

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:)
U.S. Patent No. 11,677,798)
Issued: Jun. 13, 2023)
Application No.: 17/962,231)
Filing Date: Oct. 7, 2022)

For: **Apparatus, System, and Method For Multi-Bitrate Content Streaming**

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,677,798

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PETITIONER’S EXHIBIT LIST

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Exhibit Number	Description
1001	U.S. Patent No. 11,677,798 (the “’798 Patent”)
1002	File History of U.S. Patent No. 11,677,798
1003	Declaration of Dr. Henry Houh including Curriculum Vitae (“Houh”)
1004	U.S. Patent No. 6,161,137 to Ogdon et al. (“Ogdon”)
1005	International P.C.T. Publication WO 2002/075482 A2 (“Allen”)
1006	Synchronized Multimedia Integration Language (SMIL 2.0) (“SMIL 2.0”)
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	Internet Archive Affidavit for URLs including EX1006
1012	Respondents’ Notice of Prior Art in 337-TA-1265
1013	U.S. Patent No. 6,637,031 to Chou
1014	U.S. Provisional Application No. 60/041,770 (“Ogdon Provisional”)
1015	File History of U.S. Pat. 6,161,137 to Ogdon
1016	U.S. Patent No. 7,529,806 to Shteyn (“Shteyn”)

TABLE A: LISTING OF CLAIMS

Claim Designation	Claim Language
Claim 1	
1[Pre]	A system for adaptive-rate content streaming of digital content playable on one or more end user stations over the Internet, the system comprising:
1[A]	at least one storage device storing digital content,
1[B]	the digital content encoded at a plurality of different bit rates creating a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream,
1[C]	wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets encoded at a respective one of the plurality of different bit rates, each group of streamlets comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;
1[D]	wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and
1[E]	wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first temporal portion of the digital content in each of the first bit rate stream, the second bit rate stream, and the third bit rate stream, and wherein the first streamlet of the first bit rate stream encodes the same first temporal portion of the digital content at a different bit rate than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream.
Claim 2	
2[A]	The system of claim 1, further comprising: a plurality of servers located at different locations across the Internet, each server configured to:
2[B]	receive at least one streamlet request over one or more network connections from one or more end user stations to retrieve the first streamlet storing a portion of the digital content, wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the streams;

Claim Designation	Claim Language
2[C]	retrieve from the at least one storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and
2[D]	send the retrieved first streamlet from the currently selected one of the different copies to the requesting one of the end user stations over the one or more network connections.
Claim 3	
[3]	The system of claim 2, wherein the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the same second portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.
Claim 4	
[4]	The system of claim 3, wherein the first and second durations are different.
Claim 5	
5[A]	The system of claim 1, further comprising: a first server configured to:
5[B]	receive at least one streamlet request over one or more network connections from the one or more end user stations to retrieve the first streamlet storing the first temporal portion of the digital content, wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the digital content;
5[C]	retrieve from the at least one storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and
5[D]	send the retrieved first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream to the requesting one of the end user stations over the one or more network connections.

Claim Designation	Claim Language
Claim 6	
[6]	The system of claim 5, wherein the digital content comprises a live event video of a live event, and the first streamlets of the first bit rate stream, the second bit rate stream, and the third bit rate stream are available before the live event is complete.
Claim 7	
[7]	The system of claim 6, wherein the streamlets from the first bit rate stream, the second bit rate stream, and the third bit rate stream of the live event, when played back, are presented in a live stream to a viewer.
Claim 8	
[8]	The system of claim 7, wherein the first server is further configured to: receive at least one virtual timeline request over the one or more network connections from the one or more end user stations to retrieve a virtual timeline; and send the virtual timeline to the requesting one of the end user stations over the one or more network connections.
Claim 9	
[9]	The system of claim 1, further comprising: an encoding module configured to receive the digital content and encode the streamlets of the first bit rate.
Claim 11	
11[Pre]	An end user station comprising:
11[A]	a processor;
11[B]	a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the processor to:
11[C][1]	establish one or more network connections between the end user station and at least one server,
11[C][2]	wherein the at least one server is configured to access at least one of a plurality of groups of streamlets of digital content;
11[C][3]	wherein the digital content is encoded at a plurality of different bit rates to create a plurality of streams including at least a first bit rate stream, a second bit rate stream, and a third bit rate stream,
11[C][4]	wherein each of the first bit rate stream, the second bit rate stream, and the third bit rate stream comprises a group of streamlets encoded at the same respective one of the different bit rates, each

Claim Designation	Claim Language
	group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;
11[C][5]	wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and
11[C][6]	wherein the first streamlets of each of the first bit rate stream, the second bit rate stream and the third bit rate stream each has an equal playback duration and each of the first streamlets encodes the same portion of the digital content at a different one of the different bit rates;
11[D]	determine whether to select a higher or lower bit rate copy of the stream and based on that determination, select a specific one of the first bit rate stream, the second bit rate stream, and the third bit rate stream;
11[E]	place a first streamlet request to the at least one server over the one or more network connections for the first streamlet of the selected stream;
11[F]	receive the requested first streamlet from the at least one server via the one or more network connections; and provide the received first streamlet for output of the digital content to a presentation device.
Claim 12	
12[A]	The end user station of claim 11, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:
12[B]	place a second streamlet request to the at least one server over the one or more network connections for the second streamlet of the selected stream;
12[C]	receive the requested second streamlet from the at least one server via the one or more network connections; and
12[D]	arrange the first streamlet and second streamlet in order of ascending presentation time for output of the digital content to the presentation device.
Claim 13	
[13]	The end user station of claim 11, wherein at least some streamlets are requested from the at least one server via a hypertext transfer protocol (HTTP) GET request.

Claim Designation	Claim Language
Claim 14	
[14]	The end user station of claim 11, wherein the at least one server comprises at least two servers and wherein at least one streamlet is requested from a first server of the at least one server and at least one other streamlet is requested from a second server of the at least one server other than the first server.
Claim 15	
[15]	The end user station of claim 11, wherein each of the streamlets is requestable by the processor without regard to whether the processor has previously requested other streamlets of the digital content.
Claim 16	
[16]	The end user station of claim 11, wherein at least a plurality of streamlets are separate files stored by the at least one server.
Claim 17	
17[A]	The end user station of claim 11, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:
17[B]	place a second streamlet request to the at least one server over the one or more network connections for a second streamlet of a different bit rate stream, wherein the different bit rate stream comprises a different stream than the selected stream;
17[C]	receive the requested second streamlet from the at least one server via the one or more network connections;
17[D]	arrange the first streamlet and second streamlet in order of ascending presentation time for output of the digital content to the presentation device.
Claim 18	
18[A]	The end user station of claim 16, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:
18[B]	determine an anticipated inability to receive the digital content at the second bit rate of the second bit rate stream at a rate sufficient for presenting the digital content as the digital content is received, and in response to the determining the anticipated inability, requesting a third streamlet of the first bit rate stream, the third

Claim Designation	Claim Language
	streamlet immediately subsequently adjacent to the second streamlet of the digital content during presentation.
Claim 19	
[19]	The end user station of claim 18, wherein the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the same second portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.
Claim 21	
[21]	The end user station of claim 12, wherein the processor providing the first received streamlet for playback comprises outputting the first streamlet to a presentation device connected to the end user station.
Claim 22	
22[Pre]	A process executable by one or more servers to stream digital content for playback by one or more end user stations, the process comprising:
22[A]	storing, by the one or more servers, a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream,
22[B]	wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets encoded at a respective one of a plurality of different bit rates, each group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;
22[C]	wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and
22[D]	wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first temporal portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the first streamlet of the first bit rate stream having a different one of the different bit rates than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream;

Claim Designation	Claim Language
22[E]	receiving at least one streamlet request over one or more network connections from the one or more end user stations to retrieve the first streamlet storing the first temporal portion of the digital content,
22[F]	wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the digital content;
22[G]	retrieving from the storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and
22[H]	sending the retrieved first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream to the requesting one of the end user stations over the one or more network connections.
Claim 23	
[23]	The method of claim 22, wherein a second streamlet of each of the groups of streamlets each has a same second duration and corresponds to a same second temporal portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.
Claim 24	
[24]	The method of claim 23, wherein the first and second durations are different.

I. INTRODUCTION

fuboTV Media Inc. (“Petitioner”) petitions under 35 U.S.C. § 312 and 37 C.F.R. § 42 for *inter partes* review of claims 1-9, 11-19, and 21-24 (“Challenged Claims”) of U.S. Pat. 11,677,798 (“the ’798 Patent”) (EX1001). The ’798 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 ’798 Patent relates to adaptive-rate shifting of streaming content, including client requesting streamlets of different bitrates based upon client determinations to select higher or lower bitrate versions. The Grounds advanced here were not relied upon during prosecution of the ’798 Patent.

II. MANDATORY NOTICES

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

Petitioner certifies that fuboTV Media Inc. is the only real party-in-interest.

