completed, and determines whether these segments are provided within **an appropriate window of time** that allows them to be presented during performance of the presentation."; "[F]or determining this desired time, a function dependent on one or more of: (a) various measurements related to one or more other client nodes 56 receiving the presentation performance, (b) a predetermined default length of

time, as e.g., specified in the presentation script, and (c) a length of time determined by a leader of the presentation performance, e.g., during the performance."; measuring "network 70 transmission rates for each one or more previous requests for presentation segments"; "the client presentation software 88 determines if there is sufficient time to retry obtaining the collection of segments or another collection of alternative segments prior to the time of their estimated performance"); EX1003, ¶ 106.

13. Claim 15: "The method of claim 8, wherein the server is a web server, and wherein the files are requested from the web server using Hyper Text Transfer Protocol (HTTP) messages sent via the at least one TCP connection."

Ogdon teaches claim 15. *See* EX1004, 22:48-54 ("the present invention tends to use HTTP"); 1[Pre], 8[Pre] (content webservers 96); EX1003, ¶ 107.

14. Claim 16: "The method of claim 8, wherein the server comprises a cache server of a network infrastructure operator."

Ogdon teaches claim 16. Patent Owner admits that "[u]se of cache servers is well known to those skilled in the art, and will not be discussed further herein." EX1001, 8:6-10; *see* Section VIII.A; EX1003, ¶ 108. A POSITA would have been motivated to configure Ogdon's apparatus to connect to a cache server in order to improve and increase reliability of response time and performance as compared to connecting to a webserver. EX1003, ¶ 108. A POSITA would have had a reasonable expectation of success with such a modification because the cache servers were well

known, as admitted by Patent Owner, and implemented by ISPs and other network infrastructure operators in common networking protocols as alternatives to webservers. *Id.*

B. Ground 2: Claims 1-8, 10, and 12-16 Would Have Been Obvious in view of Ogdon, Shteyn, and Chou

The sections of Ground 1 (Section IX.A) are incorporated into this section by reference. As explained above in Section IX.A, Ogdon teaches claims 1-8, 10, and 12-16. To the extent that Patent Owner argues that Ogdon fails to teach certain limitations, Ogdon in view of Shteyn and Chou teaches these limitations.

1. Claims 1 and 8

As explained above in Section IX.A, Ogdon teaches all limitations of independent claims 1 and 8. To the extent it is argued that Ogdon lacks certain limitations, Shteyn and/or Chou teach these limitations.

a. Media Player Operating on the End User Station (1[A][1] and 8[A][1])

Shteyn teaches 1[A][1] and 8[A][1]. Shteyn discloses a media player (software) on the apparatus (client computing device). EX1016, 2:57-3:5, 4:33-44 ("a hardware-based single-purpose device, similar to the Rio MP3 player" where "**the player needs**, in addition to an XML parser, the ability to interpret XML and the **ability to download and play-out content segments sequentially**" or "a

software application on a multi-purpose **computing device** . . . software implementing the functionalities"); EX1003, ¶ 111.

A POSITA would have been motivated to modify the apparatus of Ogdon such that each of the functions performed in Ogdon collectively by the client presentation software and browser be performed by a single program alone, such as taught by Shteyn, to simplify the system, reduce the number of programs that are required to run on the client node, and make it easier to debug. EX1003, ¶ 112. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and Shteyn are drawn to similar systems of client-server based streaming, where the client adaptively receives video segments based on client requests based on playout capabilities including network conditions. EX1016, 2:57-3:5, 1:45-46, 1:65, 3:44-56, 4:20-23, 2:35-39, claims 1, 5, 9, 12, FIGs. 1, 2; Section IX.A.1.a-c. Implementing a media player as a single computer program as opposed to the combination of presentation software and a browser would have been a straightforward modification for a POSITA—a simple matter of programming one computer program to perform all functionality that the client presentation software and the browser are disclosed to perform collectively. EX1003, ¶ 112.

