UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AYLO FREESITES LTD,
Petitioner,

v.

DISH TECHNOLOGIES L.L.C.,
Patent Owner.

IPR2024-00045

U.S. PATENT NO. 10,469,554

Attorney Docket No.: 081841.0167

PATENT OWNER'S RESPONSE

Contents

I. Introduction 1

II. How the Claimed Invention Differs From the prior art 6

III. Claim Construction 10

A. "Virtual Timeline" (Claims 11-14 and 23-25) 10

IV. Ground 1 Fails 11

A. Ogdon and Allen Fail to Disclose "Streamlets" 12

1. Ogdon Fails to Disclose "Streamlets" 13

2. The Petition Fails to Articulate Any Modification to the Ogdon-Allen Combination to Meet the "Streamlet" Limitations 19

3. Allen Does Not Disclose or Suggest Creating a Plurality of Streamlets from a Video Stream 23

4. Ogdon Teaches Away from Video Streaming 24

5. Allen Teaches Away From Encoding the Same Video Into Multiple Copies Having Different Bitrates 29

6. The Combination Changes Ogdon's Principle of Operation 32

7. Ogdon Fails to Disclose or Render Obvious "Streamlets" of the Same "Duration" 34

B. Ogdon Fails to Disclose a "Virtual Timeline" 39

C. Ogdon And Allen Fail to Disclose Individual "Streamlet Requests" .40

D. Ogdon Fails to Disclose "Adaptive-Rate Content Streaming" (Element 1[Pre]). 43

E. Ogdon and Allen Fail to Disclose a Client Stream Selection. 44

F. Ogdon Fails to Disclose "a Plurality of Web Servers ... Retriev[ing] from the Storage Device the Requested First Streamlet" 45

V. Ground 2 Fails 47

A. Ogdon in View of Allen and SMIL 2.0 Fails to Disclose "Streamlets" With the Same "Duration" 47

B. SMIL 2.0 Fails to Disclose a "Virtual Timeline" 51

VI. Strong Evidence of Secondary Considerations Preclude Obviousness 52

A. The Streaming Products Offered by DISH (and Predecessor MOVE) Embody the Claimed Invention.....53

B. Long-Felt but Unmet Need and Failure of Others 54

C. Surprising Results and Praise.....58

D. Commercial Success.....60

E. Copying 62

F. Industry Praise and Peer Recognition 63

G. The ITC Credited The Same Evidence as Conclusively Demonstrating Nexus and Secondary Considerations for Nonobviousness for the ABR Patents. 65

VII. CONCLUSION 66

PATENT OWNER'S EXHIBIT LIST

Ex. No.	Description of Documents
2001	Declaration of Dr. Kevin Jeffay in Support of Patent Owner's Preliminary Responses under 35 U.S.C. § 313 and 37 C.F.R. § 42.107
2002	File History of U.S. Patent No. 11,470,138
2003	Terminal Disclaimers of Patent Family
2004	U.S. Patent No. 6,389,473 ("Carmel")
2005	337-TA-1265 Investigation Commission Opinion
2006	Declaration of Dr. Kevin Jeffay in Support of Patent Owner's Response
2007	Trowt-Bayard *et al.*, *Videoconferencing & Interactive Multimedia: The Whole Picture* (Flatiron Publishing, 1997)
2008	Nigel Chapman *et al.*, *Digital Multimedia* (John Wiley & Sons, LTD, 2000)
2009	Transcript of Deposition of Dr. Henry Houh (July 9, 2024)
2010	Declaration of Inventor Robert Drew Major
2011	MOVE Networks Streaming Media Technology
2012	MOVE Networks Technology Overview
2013	Sling TV Emmy Award (CX-1084)
2014	MOVE Awarded Fundamental Patent (CX-1122)
2015	MOVE Networks Article (CX-0013)
2016	OnHollywood 100 (CX-1078)
2017	OnHollywood 100 Winner (CX-1079)
2018	OnMedia 100 Winner (CX-1080)

