UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AYLO FREESITES LTD and FUBOTV MEDIA INC.,
Petitioners
v.

DISH TECHNOLOGIES L.L.C.,
Patent Owner

U.S. Patent 10,469,554
Issue Date: November 5, 2019
Title: APPARATUS, SYSTEM, AND METHOD FOR MULTI-BITRATE CONTENT STREAMING

Inter Partes Review No. IPR2024-00045

PETITIONER AYLO FREESITES LTD'S
REPLY TO PATENT OWNER'S RESPONSE

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Patent Trial and Appeal Board
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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Table of Exhibits for U.S. Pat. 10,469,554 Petition for *Inter Partes* Review

Exhibit Number	Description
1001	U.S. Pat. 10,469,554 ("the '554 Patent")
1002	File History of U.S. Pat. 10,469,554
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	<RESERVED>
1017	Declaration of Parker G. Zimmerman in Support of Motion for Admission *Pro Hac Vice*
1018	Lewis, P. H. (1995, February 8). Peering out a "Real time" window. The New York Times, Section D, Page 1, Column 4
1019	Willebeek-LeMair, M. H., Keeranoor G. Kumar, and Ed C. Snible. "Bamba—Audio and video streaming over the Internet." *IBM journal of research and development* 42.2 (1998): 269-280.
1020	Declaration of Dr. Kevin Jeffay from *Amazon.com, Inc. v. WAG Acquisition, LLC*, IPR2022-01430
1021	Deposition Transcript of Robert Drew Major, September 17, 2024

1022	Hudson, Thomas C., Michele Clark Weigle, Kevin Jeffay, and Russell M. Taylor II. "Experiments in best-effort multimedia networking for a distributed virtual environment." In *Multimedia Computing and Networking 2001*, vol. 4312, pp. 88-98. SPIE, 2000.
1023	Declaration of Dr. Kevin Jeffay from *Facebook, Inc. v. Voxer IP LLC*, IPR2021-00112
1024	International P.C.T. Publication WO2002049343A1 ("Leaning")
1025	U.S. Pat. No. 6,389,473 ("Carmel")
1026	U.S. Pat. No. 6,967,963
1027	U.S. Pat. No. 10,225,304
1028	Supplemental Declaration of Dr. Henry Houh
1029	Declaration of Dr. Kevin Jeffay from *Samsung Electronics Co., Ltd. v. Back Hills Media, LLC*, IPR2014-00737
1030	Deposition Transcript of Dr. Kevin Jeffay, October 1, 2024
1031	Realsystem G2 Production Guide (1999)
1032	U.S. Pat. No. 10,469,555
1033	Random House Webster's College Dictionary (1997) available at https://archive.org/details/randomhousewebst00robe
1034	Meriam-Webster's Collegiate Dictionary Tenth Edition (1997)
1035	U.S. Pat. Pub. No. 2005/0262257

Ogdon teaches everything DISH and its declarants describe as the "whole package," "core," and "heart of the claimed invention": adaptive-rate streaming using intelligent clients that determine available bandwidth and request segments from different quality versions of a video stored on ordinary webservers, where each version comprises ordered segments of the same corresponding video content. EX1030, 53:11-54-17; EX1021, 92:4-14; Pet., 20-29, 33-35; EX1028, ¶51. And Allen teaches using well-known encoding techniques to create the multiple versions of the same video at different bitrates. Unable to dispute this, DISH resorts to mischaracterization and misdirection. DISH's arguments fail.

I. STATE OF THE ART

A fundamental premise of DISH's Patent Owner Response (Paper 18, "POR") is DISH's expert Dr. Jeffay's opinion that "[v]ideo streaming was ***extremely rare*** during the 1997 time frame of Ogdon's earliest purported priority date up through the '554 Patent's 2004 priority date," and "[a] POSITA would have understood this and it would inform their reading of Ogdon." POR, 26 (emphasis in original); *see also id.*, 28 ("[A] POSITA would have appreciated the limited availability of video streaming in the 1997-2004 timeframe."). But Dr. Jeffay cannot be trusted. His opinions concerning the state of the art are contradicted by numerous others he has offered in other IPRs.

For example, far from being "extremely rare," Dr. Jeffay opined on behalf of Petitioner Amazon in IPR2022-01430 that "it was ***conventional by 1998*** to stream audio and video from 'both stored and live sources on the Web'" using "***standard*** compression technologies" and "***standard*** HTTP Web server[s]." EX1020, ¶¶75-76.[1] Similarly, Dr. Jeffay opined on behalf of Petitioner Facebook in IPR2021-00112 that "[b]y the late 1990s, server-based video conferencing systems enabling users to receive and display real-time video feeds from multiple senders were ***common in the industry***." EX1023, ¶63. Indeed, "[i]t was ***common*** for video-conferencing systems to adapt the video media delivered to the end user to match the capabilities of the recipient device and/or to account for bandwidth availability between the server and the recipient." *Id.*, ¶64.

In IPR2014-00737, Dr. Jeffay stated on behalf of Petitioner Samsung that in the mid-to-late 1990s, he "***regularly*** used the MBONE to watch and listen to live programming streamed over the Internet." EX1029, ¶15. MBONE stands for "Multicast Backbone" system, and any POSITA will recall the MBONE being used in 1995 to stream a Rolling Stones concert live to 50,000 fans. EX1028, ¶¶17-25; EX1030, 60:10-63:2. Dr. Jeffay admitted on cross-examination here that the live stream of the concert was a "newsworthy event," (EX1030, 63:9-15), yet he made

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[1] All emphases added unless noted.

no mention of the MBONE in his declarations. The Ogdon Provisional discusses the MBONE, which undermines any claim by Dr. Jeffay that a POSITA would not understand Ogdon to include live video streaming. EX1014, 22.