b. Multiple Different Copies of the Video Encoded at Different Bit Rates Are Stored as Multiple Sets of Files on the [Video] Server (1[A][3] and 8[A][2])

Shteyn teaches 1[A][3] and 8[A][2]. Shteyn discloses "[a]n electronic file . . . **partitioned into a sequence of segments** at the **server** side." EX1016, Abstract. Each segment (or "file") is stored in the server as different encoded bitrate (bandwidth) and size (bytes), such as "part1" and "part1 alt." *Id*., 3:44-56 ("segment labeled '**part1**' is in a preferred format . . . An alternative first part is labeled '**part1 alt**' having a **different length**" **in bytes** and a "different bandwidth requirement."), 1:65-2:7 ("the **content file is split into multiple parts** . . . location of the whole file as well as of it parts **at the server**"), FIG. 2 ("(Preferred format) . . . <length> 1024 </length> . . . <min_bandwidth> 10,000 </min_bandwidth> . . . (Alternative format) . . . <length> 512 </length> . . . <min_bandwidth> 8,000 </min_bandwidth>"), 2:20-24 ("information contains references to the file location as well as references to the locations of the parts" and "intended bandwidth information is associated with the parts"), claims 1, 9 ("**storing** on one or more **server** computers **multiple alternative files** corresponding to a given segment"), 2:57-3:2, 4:20-21; EX1003, ¶ 113.

A POSITA would have understood that a segment stored with a different byte length (size) and different bandwidth would mean that each segment is encoded at different bit rates because both are determinative of the encoded rate. EX1003, ¶ 114. For instance, the "Preferred format" with a length of 1024 and minimum

bandwidth of 10,000 shows it is a higher quality encoded rate (larger size and requires more bandwidth) than the lower quality encoded rate or "Alternative format" with a length of 512 and minimum bandwidth of 8,000 (smaller size and thus requires less bandwidth). *Id*.

Shteyn also describes that the different encoded parts for each segment can be the same format or different formats. EX1016, claims 8, 14, FIG. 2, 1:42-50; EX1003, ¶ 115.

A POSITA would have understood the above disclosures and from Ogdon's disclosures (at Section IX.A.1.d), including disclosure of different versions of the same video presentation each having "different network requirements," to teach encoding the same raw uncompressed video content into two or more versions having different bitrates. EX1003, ¶ 116. It was well-known to a POSITA at the time of the alleged Priority Date that streaming different versions of content at different quality levels depending on client network requirements meant encoding the content into different quality levels with different bitrates. For example, a POSITA understood that if a higher quality and a lower quality of the same video were provided, the lower quality version had "fewer bits per frame and provides a video image much more quickly than" a higher quality version "with a higher number of bits and hence higher quality video image." EX1013, Abstract, *see also id.*, 3:29-35 ("a server provides at least two different data streams. . . . a low resolution stream

encoded at a bit rate below the transmission bit rate. . . . a normal resolution stream encoded at a bit rate equal to the transmission bit rate."), 10:16-21 ("quality (also referred to as resolution) is a measure of detail in an image . . . quality of an image is commonly measured in pixels per inch and in the number of bytes used to described the color values at each pixel"), 11:6-7 ("low bit rate encoding for the same content"), 7:43-55 ("The streaming media system 300 comprises an encoder 302 which may be coupled to camera 210 or other real time or uncompressed video sources . . . encodes and/or compresses the data . . . for live transmission such as video conferencing, the encoder buffer 304 may be a simple as a first-in first-out (FIFO queue."); EX1003, ¶ 116.