B. Related Proceedings – § 42.8(b)(2)

The ’798 Patent is currently asserted in the below proceedings:

- *DISH Technologies LLC et al. v. MG Premium Limited et al.*, No. 2:23-cv-00552 (D. Utah)
- *DISH Technologies LLC et al. v. WebGroup Czech Republic A.S. et al.*, No. 2:23-cv-00553 (D. Utah)
- *DISH Technologies LLC et al. v. Vidgo Inc.*, No. 2 :23-cv-00624 (D. Utah)

- *DISH Technologies LLC v. fuboTV Media Inc.*, No. 1:23-cv-00986 (D. Del.)
- *DISH Technologies LLC v. BritBox, LLC*, No. 1:23-cv-08971 (S.D.N.Y.)
- *DISH Technologies LLC v. Yanka Industries, Inc. d/b/a MasterClass*, No. 1:23-cv-01305 (D. Del.)
- *DISH Technologies LLC et al. v. Aylo Freesites Ltd. f/k/a MG Freesites Ltd. et al.*, No. 2:24-cv-00066 (D. Utah)

Petitioner is a named party only in *DISH Technologies LLC v. fuboTV Media Inc.*, No. 1:23-cv-00986 (D. Del.) (the “District Court Litigation”).

At present, and not including Petitioner’s IPR, two IPRs have been filed challenging the ’798 patent: IPR2024-00043 and IPR2024-00517, both filed by Aylo Freesites Ltd. f/k/a MG Freesites Ltd. (“Aylo”). The Board has instituted review of all challenged claims in IPR2024-00043, which concerns precisely the same invalidity grounds raised by this Petition.

Petitioner seeks to join the Aylo IPR, IPR2024-00043. Petitioner has entered into an agreement with Dr. Henry Houh, who prepared the declaration set forth at Ex. 1003. Dr. Houh confirmed that he has no conflict in working with Petitioner, and agreed to be engaged by Petitioner at his standard rate, should Aylo be unable to proceed with IPR2024-00043 and Petitioner is therefore no longer in the

understudy role. This would include attendance at deposition to discuss his opinions as set forth in Ex. 1003 or any future declarations in IPR2024-00043. He also confirmed that his opinions have not changed since signing his Ex. 1003 declaration on October 13, 2023. *See also* Motion for Joinder.

Additionally, Aylo has filed 14 IPRs collectively against the following related DISH patents: U.S. Patent Nos. 8,868,772 (IPR2024-00048 and IPR2024-00519); 9,407,564 (IPR2024-00047 and IPR2024-00518); 10,469,554 (IPR2024-00045 and IPR2024-00514); 10,469,555 (IPR2024-00146 and IPR2024-00515); 10,757,156 (IPR2024-00147 and IPR2024-00513); 10,951,680 (IPR2024-00046 and IPR2024-00516); and 11,470,138 (IPR2024-00044 and IPR2024-00512). The Board has instituted review of all challenged claims in IPR2024-00044, IPR2024-00045, IPR2024-00046, and IPR2024-00146. The Board has denied institution in IPR2024-00047, IPR2024-00048, and IPR2024-00147. The Board has not yet issued an institution decision on the remaining listed IPR petitions.

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

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Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney from Petitioner is attached. Petitioner consents to electronic service at the email addresses listed above. The Director is authorized to charge the fee specified by 37 C.F.R. § 42.15(a) to Deposit Account No. 506269.

III. CERTIFICATION OF GROUNDS FOR STANDING

Petitioner certifies that the '798 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 1-9, 11-19, and 21-24 based on the grounds below.

Ground	Reference(s)	Challenged Claims	Basis
1	Ogdon and Allen	1-9, 11-19, and 21-24	103
2	Ogdon and Allen and SMIL 2.0	1-9, 11-19, and 21-24	103
3	Ogdon and Allen and Shteyn	16	103

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

V. '798 PATENT

A. Summary

The '798 Patent (application no. 17/962,231) was filed on October 7, 2022 and issued on June 13, 2023. EX1001, Cover. It purports to relate to “multi-bitrate content streaming,” such as video, over the Internet. EX1001, Abstract, 1:34-37. The '798 Patent describes “a receiving module” to “capture media content,” a “streamlet module” to “segment the media content and generate a plurality of streamlets,” and “encoding module” to “generate a set of streamlets” such that the set of streamlets

has a plurality of streamlets “having identical time indices and durations” and “a unique bitrate.” *Id.*, Abstract.

One embodiment of the system of the '798 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, 6:36-54. The '798 Patent describes encoding the same content file 200 into at least three different “quality” streams:

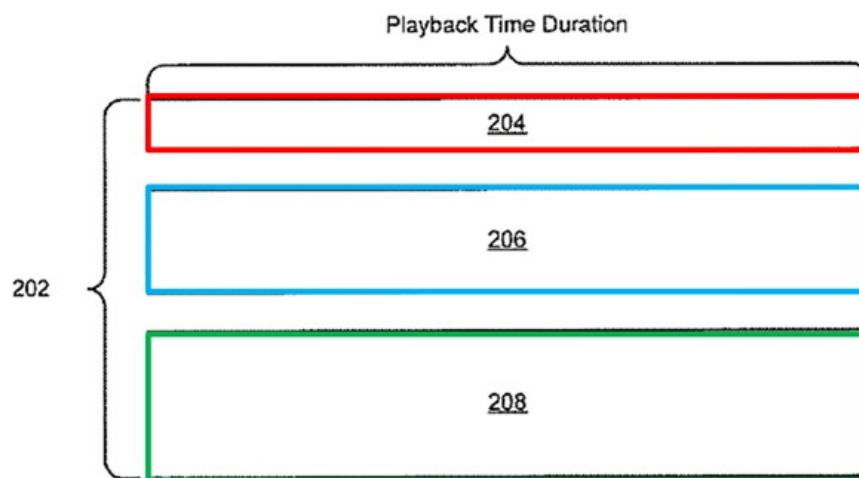


FIG. 2b

Id., FIG. 2b (annotated, low quality (red, 204), medium quality (blue, 206), and high quality (green, 208)), 7:28-34.

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.*, 7:34-39.

Each stream (204, 206, and 208) is also “divided into a plurality of source streamlets 303” 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 00:002, and so on.” *Id.*, 7:40-52.

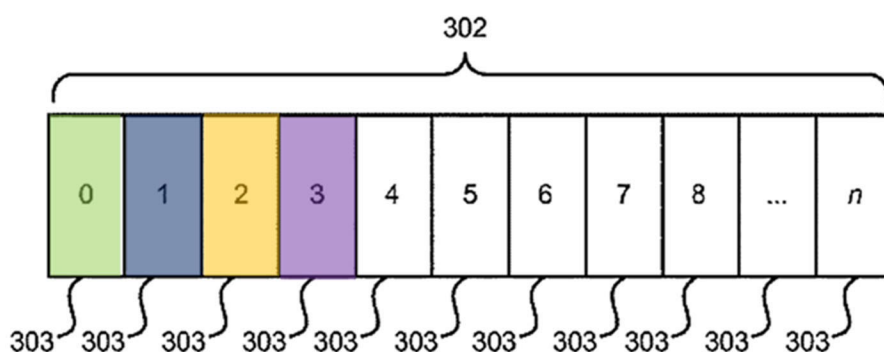


FIG. 3a

Id., FIG. 3a (annotated).

These streamlets form “sets” of streamlets 306 wherein a “set” is “a group of streamlets having identical time indices and durations but varying bitrates.” *Id.*, 7:60-62.

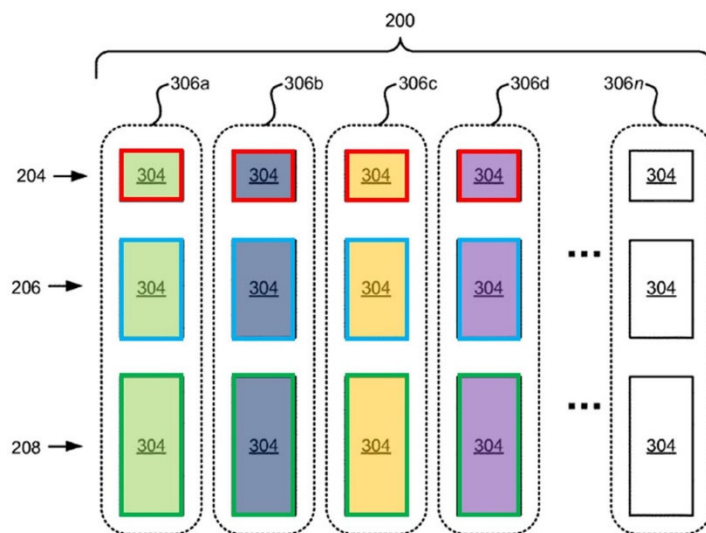


FIG. 3b

Id., FIG. 3b (annotated, showing low, medium, and high quality streamlets in each “set” of streamlets” 306a-d).

These sets of streamlets are stored in a streamlet database 408 and then a “client module 114 may request streamlets 304 using HTTP from the web server 116” or “a plurality of web servers 116.” *Id.*, 9:4-7, 9:34-44. Further, the ’798 Patent explains that the invention may be used to stream “live” content files on a short delay. *Id.*, 10:48-60.

To stream content, the client module 114’s “agent controller module 702 is configured to select a quality level of streamlets to transmit to the viewer” and “requests lower or higher quality streams based upon continuous observation of time intervals between successive receive times of each requested streamlet.” *Id.*, 13:5-28.

B. Prosecution History

The '798 Patent was filed as Application No. 17/962,231 on October 7, 2022. EX1002, 175. On January 5, 2023, Applicant filed a terminal disclaimer to obviate a double patenting rejection over prior patent 11,470,138. *Id.*, 183-184. On January 30, 2023, the Examiner issued a Notice of Allowance. *Id.*, 203.

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, 2), but 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, ¶41. A higher level of education or specific skill might make up for less experience, and vice-versa. *Id.*

VII. CLAIM CONSTRUCTION

Family members of the '798 Patent were asserted in the International Trade Commission (“ITC”) in Investigation No. 337-TA-1265 (ITC) (“the ITC Investigation”). Petitioner was not involved in the ITC Investigation.