Dr. Jeffay also claims that he agreed to serve as an expert for DISH because he was "impressed by the use of HTTP in [DISH's] ABR Patents" and was "skeptical that effective streaming systems could be developed using HTTP." EX2006, ¶¶47-48. But he expressed no such skepticism when he opined for Facebook that "HTTP has been used as a real-time streaming protocol" since at least 1999 and it was well-known that "HTTP was particularly well-suited for video streaming since by the early-2000's." EX1023, ¶¶60-61. Remarkably, Dr. Jeffay also testified that he was "impressed" by the ABR Patents' disclosure of "encoding a video stream at various bit rates and selecting an appropriate stream for delivery to the end user based on current bandwidth availability on the network." EX1030, 150:21-151:4. ***But he used identical language in IPR2021-00112 to describe systems by RealNetworks and Microsoft in 2001—three years before the ABR Patents***. EX1023, ¶51.

Dr. Jeffay has also written articles confirming that the "1990s saw the advent of multimedia computing and networking" including the ability to "acquire, store and process digitized streams of audio and video in real time" and noting "tremendous increases and availability in network bandwidth" and "streaming media applications on the Internet" during that time. EX1022, 1. This is consistent with

DISH's own exhibit, a 1997 book titled "Video Conferencing and Interactive Multimedia," which describes the meteoric rise of video streaming in the mid-1990s due to interoperability standards and availability of low-cost, large-scale memory.[2] EX2007 at 2, 4-5. DISH's exhibit confirms that by 1997, video streaming was no longer just "a tool for the business elite." *Id.* at 3. DISH and Dr. Jeffay's assertion that video streaming was "extremely rare" at the time of Ogdon through the priority date of DISH's ABR Patents is simply not credible.[3] EX1028, ¶¶17-25.

II. OGDON TEACHES DIFFERENT VERSIONS OF THE SAME VIDEO

DISH argues that Ogdon fails to teach multiple "copies" of the "same" video by arguing that the Board in a different institution decision relating to the '555 Patent "correctly found" that Ogdon does not teach "storing multiple copies of ***the same video***." POR, 5 (citing IPR2024-00146, Paper 9, 40) (emphasis in original). The words "copies" and "same video" do not appear in the claims of the '554 Patent. EX1028, ¶30. To the extent the Board's decision in IPR2024-00146 is relevant, Aylo

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[2] DISH agrees that "video conferencing is a form of video streaming." EX1030, 101:23-102:1.

[3] Dr. Jeffay's opinions should be given even less weight because he applied the wrong legal standard. In his POPR declaration, Dr. Jeffay stated that Aylo's burden was "clear and convincing evidence." EX2001, ¶26. During cross-examination, he repeatedly confirmed that this was the standard Aylo had to satisfy. EX1030, 30:7-31:9, 31:21-32:4, 38:7-11. DISH attempted to rehabilitate Dr. Jeffay on redirect examination, but the fact that there is even a question as to whether he applied the correct legal standard is alarming.

respectfully submits that the Board erred in IPR2024-00146. Ogdon clearly teaches different versions of a video presentation that are copies of the same video at different quality levels; this is not a basis on which to distinguish Ogdon.

Indeed, Ogdon repeatedly teaches that its different video presentation versions are copies of the "same" presentation and each includes segments that "correspond" in content and are "interchangeable" and "replaceable" with one another. *E.g.*, 2:30 ("Different versions of the ***same*** presentation"), 2:49-55 ("any of the ***corresponding*** alternative segments … from different versions can be presented as a ***replacement*** for another such ***corresponding*** segment"); 32:36-38 ("first subcollection is ***replaceable*** with said second subcollection when presenting ***the*** presentation"); 2:36-39 ("each of the one or more presentation versions includes one or more presentation segments … that provide different portions of ***the*** presentation."); 3:38-40 ("it is an ***aspect of the present invention*** to dynamically and adaptively switch between … ***versions*** of ***the*** presentation"), 3:43-44 ("corresponding (***in content***) segments of ***the*** presentation"), 21:33-34 ("***video versions*** of ***the*** presentation"), 30:21-22 ("presenting of a ***same*** corresponding portion of ***the*** presentation"); 22:63-64 ("***interchangeable*** presentation elements").[4]

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[4] DISH falsely claims that "Petitioner's expert was unable to identify any embodiment of Ogdon where different presentation versions included different quality versions of the same video." POR, 34. DISH's citations do not support this

DISH argues that Ogdon only discloses a video version and alternate versions being a "slide show" or "graphic slides" that are "comprised entirely of different content across different 'versions.'" POR, 3-5, 8, 24.[5] But nowhere in DISH's POR does it attempt to address claim 9 of Ogdon, which expressly recites "a first ***video*** portion" and an alternate "second ***video*** portion that ***corresponds in content*** with said first video portion"; and the first and second video portions "have substantially different expected data transmission rates." EX1004, claim 9.[6] Dr. Jeffay addresses claim 9 in a footnote, arguing that the claimed first and second video portions are "different" content (EX2006, ¶60 n.7) even though the claim recites that each video portion "corresponds in content." EX1004, claim 9. When cross-examined on how

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allegation: Dr. Houh was asked to discuss specific examples in Ogdon. EX2009, 86:4-7 ("[W]hat's your understanding of what Ogdon is referring to when he talks about graphic slides?"); 93:16-18 ("So in this example that you were just reading from…"). He was not asked about embodiments related to different quality versions of the same video.

[5] DISH also repeatedly emphasizes Ogdon's use of the word "version" to suggest that this term means that corresponding segments are different content rather than the same content in different qualities. *E.g.*, POR, 3. But the '554 Patent itself uses the word "version" to describe the same content in different qualities. *E.g.*, EX1001, claim 4 ("higher or lower bitrate ***version***").