A POSITA would have been motivated to modify the apparatus of Ogdon such that each segment is stored as a file and thus the multiple different copies of the video encoded at different bit rates are stored as multiple sets of files, to simplify streaming requests by requesting individual successive files rather than requiring the requests to include byte- or other ranges of the video. EX1003, ¶ 117. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and Shteyn are drawn to similar systems of client-server based streaming, *see* Section IX.B.1.a, where video segments have time indexes and yield different portions of the video, while across different copies they yield the same portions of the video. EX1016, 1:65, claims 1, 8, 12, 14, FIG. 2, 2:35-39, 3:31-36,

3:57-4:14, 4:20-31, 3:44-53, Abstract, FIG. 1; Section IX.A.1.d-g; EX1003, ¶ 117. Implementing multiple sets of files would have been a straightforward modification for a POSITA, as requesting video segments by having multiple files for the segments or by requesting ranges of the video were two alternative design choices well known to a POSITA. EX1003, ¶ 117.

c. Automatically Requesting [by the Media Player] from the [Video] Server Subsequent Portions of the Video (1[C][1] and 8[C][1])

Shteyn teaches 1[C][1] and 8[C][1]. Shteyn discloses that sequential files (segments) are automatically selected by the media player (software) from the video server based upon successive determinations to shift the playback quality to a higher or lower quality one of the different copies of the video because Shteyn repeatedly or successively selects a quality segment based on bandwidth or system capabilities. *See* EX1016, 3:44-56 ("**The segment labeled "part1" is in a preferred format and described the length of the part, e.g., in bytes**, the format, the **minimum bandwidth required for a connection**, and the location on the **Internet**. An **alternative first part is labeled "part1 alt" having a different length**, different format, **different minimum bandwidth requirement**, and a different location. The XML code can be combined with XSL for generating a user level UI at the user's client. The **client thus can automatically choose the format compatible with the client's play-out capabilities**."), 4:20-31 ("During operation, **the client application**

could select a next segment in a different format for the same content to adapt to changing circumstances, e.g., lower bandwidth due to network congestion . . . the **client pulls the content segments from the locations indicated in the XML control information** for buffering and subsequent play-out."), 2:35-38 ("The format of parts for play-out may be chosen according to user-related information, e.g., . . . bandwidth sharing/fluctuation conditions, etc."), claims 5, 9, 12, 1:46, claims 1, 8, 14, FIG. 2, 3:21-30 ("[I]n a thread- and/or process-rich environment, several threads and/or processes can be organized to independently retrieve file segments, while playing out the content of other segments."), 2:23-24 ("The client may make its own decisions regarding how many parts to download before the start of the play out (execution)."); EX1003, ¶ 118.

The requesting of segments is also shown in Figure 1 below.

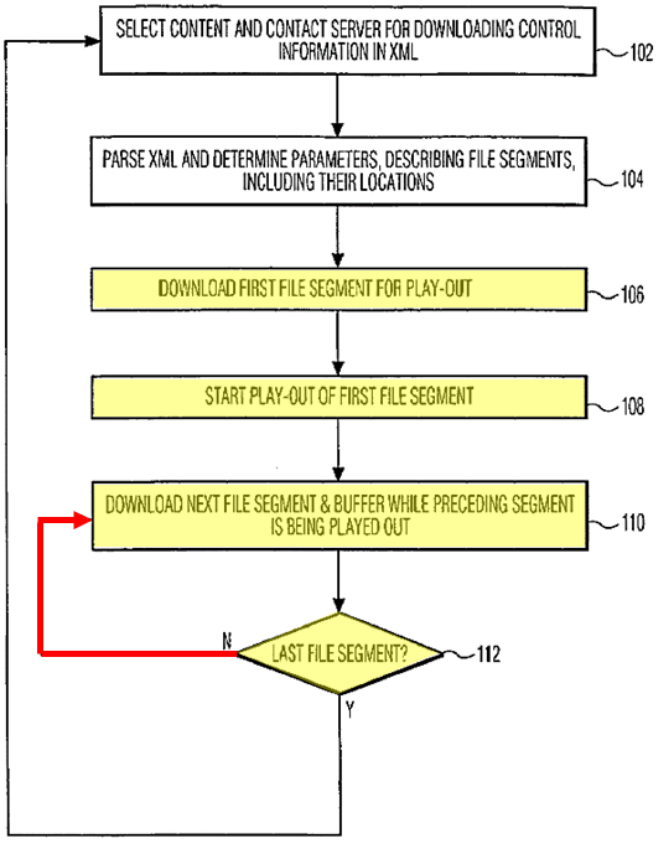


FIG. 1

EX1016, FIG. 1 (annotated).