Petitioner submits that, for purposes of institution, most terms require no construction. However, Petitioner acknowledges that in the ITC Investigation between Patent Owner and iFIT Inc. asserting family members of the '798 Patent, the Chief Administrative Law Judge (“ALJ”) construed “streamlet” as “any sized portion of the content file.” EX1009, 38-43. The ALJ also construed “low quality stream,” “medium quality stream,” and “high quality stream” under their plain and ordinary meaning. *Id.*, 46-53. The ALJ also found that “end user station” and “content player device” required no construction. *Id.*, 71.

Additionally, Petitioner submits that “virtual timeline” may require construction. The '798 Patent describes a “virtual timeline” as “a file that is configured to define a playlist for a user to view” which “may indicate that the publisher desires a user to watch a first show QMX 602a followed by QMX 602b and QMX 602c” such that “the publisher may define a broadcast schedule in a manner similar to a television station.” EX1001, 12:33-45, FIGs. 6a-6c. The '798 Patent further explains that the Quantum Media Extension (QMX) files each “describe an entire content file.” *Id.*, 12:37-38. Thus, Petitioner submits that “virtual timeline” should be construed as “a playlist of entire content files.”

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. Intradent USA, Inc.*, 903

F.3d 1365, 1375 (Fed. Cir. 2018)). Nevertheless, as shown herein, the asserted grounds render claims 1-9, 11-19, and 21-24 of the '798 Patent unpatentable even under the ITC's constructions. By asserting that the '798 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 addition, Petitioner notes that in the ITC Investigation, iFIT proposed a design-around that included performing an initial, adaptive stream selection based on bandwidth. EX1010, 31. According to iFIT, modifying its products in this manner would not infringe because the claims "require repeated and continuous shifting between bitrates during streaming based on ongoing network conditions." *Id.* In response, DISH argued that iFIT's Redesigned Products would still infringe because "this initial adaptive selection by itself plainly meets" limitation 16[h] of the '554 Patent and limitation 10[h] of the '555 Patent. *Id.* Limitation 16[h] of the '554 Patent is identical to limitation 11[D] of the '798 Patent. *Compare id.*, 24 (limitation 16[h]) with Claim Designation 11[D]. Thus, Patent Owner's position is that a single determination and quality level selection, even without subsequent "shifting," meets these limitations.

VIII. OVERVIEW OF THE PRIOR ART

A. State of the Art

The '798 Patent admits in the “Description of Related Art” section that “streaming media” was known, including streaming of “audio/video” where “quality that can be received for real time presentation is constrained by the available bandwidth of the user’s network connection.” EX1001, 1:50-60. The '798 Patent further admits that streaming was used “to deliver content on demand (previously recorded) or from live broadcasts.” *Id.*, 1:59-60.

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 '798 Patent nor was it considered by the ALJ in the ITC action. Petitioner notes that during the ITC Investigation, Respondents included Ogdon in a notice of prior art dated September 10, 2021. EX1012. However, though Applicant (*i.e.*, DISH) submitted the notice of prior art in an IDS as “non-patent literature,” Applicant did *not* cite Ogdon in an IDS for consideration during prosecution of the '798 Patent or during prosecution of any other related patents. The '798 Patent issued on June 13, 2023, over a year after Respondents' notice of prior art including Ogdon was filed with the ITC.

Ogdon discloses a system for distributing a presentation, during the performance of the presentation, over the Internet via web servers 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 a plurality of sequential presentation elements, collections, or subcollections of “one or more segments” where each segment 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 sequential segment (or collection of segments) 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. Allen

Allen (EX1005) was filed on March 15, 2002 and published in English on September 26, 2002. Allen is prior art under at least (pre-AIA) 35 U.S.C. § 102(b). Allen is not cited on the face of the '798 Patent, however United States publication (2004/0117427) which claims priority to Allen is cited on the face of the '798 Patent, but neither were used in any prior art rejections. Allen was also not considered in the ITC action.

Allen discloses streaming media to multiple users and tailoring the delivery stream to the capabilities of the user's system. EX1005, 1:15-21. Allen explains that multi-bitrate streaming was well-known, including encoding copies of a video at multiple quality levels with different bitrates, such as low quality (56 kbps), medium quality (300 kbps) and high quality (600 kbps). *Id.*, 12:1-5.

D. SMIL 2.0

Synchronized Multimedia Integration Language 2.0 ("SMIL 2.0") is an XML markup language for multimedia presentations and was publicly accessible on the World Wide Web Consortium's ("W3C") website at least as of November 9, 2001.

See EX1006 (SMIL 2.0); EX1011 (Wayback Affidavit showing SMIL 2.0 available on November 9, 2001); EX1003, ¶54.

Thus, SMIL 2.0 is prior art under at least (pre-AIA) 35 U.S.C. § 102(b). SMIL 2.0 is not cited on the face of the '798 Patent. Petitioner notes that during prosecution of the '798 Patent, Applicants submitted an article titled “Mobile Streaming Media CDN Enabled by Dynamic SMIL” by Yoshimura. Applicants did not submit the actual SMIL standard, and the article submitted by Applicants does not mention important elements of SMIL such as “<seq>,” “<switch>,” or “systemBitrate” teaching three quality levels (high, medium, and low) and switching to a particular quality level based upon measured system bitrate, which are pertinent to this Petition.

SMIL 2.0 discusses these elements. SMIL 2.0 discloses that, using “<seq>,” a client can request and play media elements one after the other. EX1006, 123-126. SMIL 2.0 further teaches that a client can select different encoded files based on the client’s available bandwidth. *Id.*, 61-63. Specifically, the “<switch>” element can be used to list different quality files with a “systemBitrate,” and, depending on the client’s bandwidth, only one will be selected. *Id.*

E. 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 '798 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 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.

F. Analogous Art

Each prior art reference is analogous art to the claimed invention in the '798 Patent. And each is in the same field of endeavor of client-server media streaming and, more specifically, streaming by a client from a server including having the data stream segmented into a plurality of streamlets at the server side wherein the client requests the streamlets from the server and plays out the media. *Compare* EX1001, Title, Abstract, 1:34-37, 3:7-4:37, FIGs. 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; EX1005, Abstract, 1:10-12:22; EX1006, 61-62, 123-126; EX1016, Abstract, 1:6-14, 2:53-63, 3:44-64, 4:20-31, FIGs. 1-2; EX1003, ¶58.

Additionally, each prior art reference is reasonably pertinent to any purported problem addressed in the '798 Patent. *Id.*; EX1001, title, Abstract, 1:30-2:67; EX1003, ¶59.

IX. SPECIFIC GROUNDS

A. Ground 1: Claims 1-9, 11-19, and 21-24 Would Have Been Obvious in view of Ogdon and Allen

1. Claim 1

- a. 1[Pre]: “A system for adaptive-rate content streaming of digital content playable on one or more end user stations over the Internet, the system comprising:”

Whether or not the preamble is limiting, Ogdon teaches 1[Pre]. Ogdon discloses a system for adaptive-rate content streaming of digital content (video presentation) that is playable on one or more end user stations (client node(s)) over the Internet. EX1004, 7:40-48 (“Client sites 52, where audience members receive a presentation . . . has at least one of a **client node 56**¹ (*e.g.*, a personal computer)” and “may receive **video** (and possibly audio as well) information from a communications network 70 such as the **Internet**”), 8:27-40 (“content webserver 96a, and alternate content web servers 96b” provide “presentation data to client sites 54 requesting such data via client nodes”), 7:53-63 (“client node 56” has “a network interface software package required for receiving, *e.g.*, video presentation

¹ All emphases in prior art citations are added unless otherwise indicated.

information from the communications network 70 . . . Internet” including “a network browser 78 . . . 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”), 3:38-41 (“**dynamically and adaptively** switch between . . . versions of the presentation according to network transmission characteristics at each client network node”), 22:10-23, FIGS. 1-2; EX1003, ¶60.

b. 1[A]: “at least one storage device storing digital content,”

Ogdon teaches 1[A]. Ogdon discloses webserver(s) storing digital content. EX1004, 9:30-31 (“webserver(s) 96 where the content for each presentation will reside”), 9:44-46 (“content manager 104 distributes presentation content (*e.g.*, presentation segments) to the content webserver(s) 96”), 10:7-13, claim 21 (“storing a plurality of segments of a presentation”), FIG. 2C (step 508); EX1003, ¶61.

c. 1[B]: “the digital content encoded at a plurality of different bit rates creating a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream,”

Ogdon in view of Allen teaches 1[B]. Ogdon discloses that the digital content (video presentation) is encoded at a plurality of different bitrates (different versions or quality levels) creating a plurality of streams because Ogdon discloses “[d]ifferent versions of the same presentation” with “different network requirements” such as “a

first version” requiring “a network transmission rate sufficient for real time or animated video” and “another version” requiring “a transmission rate sufficient for graphic slides.” EX1004, 2:8-10, 2:30-66, Abstract (“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”), 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”); EX1003, ¶¶62, 63.

To the extent Ogdon does not explicitly teach encoding each of a low quality stream, a medium quality stream, and a high quality stream, a POSITA would have been motivated to combine Ogdon with Allen to arrive at this limitation. Allen teaches that it was known to encode video content into at least three different quality levels (or bitrates) for streaming in order to allow streaming to various clients with different network requirements including, for example, a first (low) quality level (at 56 kbps), a second (medium) quality level (at 300 kbps), and a third (high) quality level (at 600 kbps). EX1005, 12:1-5; EX1003, ¶¶64.