[6] Claims 6 and 20 of Ogdon provide additional examples of different versions of the same video. EX1004, claims 6, 20. A POSITA would have understood "reduced" and "no motion" videos to refer to low and very low frame rate videos. EX1028, ¶36; EX1030, 293:16-294:1 (Dr. Jeffay describing the MOVE player's emergency mode as "a very low, low resolution, low bit rate, lower motion stream"), 136:19-137:24 (Dr. Jeffay agreeing that reducing the frame rate will result in a video with "reduced motion").

the two video versions recited in claim 9 could be different content but also correspond in content, Dr. Jeffay testified that the second video would be "a shorter video that has the same message as the video in version 1." EX1030, 208:16-209:10. That argument, however, is foreclosed by Ogdon's teachings that the different versions have the same presentation duration and segments that can be replacements for each other. EX1004, 2:49-55.

Ultimately, DISH's and Dr. Jeffay's arguments depend on a very narrow interpretation of the word "corresponding" in Ogdon, where "corresponding" cannot include "same" or "identical" within its meaning. But that interpretation is inconsistent with how a POSITA would have understood "corresponding" in 1997. EX1028, ¶¶29-32. Indeed, contemporaneous dictionaries defined "corresponding" as "***identical*** in all essentials or respects" and defined "same" as "***corresponding***." EX1033, 3; EX1034, 3 (defining "corresponding" as "having or participating in the ***same*** relationship (as kind, degree, position, correspondence, or function)"); EX1033, 4 (defining "same" as "***identical*** with what is about to be or has just been mentioned" and "agreeing in kind, amount, etc.; ***corresponding***.").

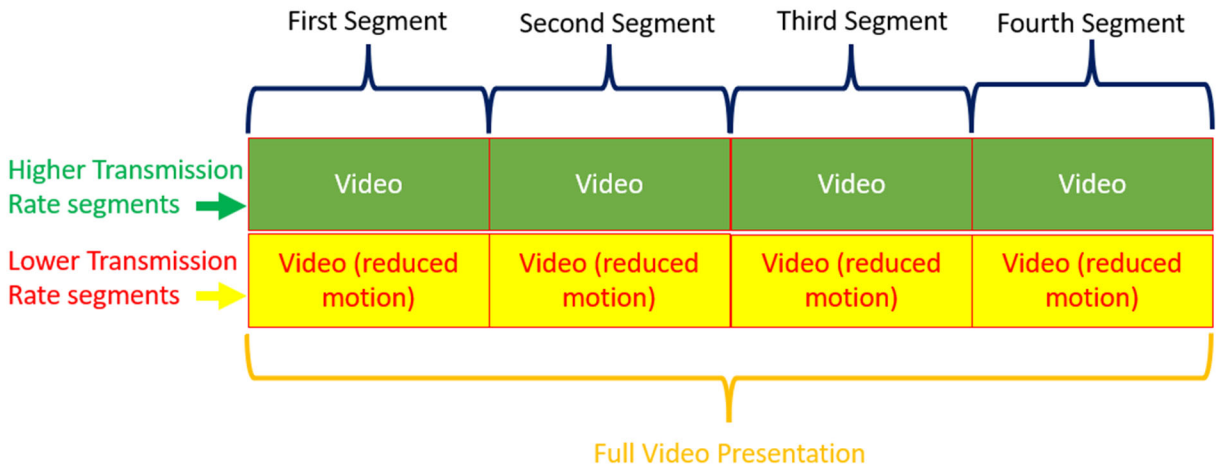
DISH's argument that Ogdon is limited to a video version and an alternate "slide show" version is also unhelpful to it. POR, 8. A POSITA in the 1990s would have understood Ogdon's disclosure of "slide show format" and "slide show alternative" to mean a very low frame rate version of the same video. EX1004, 3:51-

63; EX1028, ¶¶33-34. For example, Allen describes "slide show" as a quality level of a video stream via a "<video-quality>" tag with values "normal, smooth motion, sharp image, ***slide show***." EX1005, 63:13-16. And a 1998 reference relied on by Dr. Jeffay in IPR2022-01430 discloses "[a]t modem speeds, the MPEG-based systems ***revert to slide-show-type video***." EX1019, 270. Dr. Jeffay himself testified that when a user is watching a car race at 30 frames per second and the frame rate drops to one frame per second, the user is "certainly watching the ***same*** race. They are essentially seeing like ***a slide show*** of the race." EX1030, 140:7-141:7.

Even MOVE's internal documents describe an "emergency 'slideshow' mode" implemented by systems relying on RealNetworks' RTP/RTSP streaming protocols. EX2059, 11. Dr. Jeffay admitted that RealNetworks was "a recognized early pioneer" and "leader," and its RealVideo streaming player was well known to POSITAs in 1997. EX1030, 63:22-.65:15. A POSITA would have known that using the "RealVideo encoding tool, you [could] choose to ***encode*** a large ***video*** for low bandwidth ***as a 'slide show,'*** which ***streams*** approximately one frame per second." EX1031, 56. Thus, there can be no reasonable dispute that a POSITA would have understood Ogdon's "slide show" version to be the same video encoded at a very low frame rate for the low bandwidths of the late 90's. EX1028, ¶¶35-39.

DISH fabricated illustrations that purportedly reflect the teachings of Ogdon. POR, 4-5, 14-15, 21-25. But DISH's images ignore Ogdon's disclosures of multiple

versions of the same video content. In contrast, Dr. Houh's illustration below correctly shows what Ogdon teaches and recites in claims 6, 9, and 20.



EX1028, ¶39.

III. OGDON TEACHES "VIDEO" THAT IS "STREAMED"

DISH relies on Dr. Jeffay's opinion that "video" in the '554 Patent means an "integrated stream" of audio and video, and because Ogdon can transmit audio and video separately, it allegedly does not teach streaming video. POR, 25-27 (citing EX2006, ¶¶53-65). Not so. The '554 Patent teaches that video can be streamed separately from audio. EX1001, 7:17-18 ("The content file 200 may comprise uncompressed video and audio, or alternatively, video ***or*** audio"); EX1030, 166:19-167:11. And Dr. Jeffay conceded on cross-examination that DISH's ABR Patents do not require an integrated stream of video and audio. EX1030, 163:1-23. Regardless, Ogdon discloses an integrated stream of video and audio: "both the

video and audio portions of the presentation may be provided solely by a TCP/IP network such as the Internet." EX1004, 2:8-12; EX1030, 169:24-170:13.