A POSITA would have been motivated to implement automatic requests by the media player for subsequent portions of the video from the video server in the apparatus of Ogdon, so that the playback experience would proceed without need for manual intervention by the client or the user. EX1003, ¶ 119. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and Shteyn are drawn to similar systems of client-server based streaming, *see* Section IX.B.1.a, where the media player successively requests segments based on successive determinations to shift playback quality, including the ability to sustain

streaming based on network performance, to achieve continuous playback at the highest sustainable quality. EX1016, 4:20-26, 3:44-56, 2:10-15, 3:57-4:14, 1:62-64, FIG. 2, claims 1, 2, 3, 9, 12; Section IX.A.1.i-k; EX1003, ¶ 119. Automatically requesting subsequent portions would have been a straightforward implementation for a POSITA—a simple matter of programming the client to automate the loop for requesting subsequent files. EX1003, ¶ 119.

2. Claim 6

Shteyn teaches claim 6. Shteyn discloses anticipating file requests and pre-requesting files because its client can retrieve multiple segments, not limited to one segment at a time, and including the client making its own decisions on how many parts to download in advance. EX1016, 3:21-30, 2:23-24. As explained with respect to Ogdon and claim 6 in Section IX.A.6, a POSITA would have understood from these disclosures of Ogdon and Shteyn that fast-forward, skip randomly, and rewind functionality was enabled, and would have been motivated to configure Ogdon's apparatus to anticipate file requests and pre-request files such as taught by Shteyn in order to utilize available bandwidth and ensure sufficient buffer of data for such standard playback and control functionality, with a reasonable expectation of success. *See* Section IX.A.6; EX1003, ¶ 120. These navigation functions were extremely well known in the art and expected by consumers of multimedia content, and as Chou observes, delay caused by such navigation, like seek delay, can be

"particularly annoying," such that a POSITA would have been motivated to address it. *See* EX1013, 2:64-3:12; EX1003, ¶ 120. A POSITA would have had a reasonable expectation of success with such a modification because Ogdon and Shteyn teach preloading segments of the presentation in accordance with available capabilities, such as bandwidth, networking multithreading, or processing capability, and functionality for fast-forwarding, skipping randomly, and rewinding was well known and commonly implemented in media players in the art. *See* Section IX.A.6; EX1016, 3:21-30, 2:23-24; EX1003, ¶ 120.

3. Claim 7

Ogdon in view of Shteyn and Chou teaches claim 7. Chou describes start-up delay as the latency experienced after starting transmission from the beginning of the content. EX1013, 2:59-64. Chou discloses providing at least two different data streams, one at a low resolution and lower bit rate, and another at a normal resolution and larger bitrate than the first, where "[t]he server initially transmits the low resolution stream" so that "the delay due to buffering is reduced to nearly zero," and with the normal resolution stream being transmitted "[w]hen the client buffer has grown sufficiently large to guard against future underflow by the normal resolution stream." *Id.*, 3:29-54; EX1003, ¶ 121.

A POSITA would have been motivated to modify the apparatus of Ogdon to initially request a lower quality for the first files, such as taught by Chou, in order to

have a quicker start-up time for the stream to minimize the wait for the user wishing to view the stream, which Chou observes can be "particularly annoying." EX1013, 2:59-3:12; EX1003, ¶ 122. In addition, a POSITA would have understood that the client could beneficially use the initial low-quality slice to determine network requirements for subsequent requests. EX1003, ¶ 122. A POSITA would have had a reasonable expectation of success with such a combination because it would have been a straightforward modification of Ogdon to specify that a lower quality of collections of segments be retrieved initially, and whereby Ogdon, Shteyn, and Chou are drawn to similar systems of adaptive client-server based streaming of content having multiple qualities. *Id.*