A POSITA would have been motivated to encode the video presentation of Ogdon, including each sequential segment of the video, into each of a low quality, medium quality, and high quality level bitrate stream, as taught by Allen, because providing three different quality levels (low at 56 kbps, medium at 300 kbps, and high at 600 kbps) would enable user client nodes with a wide variety of network bandwidth requirements to stream the video presentation—a stated goal of Ogdon. EX1004, Abstract (“client network nodes with varying available network bandwidths can be utilized for synchronously and simultaneously performing the presentation”); EX1003, ¶65. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and Allen are drawn to similar systems of client-server based streaming and because simply encoding another copy at an additional quality level would have been a simple and straightforward modification for a POSITA. *Id.*

- d. **1[C]: “wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets encoded at a respective one of the plurality of different bit rates, each group of streamlets comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;”**

Ogdon in view of Allen teaches 1[C]. *See* 1[B].

Ogdon further discloses that each stream comprises a group (elements, collections, or subcollections) of streamlets (segments) encoded at a respective one

of the bit rates. 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.**”), 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, ¶66.

Ogdon further discloses that each group comprises at least first and second streamlets (segments) and that each of the streamlets (segments) corresponds to a portion of the video because Ogdon discloses that each “subcollection of segments (*i.e.* presentation elements) [are] ordered according to their presentation sequence,” (EX1004, 2:44-45) and that the presentation is “an ordered series of presentation segments” (*id.*, 3:46-47). *See also id.*, 3:24-63, 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”). Thus, Ogdon discloses, or renders obvious, at least a first and a second streamlet (segment) corresponding to different portions of the video presentation; EX1003, ¶67.

Additionally, as explained above in 1[B], Allen teaches encoding the same video at low, medium, and high quality levels. Since Ogdon contemplates a live video presentation that is segmented and stored at various quality levels (EX1004, Abstract, 1:62-2:1, 6:2-5, 10:7), a POSITA would have been motivated to encode each recorded video segment of Ogdon into each quality level in parallel in real-time prior to storing at the web servers (see 1[A]). EX1003, ¶68; *see also* EX1005, 5:15-21 (“considerable technology has developed for capturing analog video . . . then digitizing and encoding the video signal for streaming distribution over the Internet”), 3:16-18 (“redigitized video is then simultaneously processed in a plurality of encoders” to “provide output in a particular popular format and bit rate”). A POSITA would have understood this to be a convenient and practical way to generate different quality levels for each segment in real-time for distribution to client nodes. EX1003, ¶68. A POSITA would have had a reasonable expectation of success with such a modification because Ogdon teaches corresponding segments at different quality levels and a POSITA would have known how to encode each raw video segment into a corresponding quality level (bitrate) on a segment-by-segment basis in parallel. EX1003, ¶69.

- e. **1[D]: “wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and”**

Ogdon in view of Allen teaches 1[D]. As explained above, Ogdon in view of Allen teaches encoding a high quality stream at a bitrate of 600 kbps. *See* 1[B]; EX1003, ¶70.

- f. **1[E] “wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first temporal portion of the digital content in each of the first bit rate stream, the second bit rate stream, and the third bit rate stream, and wherein the first streamlet of the first bit rate stream encodes the same first temporal portion of the digital content at a different bit rate than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream.”**

Ogdon in view of Allen teaches 1[E]. *See* 1[B]-1[C].

Ogdon further discloses that the first streamlet (segment) of each of the groups of streamlets has the same first duration and encodes the same (or equal) first temporal portion of the video in each of the three bit rate streams, and wherein the first streamlet of the first bit rate stream encodes the same first portion of the video at a different bitrate than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream. EX1004, 2:49-55 (“corresponding segments (or subcollections thereof) in different versions have approximately the same presentation duration” so 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.”).

Additionally, Ogdon states that each corresponding segment at various versions should serve as “replacement” for one another and that the durations are “approximately the same presentation duration.” A POSITA would have understood this teaching of “approximately the same” duration not to be limited to only durations that are close but not exactly the same, but rather encompassing durations that are either the same, or approximately the same—especially given additional evidence from Ogdon’s provisional application and file history as discussed below. EX1003, ¶72. Thus, Ogdon discloses that each corresponding version of each segment is the same digital content and same duration because they are replacements for one another. A POSITA would have understood this disclosure to teach an equal duration in order to allow alternative versions of each segment to serve as a “replacement” for each other to provide seamless streaming for the user. *Id.*

Further, the provisional application of Ogdon (U.S. 60/041,770) also discloses that “corresponding presentations segments in the collection have identical audio portions.” EX1014, 35 (claim 25). A POSITA would have understood this disclosure to teach that corresponding alternate video presentation segments can each have identical audio portions, which would mean that the alternate video presentation segments would also have identical (*i.e.*, same or equal) durations. EX1003, ¶73.

And during prosecution of the Ogdon patent, the Applicant characterized the Ogdon invention as having different versions “with identical (and/or content corresponding) portions of the presentation.” EX1015, 239. A POSITA would have considered this a further teaching of identical (*i.e.*, same or equal) time durations for each corresponding video segment version. EX1003, ¶73.

Additionally, as described above with respect to limitation 1[C], a POSITA would have been motivated to encode each segment of Ogdon into each corresponding quality level bitrate in real-time—which would generate corresponding segments of equal duration. EX1003, ¶74.

To the extent it is found that Ogdon does not disclose that the first streamlets of each of the three bit rate streams each has an equal playback duration, a POSITA would have been motivated to make all of the corresponding segments in each version an equal duration of time to simplify the system and so that each corresponding streamlet in each version could serve as a replacement for that portion of presentation content so that when switching to a different version during the presentation the user still experiences a seamless presentation. Having corresponding streamlets across different versions be of different playback durations would complicate the presentation of video and may result in an undesirable viewing experience because it would prevent seamless streaming when switching quality levels if playback commences with the beginning of each version file. EX1003, ¶75.

A POSITA would have had a reasonable expectation of success with such a modification because it would have been a straightforward and simple modification to make each segment an equal duration. *Id.*

2. Claim 2

- a. 2[A]: “The system of claim 1, further comprising: a plurality of servers located at different locations across the Internet, each server configured to:”**

Ogdon in view of Allen teaches 2[A]. Ogdon discloses a plurality of servers located at different locations across the internet (webserver 96a and webserver 96b). EX1004, 8:27-31 (“Content Webservers 96: One or more content network server sites 96 (also denoted content webserver 96a, and alternate content webserver 96b) for providing presentation data to client sites 54 requesting such data via client notes 56.”); EX1003, ¶76.

- b. 2[B]: “receive at least one streamlet request over one or more network connections from one or more end user stations to retrieve the first streamlet storing a portion of the digital content, wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the streams;”**

Ogdon in view of Allen teaches 2[B]. *See* 1[B]. Ogdon discloses that the content webserver(s) (96) are each configured to receive at least one streamlet (segment) request over one or more network connections (network 70) from the one

or more end user stations (client node(s) 56) to retrieve the first streamlet storing a portion of the video. EX1004, 6:41-44 (“each client node to request presentation content from a given set of communications network servers rather than having such servers push presentation content to the client node”), 7:10-13 (“the present invention employs a ‘client-request’ technology, where each presentation member’s browser requests information from a communication network server”), 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”), 19:54-59 (“the client presentation software 88 is instructed by the presentation controlling host 200 . . . to retrieve and cache, via network 70, one or more initial presentation segments from identified content webserver 96 where the presentation segments have been pre-stored.”), 21:40-45 (“host 200 sends one or more commands to each copy of the client presentation software 88 indicating both the next collection of segments to be retrieved by the client nodes and the network 70 addresses of the primary and alternate webserver 96 from which to retrieve the segment collection.”), 22:12-17 (“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 webserver 96 to select an appropriate content

webserver and an appropriate version of the next collection of segments to be retrieved.”); EX1003, ¶77.

Ogdon further discloses that the at least one streamlet request from the one or more end user stations (client node(s) 56) includes a request for a currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the client to select a higher or lower bitrate copy of the streams. EX1004, 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.”), 23:51-24:6, 24:50-55 (“Accordingly, 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 usually resulting in selection of alternative segment collections that are smaller.”); *see* 1[B]; EX1003, ¶78.

As explained above, Patent Owner asserts that a single “initial adaptive selection” meets this limitation. *See* Section VII.

- c. **2[C] “retrieve from the at least one storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and”**

Ogdon in view of Allen teaches 2[C]. *See* 1[B]. Ogdon discloses that the webserver(s) 96 retrieve from the storage device the requested streamlet (segment) from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream. EX1004, 19:54-67 (client nodes “retrieve elements or subcollections from “content webserver(s) 96 where the presentation segments have been pre-stored”); 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); EX1003, ¶79.

- d. **2[D]: “send the retrieved first streamlet from the currently selected one of the different copies to the requesting one of the end user stations over the one or more network connections.”**

Ogdon in view of Allen teaches 2[D]. Ogdon discloses sending the retrieved first streamlet from the currently selected one of the different copies (of the first, second, and third bitrate streams) to the requesting one of the end user stations (client node 56) over the one or more network connections. EX1004, 7:59-63 (“client presentation software system 88 [] coordinates with the browser 78 for requesting,

receiving and displaying presentation segments (from the network 70) as appropriate during the presentation”), 24:48-49, 25:25-27; *see* 1[B]; EX1003, ¶80.