DISH also argues that Ogdon does not teach video streaming because the word "stream" does not appear next to the word "video" and because Ogdon discloses an embodiment where video segments are downloaded and stored at the client before playback. POR, 28-29. But this ignores Ogdon's express teaching that video and audio may be transmitted "solely by a TCP/IP network" when "there is sufficient communication bandwidth to synchronize presentation transmissions." EX1004, 2:8-12. That is streaming. Ogdon also teaches that video can be transmitted to clients in the same manner as audio, (EX1004, 2:8-12, 5:16-18, 5:28-36, 7:44-48), and there is no dispute that Ogdon teaches streaming audio (POR, 17).

DISH's argument that "streaming" requires segments to be stored temporarily in a buffer and then "deleted" is also incorrect and not recited in the claims. POR, 28. As the '554 Patent teaches, streaming "refers to technology that delivers content at a rate sufficient for presenting the media to a user in real time as the data is received." EX1001, 1:47-49. Data "***may*** be stored in a memory temporarily until played and then subsequently deleted," but it is not required. *Id.*, 1:49-51. Rather, streaming only requires playback without having to first download the complete media file. *Id.*, 1:58-67 (distinguishing streaming from "[d]ownloading complete media files" before playback); EX1023, ¶42; EX1005, 2:14-16; EX1013, 2:9-13;

EX1021, 90:19-24. Regardless, a POSITA would understand Ogdon to include temporary storage and deletion of segments. EX1028, ¶¶40-45. Indeed, the Ogdon Provisional states: "The data used during the show and ***cached*** by the M.Show Client software is ***deleted*** at the end of the show." EX1014, 15.

IV. OGDON TEACHES "ADAPTIVE RATE" VIDEO STREAMING

The "adaptive-rate" limitation only appears in the preamble of claim 1 of the '554 Patent. Whether or not the preamble is limiting, DISH is wrong that Ogdon discloses an adaptive content system. POR, 43. Ogdon clearly teaches an adaptive-***rate*** system. *E.g.*, EX1004, 3:38-44 ("[I]t is an aspect of the present invention to dynamically and ***adaptively*** switch between … versions of the presentation ***according to network transmission characteristics***."); EX1028, ¶¶46-47. DISH repeats its arguments that Ogdon's segments are not of the same video content, but DISH is wrong as discussed above. *Supra* §II.

V. OGDON TEACHES "A STREAMLET REQUEST" AND SELECTING STREAMS

DISH argues that the claim language "streamlet request" requires "a ***single*** streamlet request" for "a ***single*** streamlet" and Ogdon allegedly requests multiple streamlets in a single request. POR, 40-43. But there is no requirement that "streamlet request" can be for only one streamlet and no more. Indeed, the claim language recites that the "streamlet request … ***includes*** a request for a currently selected first streamlet." *E.g.*, EX1001, claim 7. The word "includes" is not

exclusive. And if there was any doubt, claim 10 of DISH's '555 Patent recites "a streamlet request" yet multiple "requested streamlet***s***" are received. EX1032, claim 10. Regardless, DISH is wrong that "Ogdon never describes requesting anything less than a 'collection or subcollection' of 'segments.'" POR, 40. Ogdon expressly teaches that a requested collection of segments can include "***one*** or more" segments. EX1004, 22:30-33, 21:15; EX1028, ¶¶48-49.

DISH further argues that Ogdon does not make a "select[ion]" from a "plurality of streams" based on its arguments that Ogdon fails to disclose multiple copies of the same video. POR, 44-45. As discussed above, DISH is again wrong. *Supra* §§II-III.

VI. OGDON'S "SEGMENTS" ARE "STREAMLETS"

DISH argues that the "segments" of Ogdon's video presentation are not "streamlets" because the "segments" are not "divided" from a "larger-form video" like a movie.[7] POR, 17. Also wrong. First, the claims do not recite "dividing." The claims only require the segments to make up a video stream. *E.g.*, EX1001, claim 1 ("each [stream] comprising a group of streamlets"). DISH's declarant and named inventor, Mr. Major, agreed that "streamlets" are "segments" (EX1021, 50:11-17;

[7] Contrary to DISH's assertion (POR, 17), division of video into segments was a relatively trivial operation for a POSITA before 2004. EX1028, ¶¶26-28.

53:7-11) and that segments, even from different videos, could be arranged to "make up a larger video presentation" (*id.*, 51:6-14, 51:15-52:5).

Second, Dr. Jeffay admitted that Ogdon "describes ***dividing*** a presentation into different 'segments.'" EX2006, ¶35. He also admitted that the '554 Patent's architecture included "using a web server hosting sets of content files where each set represented ***segments ('streamlets')*** of a ***larger media presentation***." EX2006, ¶46. This is precisely what Ogdon teaches. And DISH's own expert uses "segments" and "streamlets" synonymously.

Third, DISH's argument that Ogdon's segments are each "unique" standalone pieces of content with no relation between segments also is incorrect. POR, 16. Not only do the claims not recite such a requirement, Ogdon repeatedly explains that its segments are "ordered" and collectively make up a larger video presentation. EX1004, 3:11-14, 3:46-50, 18:42-43; EX1028, ¶¶50-52.