4. Claim 13

Ogdon in view of Shteyn and Chou teaches claim 13. Chou describes network jitter as "[t]he variability in the rate at which data is transmitted through a network." EX1013, 2:46-47. Chou discloses that network jitter is a factor indicative of the ability to sustain streaming. *Id.*, 3:2-6 ("Both start-up and seek delays occur because even after the client begins to receive new data, it must wait until its buffer is sufficiently full to begin playing out of the buffer. It does this in order to guard against future buffer underflow due to network jitter and variable bit-rate compression."). As explained in Section IX.A.11, network jitter is indicative of time intervals between successive receive times for each response to the requested files,

and a POSITA knew to utilize it as a performance factor because large jitter could result in a buffer underflow and necessitate a lower quality level, *i.e.*, an inability to sustain the current level. EX1003, ¶ 123.

Accordingly, a POSITA would have been motivated to configure Ogdon's apparatus to have the performance factor be indicative of time intervals between successive receive times for each response, such as taught by Chou, in order to provide more active adaptability to changing network conditions and further reduce the potential for playback delay or stuttering. EX1003, ¶ 124. A POSITA would have had a reasonable expectation of success with such a combination because factoring jitter was known, and Ogdon and Chou are drawn to similar systems of adaptive client-server based streaming of content. *Id.*

X. GRAHAM FACTORS (NO SECONDARY CONSIDERATIONS)

The first three *Graham* factors were discussed for each ground, *i.e.*, the scope of the prior art, the prior art as compared to the claims, and the level of ordinary skill in the pertinent art. *See* Sections V-IX.

For the last factor, secondary considerations, Petitioner acknowledges that the ALJ in the ITC Investigation accepted Patent Owner's argument that there was a presumption of a nexus between the claims and the Move Media Player (which was acquired by DISH) and ultimately found certain secondary considerations. EX1009, 212-213. DISH argued that respondents conceded that the Move Media Player

embodied the claimed invention because respondents argued that a public use of Move Media Player in 2005 was an invalidating use meeting each and every element of the asserted claims. *Id.*, 212. The ALJ accepted this argument and also found that DISH's expert demonstrated that Move's success is tied to the unique characteristics of the claimed invention including "offering 'a smooth end user experience as the Move Media Player up-shifts and down-shifts in response to network and client CPU availability" and streaming using "simple HTTP protocol transfer of media files from standard Web servers rather than deployment of expensive media servers," which reduce cost and complexity. *Id.*, 213.

Petitioner submits that these findings are incorrect. First, Petitioner has not made any claims that prior use of the Move Media Player was an invalidating public use and thus the ALJ's findings regarding the concession that Move Media Player meets the claims does not apply to Petitioners.

Second, Petitioner disagrees that the Move Media Player has a nexus to the '564 Patent because any of Move's success is not tied to unique characteristics of the claimed invention. As the prior art discussed above shows, the purportedly unique and successful aspects of the Move system that the ALJ relied on to find a nexus were already in existence in the prior art and thus cannot form the basis of any nexus to the claimed invention. *See Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1364 (Fed. Cir. 2023) ("[O]ur case law makes clear that objective evidence of

nonobviousness lacks a nexus if it exclusively relates to a feature that was *known* in the prior art—not necessarily well-known") (emphasis in original) (internal citations and quotations omitted).

For example, the purported "unique" claimed feature of "a smooth end user experience" that "up-shifts and down-shifts in response to network and client CPU availability," was already present in the prior art. For example, Ogdon and Shteyn all disclose upshifting and downshifting quality of the stream in response to, for example, network congestion to ensure a smooth and uninterrupted stream. *See* Sections IX.A.1: 1[C][1]-1[D]; IX.B.1: 1[C][1].