3. **Claim 3: “The system of claim 2, wherein the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the same second portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.”**

Ogdon in view of Allen teaches claim 3.

Ogdon also discloses that the second streamlet (segment) of each of the groups of streamlets has the same second duration and encodes the same second portion of the digital content in each of the first bit rate stream, the second bit rate stream, and the third bit rate stream, and wherein the second streamlet of the first bitrate stream has the same bitrate as the first streamlet of the first bitrate stream. *See* 1[B]; EX1004, 2:49-55 (“corresponding segments (or subcollections thereof) in different versions have approximately the same presentation duration” so 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.”). *See* 1[E]; EX1003, ¶81.

Ogdon further discloses that the first and second streamlet of the first bit rate stream have the same bit rate. EX1004, 3:38-63 (“a first client (at a first client node) may experience the presentation as an ordered series of presentation segments,

wherein the **first and second ordered segments are presented in full animation** . . . a second client (at a second client node) may experience the presentation **in a slide show format** from a third content webserver, wherein **the initial two segments presented are corresponding alternative segments** to the first and second segments presented to the first client”); *see* 1[E]; EX1003, ¶82.

4. Claim 4: “The system of claim 3, wherein the first and second durations are different.”

Ogdon in view of Allen teaches claim 4. A POSITA considering Ogdon would have been motivated to make the first and second durations (of the first and second segments, respectively) different. EX1003, ¶83. For example, 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. EX1013, 3:29-54; EX1003, ¶83. Given this knowledge, a POSITA would have been motivated to make a first duration (*e.g.*, of the first segment of a stream) shorter than a second duration (*e.g.*, of the second segment of a stream) because a shorter first segment when requested by the client (*e.g.*, at a low quality) can quickly be downloaded and played back for the user while the client makes a determination of an appropriate quality level to select for the second streamlet based on a bandwidth determination from receiving the first segment. *Id.* In this way, the playback is started after only a short time and quickly adjusted to the most appropriate bandwidth version being played back for the user soon after the streaming begins. *Id.*

Additionally, it would have been “obvious to try” for a POSITA to make the first and second durations (of the first and second segments, respectively) different rather than the same because this would be a POSITA choosing between one of a finite number of possible solutions. EX1003, ¶84. Namely, a POSITA would have only two possible solutions for choosing segment durations: (1) sequential segments (including the first and second segments) have the same duration, or (2) sequential segments (including the first and second segments) each have different durations. EX1003, ¶84. Therefore, it would have been obvious for a POSITA to try making the durations different as one of a finite number of solutions. *Id.* A POSITA would have had a reasonable expectation of success with such modifications because the segments all have some duration and merely adjusting the duration of each segment so that the first segment duration is different from the second segment duration would have been a simple and straightforward modification for a POSITA. *Id.*

5. Claim 5:

- a. 5[A]: “The system of claim 1, further comprising: a first server configured to:”**

Ogdon in view of Allen teaches 5[A]. *See* 2[A].

- b. **5[B]: “receive at least one streamlet request over one or more network connections from the one or more end user stations to retrieve the first streamlet storing the first temporal portion of the digital content, wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the digital content;”**

Ogdon in view of Allen teaches 5[B]. *See* 1[E] and 2[B].

- c. **5[C]: “retrieve from the at least one storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and”**

Ogdon teaches 5[C]. *See* claim 2[C].

- d. **5[D]: “send the retrieved first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream to the requesting one of the end user stations over the one or more network connections.”**

Ogdon teaches 5[D]. *See* claim 2[D].

- 6. **Claim 6: “The system of claim 5, wherein the digital content comprises a live event video of a live event, and the first streamlets of the first bit rate stream, the second bit rate stream, and the third bit rate stream are available before the live event is complete.”**

Ogdon in view of Allen teaches claim 6. Ogdon discloses that the digital content may be a live event video. EX1004, 1:62-2:1 (“the present invention provides interactive and/or real-time presentations to presentation members that are

geographically scattered”), 10:7 (“live presentation”), 6:2-5 (“present invention is capable of delivering an entire collection of presentation segments to a client node while the presentation is being performed”), Abstract (“distributing a performance of a presentation synchronously to a plurality of client nodes” via “the Internet . . . during a performance of the presentation”).

Ogdon also discloses that the first streamlets of each bit rate stream are available before the live event is complete. EX1004, 7:61-63 (“requesting, receiving and displaying presentation segments (from the network 70) as appropriate during the presentation”), 15:52-58 (explaining that data may be available only during a presentation performance), 19:56-59 (“retrieve and cache, via network 70, one or more initial presentation segments from identified content webserver 96 where the presentation segments have been pre-stored”); EX1003, ¶¶ [].

Additionally, Patent Owner admits in the background section of the ’798 Patent that it was known to use streaming “to deliver content on demand (previously recorded) or from live broadcasts.” *See* Section VIII.A; EX1003, ¶90.

7. **Claim 7: “The system of claim 6, wherein the streamlets from the first bit rate stream, the second bit rate stream, and the third bit rate stream of the live event, when played back, are presented in a live stream to a viewer.”**

Ogdon in view of Allen teaches claim 7. Ogdon discloses that the digital content captures a live presentation performance event, and wherein the streamlets

of the different bit rate streams are available to the end user device while the presentation is occurring, *i.e.*, in a live stream. *See* claim 6; EX1003, ¶91.

8. **Claim 8: “The system of claim 7, wherein the first server is further configured to: receive at least one virtual timeline request over the one or more network connections from the one or more end user stations to retrieve a virtual timeline; and send the virtual timeline to the requesting one of the end user stations over the one or more network connections.”**

Ogdon in view of Allen teaches claim 8. Ogdon discloses that the first server (webserver 96) is further configured to: receive at least one virtual timeline (playlist) request over the one or more network connections (network) from the one or more end user stations (client node(s)) to retrieve a virtual timeline; and send the virtual timeline to the requesting one of the end user stations over the one or more network connections. EX1003, ¶92; *See* Section VII (proposed construction for “virtual timeline”).

To the extent “virtual timeline” is construed more broadly than proposed by Petitioner to simply mean any playlist—including a playlist of only segments of content files—Ogdon meets this limitation. Ogdon discloses storing a virtual timeline in the form of “scripts” that function as playlists because Ogdon discloses “ordering of predefined segments (or subcollections thereof) . . . presented and archived, and subsequently represented” and “sequentially-ordered scripts can be created.” EX1004, 3:11-23, 9:27-33 (“content manager system 104 for managing presentation scripts and data” and “distributes presentation data, such as scripting

information for a presentation”). A POSITA would have understood “script” in this context to mean a playlist because it provides, in order, the alternative subcollections of segments for the client nodes to request. EX1004, claim 16 (“one of said first and said alternative subcollections identified in a predetermined script for said presentation”); EX1003, ¶93.

Ogdon further discloses that the host 200 ensures the sequential playback of the streams at appropriate resolutions by sending one or more commands (which may be considered virtual timelines in the form of a playlist) to the client indicating the next ordered collection of segments for the client to request from the servers at resolutions appropriate for the client based upon its network bandwidth. EX1004, FIG. 2C (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 from one or more presentation versions for presenting at the client node and (B) a list of network 70 addresses (URLs) of the content webserver(s) 96 from which this next collection of segments can be retrieved”), 3:24-63 (host transmit “presentation controlling commands to the client nodes so that there is retrieval of the presentation segments from one or more versions of the one or more network content server nodes depending on, for example, performance characteristics of network transmissions” and clients receive “the ordered segments” requested and obtained from the webserver(s)).

Ogdon further describes such commands as a virtual timeline (playlist) because the “host 200 designates time according to at least one of the following categories: . . . a specific time interval indicated in a script command for the presentation, *e.g.*, a ‘virtual time’ command as indicated by commands (rows) of the script shown in FIG. 3.” EX1004, 22:10-47, FIG. 3, 25:63-26:14; EX1003, ¶95.

To the extent Petitioner’s proposed construction is adopted and “virtual timeline” means “a playlist of entire content files,” Ogdon teaches this limitation under this interpretation too. For example, Ogdon teaches a virtual playlist (script) scheduling sequential full presentations with scheduled show times because Ogdon discloses that a host “receives content webserver 96 identifications, and presentation script identifications from a show scheduler 204” which “provides the functionality of the present information for scheduling presentation performance times” and “the show scheduler 204 provides the pre-show control 136 with scheduled show times and dates.” EX1004, 12:9-19; 25:43-44 (“a single script may be used for a plurality of related presentations”).

Thus, based on the above disclosures of Ogdon, a POSITA would understand that Ogdon teaches the server receiving at least one virtual timeline request over the one or more internet connections from the one or more end user stations to retrieve a virtual timeline and sending the virtual timeline to the requesting one of the end user stations over the one or more network. EX1003, ¶97.

9. Claim 9: “The system of claim 1, further comprising: an encoding module configured to receive the digital content and encode the streamlets of the first bit rate.”

Ogdon in view of Allen teaches claim 9. Ogdon discloses an encoding module configured to receive the digital content (video presentation) and encode the streamlets (segments) of the first bit rate. EX1004, 2:13-3:8 (“different versions of the presentation may be accessed synchronously from one or more of the network server nodes . . . it is an aspect of the present invention to provide corresponding alternative segments (or subcollections thereof) having substantially different network transmission requirements”).