VII. OGDON'S SEGMENTS HAVE THE SAME DURATION

DISH does not attempt to address the Ogdon Provisional or File History, which confirm that Ogdon's corresponding segments are the same duration. Pet., 25-27. Rather, DISH argues, without evidence, that the "elements" in Ogdon are like PowerPoint slides that do not have a duration. POR, 12-13, 20, 35. However, the word "PowerPoint" is not used in Ogdon, and the word "slide" appears in the context of "slide show format" and "slide show alternative," which are low

transmission rate versions of video. *Supra* §II. DISH completely ignores Ogdon's teaching that an "element" can be any "combination of one or more of the following types of HTML multimedia data: audio, images, animation or ***video***, wherein such a multimedia element ***plays over a set period of time***." EX1004, 2:66-3:6. And Dr. Jeffay admitted during cross-examination that in 1997, "elements" of a multimedia stream meant "frames of audio and video"—not PowerPoint slides. EX1030, 127:2-20.

DISH's semantics that Ogdon discloses "***approximately*** the same" duration and not precisely the same duration also fails. POR, 36-37. Modifiers like "approximately," "about," and "substantially" are frequently used in patents to include "exactly" and "nearly." *See Haliburton Servs. v. Smith Int'l, Inc*., 2004 WL 305722, at *6 (E.D. Tex. 2004) ("approximately the same" means "nearly or exactly the same"); *Janssen Pharms., Inc. v. Tolmar, Inc*., 2024 WL 834762, at *10 (D. Del. 2024) ("'approximately once a month' as used in the specification … mean[s] that once a month is the ideal timing"). The '554 Patent itself describes a streamlet's duration as "between ***about*** 0.1 and 5 seconds" but claims a precise "range of 0.1 to 5 seconds." EX1001, 3:25-26, claim 5. And DISH's declarant Mr. Major agreed that his use of "substantially the same duration" in his declaration means "precisely the same duration or almost the same duration." EX1021, 96:6-9.

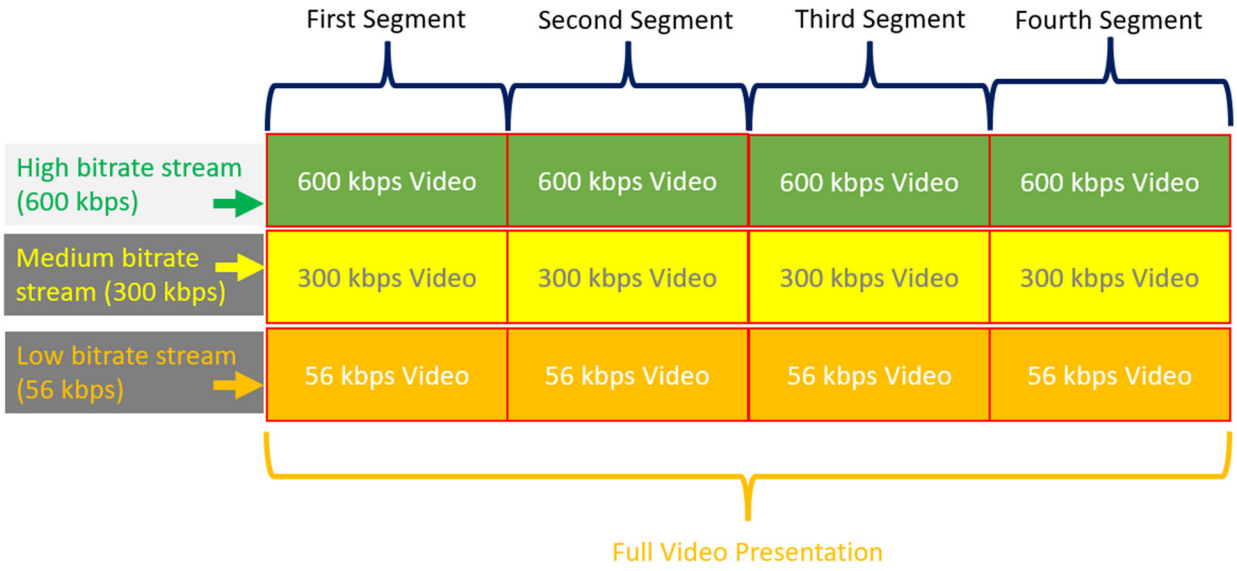
DISH also argues that Ogdon intends for alternative corresponding segments to have different durations because that would somehow provide "advantages" in the system. POR, 36-37. However, DISH cites only to column 6, lines 40-47 of Ogdon, which says nothing about segments being different durations and certainly nothing about this being an advantage. *Id*. In fact, the only advantages mentioned there are (1) client-request and (2) avoiding firewalls with HTTP/TCP—the same advantages touted by the '554 Patent. EX1001, 9:32-45.

Finally, DISH's argument that a presentation leader ***may*** change the script and the presentation midway through is irrelevant because it is only a possibility and not a requirement. POR, 35. Moreover, this is essentially the same as the '554 Patent's example where a "publisher" may set the virtual timeline to "skip" or "loop" portions of the video or "mute" audio in some portions. EX1001, 12:44-13:2; EX1028, ¶¶53-57.

VIII. OGDON IN VIEW OF ALLEN TEACHES THE CLAIMS

As explained above in §§II-VII, Ogdon teaches all limitations that DISH alleges are missing. Furthermore, as the Petition explains—and as the Board found—a POSITA would have been motivated to modify Ogdon based on Allen to encode a video presentation into multiple copies having different quality levels (low,