Additionally, the alleged "unique" claimed feature of "use of simple HTTP protocol transfer of media files from standard Web servers rather than deployment of expensive media servers" cannot be a basis for finding a nexus explained in the Grounds above, at least Ogdon and Shteyn disclose using simple HTTP protocol for clients to request transfer of files from standard web servers, rather than specialized media servers. *See* Section IX.A.1: 1[B]; EX1004, 14:46-49, 22:48-63; FIGs. 6A-6B; EX1016, 3:4-5, FIG. 2.

Thus, Patent Owner has not shown any nexus to the claim language.

XI. NO BASIS FOR DISCRETIONARY DENIAL

A. § 314(a): *Fintiv* and *General Plastic* Factors Favor Institution

The six *Fintiv* factors weigh against discretionary denial. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 6 (PTAB Mar. 20, 2020).

First Factor. This is neutral because Petitioner has not yet moved to stay the District Court Litigations pending IPR, and the PTAB will not speculate on how a district court may rule when a stay is requested. *See Hulu LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021).

Second Factor. This favors institution as a Final Written Decision is quite likely before a trial occurs given no trial date is yet scheduled for the District Court Litigations.

Third Factor. This factor favors institution given the District Court Litigations are in their earliest stages because the case management conference has not yet occurred (scheduled for October 31, 2023) and no answer has been submitted yet in the Utah Litigation, thus no discovery, claim construction, nor any other significant milestones have occurred.

Fourth Factor. This factor favors institution. Petitioner stipulates that if this ’564 Patent IPR is instituted, Petitioner will not pursue invalidity grounds in the District Court Litigations of the Challenged Claims on any ground raised, or that could have been reasonably raised in this IPR for the Challenged Claims. *Sotera*

Wireless, Inc. v. Masimo Corp., IPR2020-01019, Paper 12, at 18-19 (PTAB Dec. 1, 2020).

Fifth Factor. This factor should be accorded little weight or is neutral given the Petitioner and Patent Owner are parties in the District Court Litigations.

Sixth Factor. Petitioner's merits are strong, as shown in the above grounds and described in the supporting Houh declaration.

Additionally, *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha* factors weigh against discretionary denial because there is no prior petition filed on the challenged claims of the '564 Patent. *Id*., IPR2016-01357, Paper 19, at 16-18 (PTAB Sept. 6, 2017).

B. § 325(d): *Advanced Bionics* Favors Institution

Denial under § 325(d) is not warranted under *Advanced Bionics'* two-factor test. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, at 8 (PTAB Feb. 13, 2020).

The first factor of whether the "same or substantially the same prior art or arguments previously were presented to the Office" (*id*.) is not met because the specific grounds here were not considered during prosecution of the '564 Patent. Further, neither Ogdon, Shteyn, nor Chou are cited on the face of the '564 Patent. Because the first factor is not met, there is no need to analyze the second factor. *Sony*

Group Corp. v. MZ Audio Sciences, LLC, IPR2022-01544, Paper No. 12, at 7 (PTAB Apr. 21, 2023).

XII. CONCLUSION

Petitioner requests *inter partes* review and cancellation of claims 1-8, 10, and 12-16.

DATED: October 13, 2023

Respectfully submitted,

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CERTIFICATION OF COMPLIANCE UNDER 37 CFR § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), Petitioner certifies that this Petition for *Inter Partes* Review has total 12,963 words as counted by Microsoft Word, exclusive of the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, word count, and appendix of exhibits or claim listing (37 CFR § 42.24(a)). This is within the 14,000 word limit allowed under § 42.24(a)(1)(i).

DATED: October 13, 2023

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CERTIFICATE OF SERVICE

I hereby certify that on October 13, 2023 I caused a true and correct copy of the foregoing materials:

- Petition for *Inter Partes* Review of U.S. Patent 9,407,564
- Exhibits
- Petitioner's Power of Attorney

to be served via overnight delivery on the USPTO Patent Center (PAIR) Correspondence Address for U.S. Patent RE47835 as follows:

54583 – Dish Technologies L.L.C.
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Englewood, CO 80112

I also caused a courtesy copy of the foregoing materials to be served via email on DISH's counsel of record in the district court litigations:

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