The '798 Patent discloses that “encoding module 406 may utilize encoding schemes such as DivX®, Windows Media Video 9®, Quicktime 6.5 Sorenson 3®, or Quicktime 6.5/MPEG-4®.” EX1001, 9:4-12. Additionally, Allen teaches an encoding module for encoding digital content (*i.e.* digitized video) into popular formats and bit rates. EX1005, 5:15-21 (“considerable technology has developed for capturing analog video . . . then digitizing and encoding the video signal for streaming distribution over the Internet”), 3:16-20 (“redigitized video is then simultaneously processed in a plurality of encoders” to “provide output in a particular popular format and bit rate . . . the encoding would occur at the time requested, or the content could be pre-stored in a variety of formats and bit rates.”), 12:2-5. Allen also explains that “[a] number of encoders are commercially available”

for streaming media including “Microsoft® Media, Real® Media, or Quicktime®.” *Id.*, 5:18-20, 12:2-5. Based on these teachings of known encoding formats and methods from Allen, a POSITA considering Ogdon would have known to use such existing encoding schemes in an encoding module configured to receive the digital content and encode the streamlets of the video presentation into the first bit rate. A POSITA considering Ogdon would have been motivated to use these programs because they were well-known and commercially available tools to encode segments of digital content. And a POSITA would have had a reasonable expectation of success with such a combination because these encoding schemes were available for the specific purpose of encoding segments of digital content. EX1003, ¶99.

10. Claim 11:

a. 11[Pre]: “An end user station comprising:”

Whether or not the preamble is limiting, Ogdon teaches 11[Pre]. Ogdon discloses an end user station (client node(s) 56). EX1004, 7:40-48 (“Client sites 52, where audience members receive a presentation . . . has at least one of a client node 56 (*e.g.*, a personal computer)”); *see* 1[Pre]; EX1003, ¶100.

b. 11[A]: “a processor;”

Ogdon teaches 11[A]. Ogdon discloses a processor. EX1004, 7:45 (“client node 56 (*e.g.*, a personal computer)”). A POSITA would have understood that a “personal computer” discloses a processor because a computer requires a processor to perform computing functions.

A POSITA would also have been motivated to include a processor in the client node of Ogdon's system in order to perform the required functions for streaming a video presentation and displaying the video to the user at the client site. Processors were well known in the art. EX1003, ¶101. A POSITA would have had a reasonable expectation of success with such a modification because modifying the personal computer of Ogdon to include a processor would have been a routine exercise for a POSITA. EX1003, ¶102.

- c. **11[B]: “a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the processor to:”**

Ogdon teaches 11[B]. Ogdon discloses a digital processing apparatus memory device comprising non-transitory machine-readable instructions (software package) that, when executed, causes the processor to perform functions, such as receiving video presentation information. EX1004, 7:45 (“client node 56 (*e.g.*, a personal computer)”), 7:53-63 (“client node 56” has “a network interface software package required for receiving, *e.g.*, video presentation information from the communications network 70 . . . Internet” including “a network browser 78 . . . 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”).

A POSITA would have understood that a client node personal computer running software, as disclosed in Ogdon, discloses a digital processing apparatus memory device comprising non-transitory machine-readable instructions (software) that, when executed, cause the processor to perform functions. EX1003, ¶104.

To the extent it is found that Ogdon does not disclose this limitation, a POSITA would have been motivated to include a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the processor to perform functions in order to allow the client node to execute programs to request, receive, and play back the video presentations. EX1003, ¶105. A POSITA would have had a reasonable expectation of success with such a modification because personal computers require such memory for executing instructions (software) and modifying Ogdon to include such a memory with instructions would have been a routine exercise for a POSITA. EX1003, ¶105.

d. 11[C][1]: “establish one or more network connections between the end user station and at least one server,”

Ogdon teaches 11[C][1]. Ogdon discloses establishing a network connection between the end user station (client node(s)) and at least one server (webserver(s)) because at least one connection is necessary for the client module to retrieve elements from the web servers. 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, 19:53-58, claim 7; EX1003, ¶106.

- e. **11[C][2]: “wherein the at least one server is configured to access at least one of a plurality of groups of streamlets of digital content;”**

Ogdon teaches 11[C][2]. Ogdon discloses that the at least one server (webserver(s)) is configured to access at least one of a plurality of groups (collections or subcollections) of streamlets (segments) of digital content (presentation). EX1004, 9:30-31 (“webservers 96 where the content for each presentation will reside”), 9:44-46 (“content manager 104 distributes presentation content (*e.g.*, presentation segments) to the content webservers 96”), 2:43-49; EX1003, ¶107.

- f. **11[C][3]: “wherein the digital content is encoded at a plurality of different bit rates to create a plurality of streams including at least a first bit rate stream, a second bit rate stream, and a third bit rate stream,”**

Ogdon in view of Allen teaches 11[C][3]. *See* 1[B].

- g. 11[C][4]: “wherein each of the first bit rate stream, the second bit rate stream, and the third bit rate stream comprises a group of streamlets encoded at the same respective one of the different bit rates, each group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;”**

Ogdon in view of Allen teaches 11[C][4]. *See* 1[C].

- h. 11[C][5]: “wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and”**

Ogdon in view of Allen teaches 11[C][5]. *See* 1[D].

- i. 11[C][6]: “wherein the first streamlets of each of the first bit rate stream, the second bit rate stream and the third bit rate stream each has an equal playback duration and each of the first streamlets encodes the same portion of the digital content at a different one of the different bit rates;”**

Ogdon in view of Allen teaches 11[C][6]. *See* 1[E].

- j. 11[D]: “determine whether to select a higher or lower bit rate copy of the stream and based on that determination, select a specific one of the first bit rate stream, the second bit rate stream, and the third bit rate stream;”**

Ogdon in view of Allen teaches 11[D]. *See* 11[C][3].

Ogdon further discloses selecting a specific one of the bit rate streams based upon a determination (*e.g.*, based on network data transmission characteristics at the client node(s)) by the end user station (client node) to select a higher or lower bitrate version of the streams. EX1004, 7:10-13 (“the present invention employs a

‘client-request’ technology, where each presentation member’s browser requests information from a communication network server”), 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”), 21:40-45 (“host 200 sends one or more commands to each copy of the client presentation software 88 indicating both the next collection of segments to be retrieved by the client nodes and the network 70 addresses of the primary and alternate webserver 96 from which to retrieve the segment collection.”), 22:12-17 (“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 webserver 96 to select an appropriate content webserver and an appropriate version of the next collection of segments to be retrieved.”), 24:50-55 (“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 usually resulting in selection of alternative segment collections that are smaller.”), Abstract (“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”), 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”), 6:41-44, 19:54-59, 23:41-50, 23:51-24:6; EX1003, ¶112.

- k. **11[E]: “place a first streamlet request to the at least one server over the one or more network connections for the first streamlet of the selected stream;”**

Ogdon in view of Allen teaches 11[E]. Ogdon discloses placing a streamlet request to the at least one server over the one or more network connections for the first streamlet of the selected stream. *See* 11[D]; EX1004, 6:41-44 (“each client node to request presentation content from a given set of communications network servers rather than having such servers push presentation content to the client node”), 7:10-13 (“the present invention employs a ‘client-request’ technology, where each presentation member’s browser requests information from a communication network server”), 7:59-63; EX1003, ¶113.

- l. **11[F]: “receive the requested first streamlet from the at least one server via the one or more network connections; and provide the received first streamlet for output of the digital content to a presentation device.”**

Ogdon teaches 11[F]. Ogdon discloses receiving the requested first streamlet from the at least one server via the one or more network connection and provide the received first streamlet for output of the digital content to a presentation device.

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”), 23:45-50; EX1003, ¶114.

11. Claim 12:

- a. **12[A]: “The end user station of claim 11, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:”**

Ogdon in view of Allen teaches 12[A]. *See* 11[Pre], 11[B].

- b. **12[B]: “place a second streamlet request to the at least one server over the one or more network connections for the second streamlet of the selected stream;”**

Ogdon teaches 12[B]. Ogdon discloses this element for the same reasons as described above with respect to the first streamlet request. *See* 11[E]; EX1004, 3:24-63, 6:41-44, 7:10-13, 7:59-63; EX1003, ¶116.

- c. **12[C]: “receive the requested second streamlet from the at least one server via the one or more network connections; and”**

Ogdon teaches 12[C]. Ogdon discloses receiving the requested second streamlet from the at least one server via the one or more network connections. *See* 11[F]; EX1004, 3:24-63 (“a first client (at a first client node) may experience the presentation as an ordered series of presentation segments, wherein the first and second ordered segments are presented . . . [and] wherein the first of the ordered segments is obtained from a first content webserver and the second segment of the ordered segments is obtained from a second content webserver”), 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”), 23:45-50 (“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, ¶117.

- d. 12[D]: “arrange the first streamlet and second streamlet in order of ascending presentation time for output of the digital content to the presentation device.”**

Ogdon teaches 12[D]. Ogdon discloses arranging the first streamlet and second streamlet in order of ascending presentation time for output of the digital content to the presentation device. EX1004, 2:43-61, (“each version of a presentation typically has its subcollections of segments (*i.e.*, presentation elements) ordered according to their presentation sequence”); 3:24-63 (“a first client (at a first client node) may experience the presentation as an ordered series of presentation segments, wherein the first and second ordered segments are presented . . . [and] wherein the first of the ordered segments is obtained from a first content webserver and the second segment of the ordered segments is obtained from a second content webserver”), claim 21 (“there are subcollections of one or more segments, each subcollection having a predetermined presentation order”). Thus, Ogdon discloses,

or renders obvious, at least a first and a second streamlet in order of ascending presentation time. EX1003, ¶118.