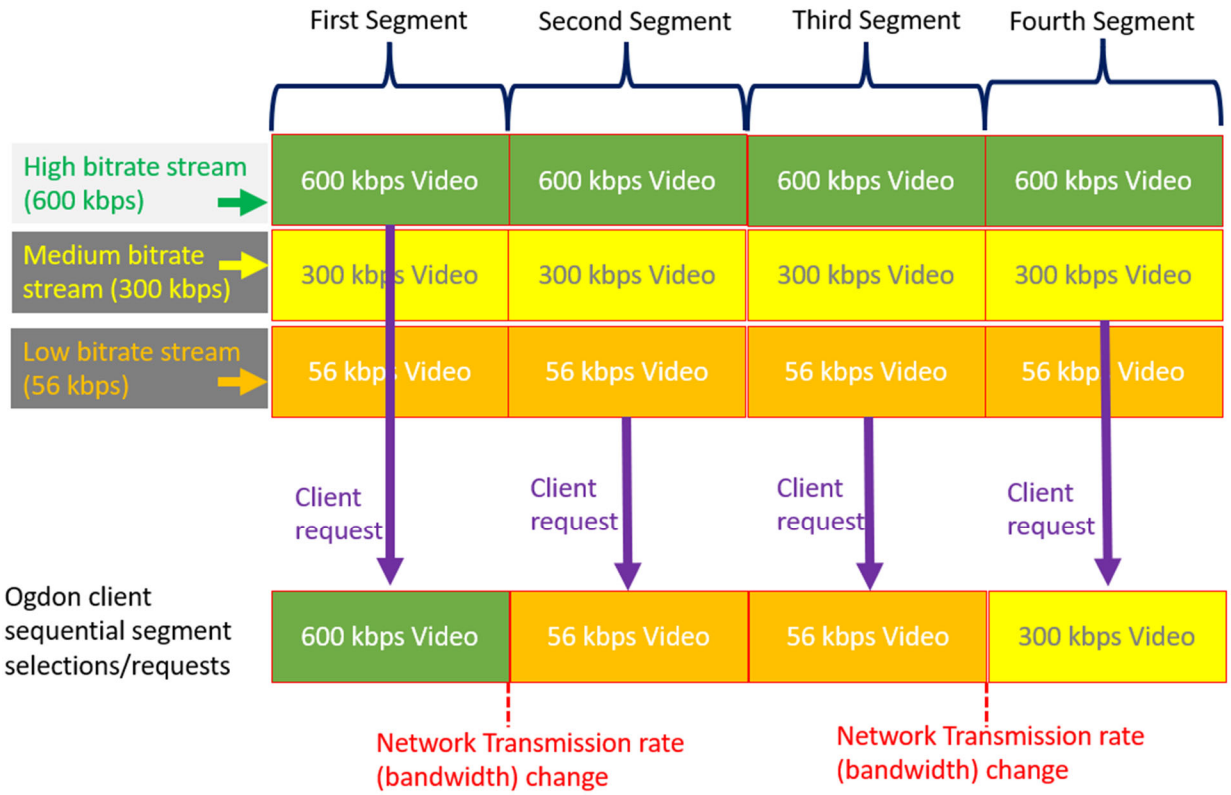
medium, and high). Pet., 22-26; Paper 8, 18-28.[8] An illustration of this combination is shown below. EX1028, ¶¶58-59.



This combination would not render Ogdon unsuitable for its intended purposes, as DISH alleges, because Ogdon is already a client-pull adaptive-rate video streaming system as explained above, and the modification taught by Allen simply encodes three segmented versions of the same video presentation stream. Such encoding, as set forth in the Petition, was well-known to a POSITA. Pet., 21-26; EX1019, 276 ("A video can be partitioned into non-overlapping segments, each segment being treated independently" and encoded independently on "a segment-

[8] While Ogdon in view of Allen clearly teaches multiple copies of the same video (i.e., same content), Aylo submits that Ogdon alone teaches that feature. *Supra* §II.

by-segment basis"). Client requests for segments would happen in the same way as Ogdon already teaches (EX1028, ¶60), as the illustration below shows:



IX. NEITHER OGDON NOR ALLEN TEACH AWAY

DISH claims Ogdon "teaches away" by rehashing its arguments about graphic slides and about Ogdon not providing adaptive-rate video streaming. POR, 24-29. Those arguments are erroneous, as explained above. *Supra* §§II-IV.

DISH's argument that Allen teaches away similarly fails. POR, 29-34. First, the Petition only relies on teachings from Allen's Background, which describes the well-known and "sophisticated" solution of encoding the same video into different bitrate versions (*i.e.*, 600 kbps, 300 kbps, 56 kbps). Pet., 22-26; EX1005, 8-12. The

fact that Allen—a 143-page reference—describes elsewhere certain other methods does not teach away from modifying Ogdon to include Allen's Background teachings of encoding video into different bitrates. *Impinj, Inc. v. NXP USA, Inc.*, 2023 WL 10352284, at *3 (N.D. Cal. 2023) (rejecting that disclosure of improved methods elsewhere in a patent teaches away from Background). Rather, "teaching away requires 'clear discouragement' from implementing a technical feature," which is not present here. *Univ. of Md. Biotechnology Inst. v. Presens Precision Sensing GmbH*, 711 F. App'x 1007, 1011 (Fed. Cir. 2017) (citation omitted); *Novartis Pharma AG v. Regeneron Pharm., Inc.*, 2024 WL 4258368, at *3 (Fed. Cir. 2024) (no teaching away even though the relied-upon teaching was "categorized as 'markedly inferior' to" a preferred design in same reference).

Second, DISH mischaracterizes Allen, asserting that Allen teaches only "a single-bitrate approach." POR, 30-32. Not so. Allen's system still encodes a video into multiple streams and bitrates but moves the encoding process to the "edge" servers closest to users, instead of at servers near the video source. EX1005, 24:19-25:23. Each of the multiple edge encoders of Allen converts the video stream into formats and bitrates matched to each viewer, and, as Dr. Jeffay conceded, unless every viewer had identical devices and network bandwidth (which is extremely unlikely) "you would end up with streams that are in different formats and bit rates." EX1030, 239:20-2. So even beyond its Background section, Allen teaches a

multiple-bitrate approach, and a POSITA would have successfully combined Allen with Ogdon as described in the Petition. Pet., 19-23; EX1028, ¶¶61-62.