12. Claim 13: “The end user station of claim 11, wherein at least some streamlets are requested from the at least one server via a hypertext transfer protocol (HTTP) GET request.”

Ogdon teaches claim 13. Ogdon discloses streamlets requested from the at least one server via a hypertext transfer protocol (HTTP) GET request. Ogdon, 22:48-64 (“the presentation element(s) selected is dependent upon network protocols such as HTTP . . . as the size of the presentation data and the time for retrieval decreases, the present invention tends to use HTTP . . . 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, ¶119.

It was known to a POSITA that HTTP requests are made by a client transmitting GET requests. EX1003, ¶120. The '798 Patent states that HTTP GET requests were “standard.” EX1001, 9:36-39 (“a standard protocol such as HTTP”), 14:13-15 (“generates a standard HTTP GET request”). A POSITA would have been motivated to modify Ogdon to request elements from servers via standard HTTP GET requests because GET requests are one of a finite number of possible request solutions available in the HTTP protocol, and thus one of a finite number of identified predictable solutions for requesting files from a server with a reasonable

expectation of success. EX1003, ¶120. There also would have been a reasonable expectation of success because HTTP is a universally known and used protocol and GET requests are a standard method within that protocol for requesting data. *Id.*

- 13. Claim 14: “The end user station of claim 11, wherein the at least one server comprises at least two servers and wherein at least one streamlet is requested from a first server of the at least one server and at least one other streamlet is requested from a second server of the at least one server other than the first server.”**

Ogdon teaches claim 14. Ogdon discloses at least two servers (server nodes) and wherein at least one streamlet (segment) is requested from a first server and at least one other streamlet is requested from a second server. EX1004, 3:24-63 (“retrieval of the presentation segments from one or more versions of the one or more network content server nodes depending on, for example, performance characteristics of network transmissions”). EX1003, ¶121.

- 14. Claim 15: “The end user station of claim 11, wherein each of the streamlets is requestable by the processor without regard to whether the processor has previously requested other streamlets of the digital content.”**

Ogdon teaches claim 15. A POSITA would have understood that each streamlet is requestable without regard to whether the processor has previously requested other streamlets, because Ogdon discloses the ability to view the digital content as a live event during which an end user may begin watching after the live event starts and thus begin requesting streamlets that are not the initial segments of

the video presentation without first requesting those initial segments. EX1004, 6:2-5 (“present invention is capable of delivering an entire collection of presentation segments to a client node while the presentation is being performed”), Abstract (“distributing a performance of a presentation synchronously to a plurality of client nodes” via “the Internet . . . during a performance of the presentation”). By permitting synchronous viewing of a live event, Ogdon necessarily discloses wherein each streamlet (or segment corresponding to the synchronous live event) is requestable by the processor without regard to whether other streamlets have been requested. *See* 11[A] and 11[E]; EX1003, ¶122.

15. Claim 16: “The end user station of claim 11, wherein at least a plurality of streamlets are separate files stored by the at least one server.”

Ogdon teaches claim 16. Ogdon discloses wherein at least a plurality of streamlets (segments) are separate files stored by the at least one server. Ogdon, 2:66-3:14, 9:30-31, 9:44-46 (“content manager 104 distributes presentation content (*e.g.*, presentation segments) to the content webserver 96”), 10:7-13, 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”); FIG. 3 (“Audio_RaFile” stored on “Server Name” at a specific “Path”);

28:17-18 (“presentation data segment file”); EX1003, ¶123. Thus, Ogdon teaches that the video presentation is made up of a set of segments as files. *Id.*

16. Claim 17:

- a. **17[A]: “The end user station of claim 11, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:”**

Ogdon teaches 17[A]. *See* 11[B] and 12[A].

- b. **17[B]: “place a second streamlet request to the at least one server over the one or more network connections for a second streamlet of a different bit rate stream, wherein the different bit rate stream comprises a different stream than the selected stream;”**

Ogdon teaches 17[B]. Ogdon discloses placing a second streamlet request to the at least one server (network node) over the one or more network connections for a second streamlet of a different bit rate, wherein the different bit rate stream comprises a different stream than the selected stream. *See* 11[E] and 12[B]; EX1004, 3:24-63 (“it is an aspect of the present invention to dynamically and adaptively switch between content webserver and/or versions of the presentation according to network transmission characteristics at each client network node so that the clients at the client nodes have presented to them simultaneously, synchronously and in real time, corresponding (in content) segments of the presentation . . . client may synchronously experience the first segment of the presentation [in full animation] via network transmissions from the first content webserver but subsequently experience the corresponding slide show alternative to the second segment from the

third content webserver due to, for example, network transmission slowdowns”).

EX1003, ¶125.

- c. **17[C]: “receive the requested second streamlet from the at least one server via the one or more network connections;”**

Ogdon teaches 17[C]. *See* 11[F] and 12[C]; EX1003, ¶126.

- d. **17[D]: “arrange the first streamlet and second streamlet in order of ascending presentation time for output of the digital content to the presentation device.”**

Ogdon teaches 17[D]. *See* 12[D].

17. Claim 18:

- a. **18[A]: “The end user station of claim 16, wherein the non-transitory machine-readable instructions further comprise instructions that cause the processor to:”**

Ogdon teaches 18[A]. *See* 11[B] and 12[A].

- b. **18[B]: “determine an anticipated inability to receive the digital content at the second bit rate of the second bit rate stream at a rate sufficient for presenting the digital content as the digital content is received, and in response to the determining the anticipated inability, requesting a third streamlet of the first bit rate stream, the third streamlet immediately subsequently adjacent to the second streamlet of the digital content during presentation.”**

Ogdon teaches 18[B]. Ogdon discloses determining an anticipated inability to receive the digital content (due to, for example, network transmission slowdowns) at the second bit rate of the second bit rate stream at a rate sufficient for presenting

the digital content as the digital content is received, and in response to the determining the anticipated inability, requesting a third streamlet of the first bit rate stream, the third streamlet immediately subsequently adjacent to the second streamlet of the digital content during presentation. EX1004, 3:24-63 (“it is an aspect of the present invention to **dynamically and adaptively switch** between content webserver and/or versions of the presentation according to network transmission characteristics at each client network node so that the clients at the client nodes have presented to them simultaneously, synchronously and in real time, corresponding (in content) segments of the presentation . . . client may synchronously experience the first segment of the presentation [in full animation] via network transmissions from the first content webserver but subsequently experience the corresponding slide show alternative to the second segment from the third content webserver due to, for example, network transmission slowdowns”), 24:18-49 (explaining that the client determines if requested collection of segments cannot be cached in time whether there is time to retry or whether to request a different quality version). EX1003, ¶129. A POSITA would have understood this determination whether or not to retry as determining an anticipated inability to receive the digital content because it is anticipating whether such segments can be requested and downloaded in time for presentation. *Id.* And Ogdon further teaches requesting the next (*i.e.*, immediately

subsequently adjacent) segment collection in such circumstances. EX1004, 23:40-44, 24:28-32; EX1003, ¶129.

- 18. Claim 19: “The end user station of claim 18, wherein the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the same second portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.”**

Ogdon teaches 19. *See* claim 3.

- 19. Claim 21: “The end user station of claim 12, wherein the processor providing the first received streamlet for playback comprises outputting the first streamlet to a presentation device connected to the end user station.”**

Ogdon teaches claim 21. Ogdon discloses wherein the processor (client node such as a personal computer) providing the first received streamlet for playback comprises outputting the first streamlet to a presentation device (presentation software system 88 that coordinates with the browser 78 for requesting, receiving and displaying presentation segments) connected to the end user station (client site 54 has at least one of a client node). EX1004, 7:40-63 (“client site 54 has at least one of a client node 56 (*e.g.*, a personal computer)” and “may receive video (and possibly audio as well)” for playback on “presentation software system 88 that coordinates with the browser 78 for requesting, receiving and displaying presentation segments”); EX1003, ¶131.

20. Claim 22:

- a. **22[Pre]: “A process executable by one or more servers to stream digital content for playback by one or more end user stations, the process comprising:”**

Ogdon teaches 22[Pre]. *See* 1[Pre].

- b. **22[A]: “storing, by the one or more servers, a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream,”**

Ogdon teaches 22[A]. *See* 1[A]-1[B].

- c. **22[B]: “wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets encoded at a respective one of a plurality of different bit rates, each group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;”**

Ogdon teaches 22[B]. *See* 1[C].

- d. **22[C]: “wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and”**

Ogdon teaches 22[C]. *See* 1[D].

- e. **22[D]: “wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first temporal portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the first streamlet of the first bit rate stream having a different one of the different bit rates than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream;”**

Ogdon teaches 22[D]. *See* 1[E].

- f. **22[E]: “receiving at least one streamlet request over one or more network connections from the one or more end user stations to retrieve the first streamlet storing the first temporal portion of the digital content,”**

Ogdon teaches 22[E]. *See* 1[E]; 2[B].

- g. **22[F]: “wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the first bit rate stream, the second bit rate stream, and the third bit rate stream based upon a determination by the end user station to select a higher or lower bit rate copy of the digital content;”**

Ogdon teaches 22[F]. *See* 2[B].

- h. **22[G]: “retrieving from the storage device the requested first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream; and”**

Ogdon teaches 22[G]. *See* 2[C].

- i. **22[H]: “sending the retrieved first streamlet from the currently selected one of the first bit rate stream, the second bit rate stream, and the third bit rate stream to the requesting one of the end user stations over the one or more network connections.”**

Ogdon teaches 22[H]. *See* 2[D].