X. OGDON TEACHES A PLURALITY OF WEBSERVERS RETRIEVING STREAMLETS FROM A STORAGE DEVICE

As to dependent claim 4, DISH argues that Ogdon fails to teach "a plurality of web servers" retrieving streamlets from "the same central storage device." POR, 45-46. But DISH's arguments again are wrong and contrary to the claim language. Claim 4 recites "the storage device," referencing the "***at least one*** storage device" in claim 1. Thus, the claim clearly contemplates the plurality of web servers retrieving streamlets from one or more storage devices, not "the same central storage device." EX1001, claims 1, 4. DISH also tries to read a "proxy cache" feature into the claim (POR, 46), but the only portion of the '554 Patent DISH relies on states that content "may be replicated to other web servers 116 or ***alternatively*** to proxy cache servers 118" (EX1001, 7:1-3). Proxy cache servers are not required, and Ogdon replicates content to other webservers. EX1028, ¶63.

Regardless, Ogdon teaches a plurality of webservers each pulling from a single storage device. EX1004, claim 31 ("storing a plurality of segments … said segments are network accessible from one or more content supplying network nodes"); *see also id.*, 5:53-65 (describing web servers retrieving segments from a network server in a virtual server collection); EX1028, ¶64.

XI. OGDON TEACHES A "VIRTUAL TIMELINE" REQUESTED BY A CLIENT

DISH argues that "virtual timeline" just means a "playlist"[9] and that Ogdon fails to teach a "virtual timeline" being ***requested*** by a client because the clients do not request "scripts" in Ogdon. POR, 10. DISH argues the host (server) in Ogdon requests scripts from the content manager (server) before providing them to the client. POR, 39. But Ogdon teaches a client request for a virtual timeline in at least the same level of detail as the '554 Patent.

Indeed, the '554 Patent does not disclose how a client makes a virtual timeline request. EX1001, 12:31-13:2. Nor does the '554 Patent explain whether the "virtual timeline" is stored on any server or even transmitted to the client. *Id.*; EX1030, 251:9-252:10 (Dr. Jeffay confirming there is no disclosure concerning how a "virtual timeline" is requested or received between a client or server). When asked about the '554 Patent's lack of disclosure, Dr. Jeffay testified that no description was necessary because it would have been "incredibly straightforward" for a POSITA to configure "a web server configured to receive a virtual timeline request over an internet connection from one or more end user stations." EX1030, 253:10-23. Ogdon discloses a similar architecture with respect to establishing a connection

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[9] To the extent the Board construes "virtual timeline" as requiring a playlist of entire content files, SMIL 2.0 teaches this limitation as set forth in the Petition. Pet., 57-58. DISH does not counter those teachings.

between a client and server (EX1028, ¶67), and thus, it follows that Ogdon also teaches a client requesting, at least indirectly, the virtual timeline from a server in the same way the '554 Patent describes; or, at the least, modifying Ogdon to have the client request the "virtual timeline" instead of the host would have been "incredibly straightforward" and obvious. EX1028, ¶¶65-68.

XII. SMIL 2.0 TEACHES STREAMLETS OF THE SAME DURATION

As explained above, Ogdon teaches streamlets of the same duration. *Supra* §VII. But even if Ogdon's alternative segments are not precisely the same duration, SMIL teaches using the "dur" element to ensure that all interchangeable alternatives of a media are precisely the same duration. Pet., 52-56. DISH does not and cannot counter this point. Instead, it deflects to other disclosures in SMIL to make irrelevant arguments (POR, 47-51). Those arguments do nothing to undermine SMIL's express "dur" teaching. EX1028, ¶69.

XIII. DISH'S EVIDENCE OF SECONDARY CONSIDERATIONS FAIL

A. There is No Nexus Between the MOVE Player and the Claims

DISH argues that the MOVE player embodies the claims and is therefore entitled to a presumption of a nexus.[10] POR, 53-54. However, a nexus cannot be

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[10] DISH does not assert that any product besides the MOVE player embodies or has a nexus with the claims. To the extent DISH argues a nexus with a Sling TV player or other third-party player that allegedly integrates the MOVE player, nexus fails for the same reasons.

established if the evidence of secondary considerations relates to unclaimed features or features available in the prior art. This is particularly so where the evidence of secondary considerations relates to "a 'critical' unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality." *Fox Factory, Inc. v. SRAM*, LLC, 944 F.3d 1366, 1375 (Fed. Cir. 2019). Here, the MOVE player includes such a "critical unclaimed feature"—using multiple parallel TCP connections for requesting streamlets in parallel. MOVE's internal documents describe this feature as the "secret" to the MOVE player. EX2011, 4 ("The secret lies in our use of multiple TCP connections" whereas "[o]ther streaming solutions use a single connection"); EX2059, 11. And DISH's declarant and named inventor Mr. Major agreed this feature was "important" and "was something that improves it significantly."[11] EX1021, 75:24-76:4. However, multiple parallel TCP connections is claimed in a different DISH patent, U.S. Patent No. 10,225,304. EX1027; EX1028, ¶¶71-74.

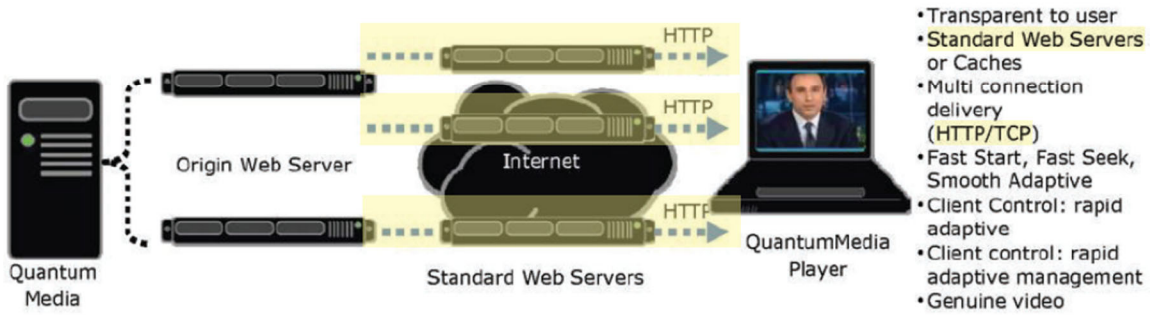
In addition to multiple parallel TCP connections, the MOVE player includes other critical unclaimed features including using HTTP and standard web servers

[11] Dr. Jeffay admitted he did not consider whether the Move player would have been as successful without the use of multiple TCP connections. EX1030, 268:17-23.