- 21. **Claim 23: “The method of claim 22, wherein a second streamlet of each of the groups of streamlets each has a same second duration and corresponds to a same second temporal portion of the digital content in the first bit rate stream, the second bit rate stream, and the third bit rate stream, the second streamlet of the first bit rate stream having the same bit rate as the first streamlet of the first bit rate stream.”**

Ogdon teaches 23. *See* 19.

22. Claim 24: “The method of claim 23, wherein the first and second durations are different.”

Ogdon teaches 24. *See* 4.

B. Ground 2: Claims 1-9, 11-19, and 21-24 Would Have Been Obvious in view of Ogdon, Allen, and SMIL 2.0

The sections of Ground 1 (Section IX.A) are incorporated into this section by reference. As explained above in Section IX.A, Ogdon in view of Allen teaches claims 1-9, 11-19, and 21-24. To the extent that Patent Owner argues that Ogdon in view of Allen fails to teach certain limitations, Ogdon in view of Allen and SMIL 2.0 teaches these limitations.

1. Claims 1, 11, and 22

As explained above in Sections IX.A.1, IX.A.10, and IX.A.20, Ogdon in view of Allen teaches all limitations of independent claims 1, 11, and 22.

To the extent it is argued that Ogdon in view of Allen lacks certain limitations, for example that each corresponding first streamlet has the same or equal first duration (as described in limitations 1[E], 11[C][6], 22[D]), SMIL 2.0 teaches these limitations. For example, SMIL 2.0 teaches using a SMIL element called “<switch>” that “allows an author to specify a set of alternative elements encoded at different quality levels from which only the first acceptable element is chosen” EX1006, 61.

SMIL 2.0 also teaches using a SMIL element called “<seq>” which “defines a sequence” such that “media elements play one after the other” (*id.*, 158) and controlling duration of such media elements using the “dur” attribute (*id.*, 125-128).

In one example, SMIL 2.0 teaches providing three sequential media elements and three alternative sequential media elements (annotated below as purple, yellow, and red) each having an equal playback duration of 5 seconds due to the “dur=5s”:

```
<switch>
  <seq systemRequired="BrushMedia">
    <brush dur="5s" color="#0000FF" region="colorbox"/>
    <brush dur="5s" color="#00FF00" region="colorbox"/>
    <brush dur="5s" color="#FF0000" region="colorbox"/>
  </seq>
  <seq>
    
    
    
  </seq>
</switch>
```

Id., 273.

In other words, SMIL 2.0 teaches a first segment and alternative first segment (each annotated as purple) and each with an equal fixed duration of five seconds (and likewise for second and third segments). EX1003, ¶147. A POSITA would have been motivated to ensure that each alternative segment in Ogdon had the same (equal) duration, *e.g.*, 5 seconds as taught by SMIL 2.0, in order to ensure that when a switch is made to an alternative segment the alternative segment is a perfect replacement for preferred segment and so that when switching to a different version during the presentation the user still experiences a seamless presentation. EX1003, ¶147. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and SMIL 2.0 are drawn to similar systems of client-server based streaming including allowing the client to determine which

alternative files to choose based on system attributes and because ensuring each alternative corresponding segment is the same duration would have been a straightforward modification for a POSITA. EX1003, ¶147.

2. Claims 3, 19, and 23

Ogdon in view of Allen and SMIL 2.0 teaches that the second streamlet of each of the groups of streamlets has the same second duration in each of the quality levels for the same reasons as described above with respect to the “first” segment. *See* Sections IX.A.3, IX.A.18, and IX.A.21.

3. Claim 8

As explained above, Ogdon in view of Allen teaches claim 8. To the extent it is determined that Ogdon fails to teach a “virtual timeline” in the form of “a playlist of entire content files,” SMIL 2.0 teaches such limitations. *See* Section VII (proposed construction for “virtual timeline”). For example, SMIL 2.0 teaches generating a playlist of entire content files “vid2.mpg” followed by “vid3.mpg” using the “<seq>” element:

```
<seq>
  
  <video src="vid2.mpg" />
  <video src="vid3.mpg" />
</seq>
```

EX1006, 207.

A POSITA would have been motivated to create a virtual timeline playlist in Ogdon of entire content files, as taught by SMIL 2.0, in order to set out a video

presentation schedule of similar presentations for clients to view in succession. EX1003, ¶150. A POSITA would have had a reasonable expectation of success with such a combination because both Ogdon and SMIL 2.0 are drawn to similar systems of client-server based streaming and generating a playlist of entire content files would have been a straightforward modification for a POSITA. EX1003, ¶150.

C. Ground 3: Claim 16 Would Have Been Obvious in view of Ogdon, Allen, and Shteyn

1. Claim 16

As explained above, Ogdon in view of Allen teaches claim 16. To the extent it is determined that Ogdon fails to teach “separate files,” Shteyn teaches this limitation. Shteyn teaches 1[A][2]. Shteyn teaches “[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. *Id.*, 3:44-56, 1:65-2:7 (“**the content file is split into multiple parts . . . at the server**”), claims 1, 9; EX1003, ¶151.

A POSITA would have been motivated to modify the apparatus of Ogdon such that each segment is stored as a separate file at the at least one server to simplify streaming requests by requesting individual successive files rather than requiring the requests to include byte- or other ranges of the video. EX1003, ¶152. 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 and storing segments as separate files would have been a straightforward modification for a POSITA. EX1003, ¶152.

X. GRAHAM FACTORS (NO SECONDARY CONSIDERATIONS)

The first three Graham factors were discussed for each ground, including 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, Patent Owner cannot show any nexus to the claim language. The '798 Patent was not asserted in the ITC Investigation, but 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 that were asserted in the ITC Investigation 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.

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, none of the above alleged characteristics are claimed in the ’798 Patent. Third, the ALJ’s findings were incorrect because 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).

Further, the purported “unique” 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 discloses upshifting and downshifting quality of the stream in response to, for example, network congestion to ensure a smooth and uninterrupted stream. *See, e.g.*, claim 2[B], 5[B], and 11[D].

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 because 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, e.g.*, Sections EX1004, 14:46-49, 22:48-63; EX1016, 3:4-5, FIG. 2.

XI. DISCRETIONARY CONSIDERATIONS UNDER 314(A) AND 325(D) STRONGLY FAVOR INSTITUTION

A. The *Fintiv* factors strongly favor institution.

Should Patent Owner seek denial under *Fintiv*, Petitioner will seek permission to reply to address the facts and law as they stand at that time. Under the current facts, *Fintiv* is not applicable. There is no trial scheduled in the District Court Litigation.

B. *General Plastic* and *Valve Corp.* strongly favor institution.

Serial petitioning concerns addressed in *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (P.T.A.B. Sept. 6, 2017) (§ II.B.4.i precedential), and *Valve Corp. v. Electronic Scripting Products, Inc.*, IPR2019-00062, Paper 11 (P.T.A.B. April 2, 2019) (precedential), are not at play here. Petitioner has not previously filed an IPR challenging the ’798 patent nor does Petitioner have a significant relationship with any party that previously filed an IPR challenging the ’798 patent. “[W]here, as here, the first and second petitioners are

neither the same party, nor possess a significant relationship under *Valve, General Plastic* factor one necessarily outweighs the other *General Plastic* factors.” *Videndum Prod. Sols., Inc. v. Rotolight Ltd.*, IPR2023-01218, Paper 12 at 6 (P.T.A.B. April 19, 2024).

In any event, Petitioner has not used Patent Owner’s papers or any of the Board’s decisions in the Aylo IPRs challenging this patent as a “roadmap” for crafting the positions presented in this Petition. *General Plastic* at 17. Instead, this Petition sets out identical positions to those asserted by Aylo in PTAB-IPR2024-00043, in which the Board has already instituted review.

C. The *Advanced Bionics* two-part framework strongly favors institution.

Applying the two-part framework from *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH* demonstrates that denial under §325(d) is not appropriate. IPR2019-01469, Paper 6 at 8-9 (P.T.A.B. Feb. 13, 2020). Under part one, the same or substantially the same art or arguments were *not* previously presented to the Office, ending the inquiry in favor of institution. The “new, noncumulative prior art asserted in the Petition” strongly favors IPR. *Oticon Medical AB v. Cochlear Ltd.*, IPR2019-00975, Paper 15 at 20 (P.T.A.B. Oct. 16, 2019) (§§II.B and II.C precedential). Should Patent Owner attempt to analogize any previously considered art or arguments to those presented here, Petitioner reserves the right to respond.

The Board should institute review because the merits are strong and the circumstances here trigger none of the discretionary denial policy considerations. Should Patent Owner raise any discretionary denial theory not addressed above, Petitioner reserves the right to respond before institution.

XII. CONCLUSION

Petitioner requests *inter partes* review and cancellation of claims 1-9, 11-19, and 21-24.

Petition for *Inter Partes* Review of USP 11,677,798

Respectfully submitted,

Dated: May 13, 2024

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Petition complies with the word count limitation of 37 C.F.R. § 42.24(a)(1)(i) because the Petition contains a total of 13,811 words calculated by Microsoft Word's word-count feature. This total excludes the cover page, signature block, and the parts of the Petition exempted by 37 C.F.R. § 42.24(a)(1).

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CERTIFICATE OF SERVICE

The undersigned certifies that a complete copy of this Petition for *Inter Partes* Review of U.S. Patent No. 11,677,798 and all Exhibits and other documents filed together with this Petition were served on the official correspondence address for the patent shown in Patent Center:

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