(*i.e.*, no specialized media servers). Dr. Jeffay's illustration confirms the importance of these features:

Further, MOVE's Media Player automatically placed a streamlet request using a HTTP GET request for each streamlet over one or more network connections to the stream to retrieve a streamlet/file for the selected stream, and the HTTP GET requests identify the selected streamlet, and the requested streamlets are received from the server. *See e.g.*, EX2012; 2011.

To playback the video normally, the Move Media Player requests sequential files/streamlets from one of the copies from the video server based on the time indexes. *See e.g.*, EX2012; 2011. For example, the Move system provides for "[s]imple HTTP protocol transfer of media files from standard Web servers rather than deployment of expensive media servers." EX2012 at 22. This is further illustrated in the figure below.



EX2062, 3 (citing EX2012, 22) (annotated). And these features are what allegedly "impressed" Dr. Jeffay when he first reviewed the ABR Patents. EX2006, ¶¶46-47. However, these features are also not claimed in the '554 Patent and cannot provide a nexus.[12] EX1028, ¶¶75-76.

DISH provides brief conclusory arguments that "unique characteristics" of "actively adjusting … video quality to the bandwidth available" and "delivering

[12] Although a "web server" is recited in several dependent claims, those claims are not limited to any particular web server and include both standard and specialized web servers. *E.g.*, EX1001, claim 4.

'pieces of content progressively'" support a nexus. POR, 53-54. But these features were already in the prior art. *See In re Huai-Hung Kao*, 639 F.3d 1057, 1069 (Fed. Cir. 2011) ("[T]here must be a nexus to some aspect of the claim not already in the prior art"). For example, they are disclosed by Ogdon (EX1004, 3:38-41, 22:10-23) and other references such as Leaning, which discloses essentially all limitations in each of the '554 Patent's independent claims. EX1028, ¶¶77-80. In fact, every "unique characteristic" DISH relies on here to support nexus was identified by Dr. Jeffay in prior art references he relied on in other IPRs to invalidate streaming patents on behalf of petitioners. EX1020 ¶68 (client "request or pull"), ¶¶75-76 ("standard HTTP Web server"), ¶78 ("pull system for a streaming media server"); ¶87 ("data stream … divided … into a sequence of slices" and "encoded in a corresponding sequence of files, each file having a respective index"); ¶156 ("HTTP Get request"); EX1023 ¶51 ("encoding a video stream at various bitrates and selecting an appropriate stream for delivery to the end user based on current bandwidth availability on the network to the receiving device"); ¶¶60-61 (using HTTP to "transit firewalls").

B. Secondary Considerations Do Not Overcome a Strong Case of Obviousness

Even if there were a nexus, secondary considerations "cannot overcome a strong prima facie case of obviousness," which exists here. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010). Ogdon discloses every claim element

except possibly the minor feature of encoding its multiple streams at different bitrates, which is taught in Allen. Secondary considerations carry significantly less weight when only minor modifications based on predictable use of prior art elements are proposed. *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1344 (Fed. Cir. 2013).

Furthermore, any supposed commercial success, long-felt need, or surprising results were simply due to increased Internet bandwidth and advances in computing technology, such as interoperability standards and availability of low-cost, large-scale solid state memory—***not*** MOVE's player. *Supra* §I; EX1028, ¶¶81-84**Error! Reference source not found.**. As soon as others were able to leverage those advancements with their own streaming products, MOVE became a commercial failure overnight. EX2015. DISH's own evidence shows that once Microsoft released its streaming product, MOVE laid off 80% of its workforce and almost went bankrupt. *Id.* Tellingly, MOVE never sued Microsoft for patent infringement even though it lured Netflix away as a major client and drove MOVE toward extinction. EX2052.

DISH's ability to extract some licenses as part of patent assertion settlements is also not sufficient "commercial success" to overcome a strong showing of obviousness. *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004). Nor has DISH sufficiently shown copying. DISH's innuendo that

Microsoft and Apple stole and copied its invention after entering into NDAs is unsupported and undermined by the fact that ***DISH never sued either company for patent infringement or breach of the NDAs***—litigious as DISH is. DISH's claim about Apple does not even make sense: the MOVE-Apple meeting in 2006 occurred ***after*** the ABR Patents were already published and made public. POR, 62; EX1035 (pre-grant publication published in November 2005).

Finally, the cited surprising results and praise of MOVE is not from those in the industry and not tied to any of the alleged "unique characteristics." Instead, they simply express at best an apparent surprise over the high quality of video, which was enabled by advances in available bandwidth and computer technology. POR, 58-60; EX1028, ¶¶82-83. There is no evidence of any praise concerning the MOVE player's ability to switch between high quality video and fuzzy low quality video, as depicted in DISH's screenshots. *Id.*; POR, 2. And MOVE's demise reflects the contrary.

XIV. CONCLUSION

For the foregoing reasons, the Board should find the challenged claims unpatentable.

DATED: October 8, 2024

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CERTIFICATION OF COMPLIANCE UNDER 37 CFR § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), Petitioner certifies that this Petitioner's Reply complies with the type-volume limitation of 5,600 words excluding the parts exempted by 37 C.F.R. § 42.24(c). This Petitioner's Reply complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman font.

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CERTIFICATE OF SERVICE

I hereby certify that on October 8, 2024 I caused a true and correct copy of the foregoing Petitioner's Reply to be served via email to the counsel of record:

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