2019	Red Herring Global 100 (CX-1081)
2020	MOVE Networks TechCrunchies Finalist (CX-1082)
2021	MOVE Networks Makes Web TV Watchable (CX-0046)
2022	ABC.com Makes Watching TV at Work Better (CX-1106)
2023	MOVE Networks, a next-gen content distribution platform (CX-1134)
2024	Better than YouTube (CX-0045)
2025	Long-Form Video Gaining Viewers (CX-1115)
2026	Move Over Joost (CX-1125)
2027	Coming Faster Than You Think (CX-1110)
2028	WSJ Pushing to Bring TV to the Internet (CX-1128)
2029	CNN Level 3 Collaborates with MOVE (CX-1113)
2030	The Sport Page ESPN 360 (CX-1132)
2031	E-Mail 5/15/2007 (CX-1047C)
2032	E-Mail 6/16/2007 (CX-1049C)
2033	E-Mail 11/26/2007 (CX-1050C)
2034	ABC Big Move Away from Flash (CX-1116)
2035	Disney ABC Throws Down (CX-1130)
2036	The Lowdown on Apple (CX-1131)
2037	AOL and CBS Put Online HD (CX-1109)
2038	MOVE Quality Solution (CX-1121)
2039	ABC Becomes First Network HD Streamer (CX-1112)
2040	ABC.com to Stream HD Video (CX-1108)

2041	ABC Adds Full Screen Mode to Online Shows (CX-1104)
2042	MOVE Networks Releases Live Streaming (CX-1123)
2043	ABC Offering Full Screen Streaming HD (CX-1105)
2044	Level 3 Streams and Other News from SMW (CX-1114)
2045	Microsoft Unlocks Power of the Web (CX-1092)
2046	[Reserved]
2047	Disney Backs Video Start-Up (CX-1111)
2048	Here Comes More HD Video (CX-1077)
2049	E-Mail 1/20/2009 (CX-1146C)
2050	MOVE and Microsoft Term Sheet (CX-1051C)
2051	To the Ends of the Earth (CX-1074)
2052	MOVE Gets Streaming Patent; Are Adobe & Apple Hosed? (CX-1120)
2053	DISH's Motion for Preliminary Injunction, *DISH Techs. v. MG Premium Ltd et al.*, No. 2:23-cv-552-HCN-DAO, D.I. 19.
2054	[Reserved]
2055	Apple and MOVE NDA Agreement 11/15/2006 (CX-1137C)
2056	Apple and MOVE NDA Agreement (CX-1085C)
2057	E-Mail on 2/23/2009 (CX-1219C)
2058	Microsoft Invests in Net Video (CX-1087)
2059	MOVE Networks Publishing System (CX-1247C)
2060	Silverlight Shines (CX-1090)
2061	[Reserved]

2062	Exemplary Claim Chart Illustrating MOVE Networks' Use of Invention
2063	Excerpt of Deposition of David Ericson in *In re Certain Fitness Devices, Streaming Components Thereof, and Systems Containing Same*, Inv. No. 337-TA-1265 (taken Jan. 6, 2022)
2064	MOVE Crosses the Hour Threshold
2065	Readies Online HD Shows as Streamlettes (CX-1107)
2066	Delivering a Better Viewing Experience
2067	MOVE Adaptive Stream
2068	Utah Valley Entrepreneurial Forum Hall of Fame 2013
2069	Utah Technology Hall of Fame 2005
2070	ABC TV New Player Rocks
2071	E-Mail 1/23/2008 (CX-1052C)
2072	ABC.com Streamlettes (CX-1133)
2073	MOVE Networks Newsroom (CX-1124)
2074	ABC.com Readies Online HD (CX-1135)
2075	Metrics Point to Maturation of Online (CX-1117)
2076	More Money Pouring Into Rich Media (CX-1118)
2077	MOVE Put Mass Back Into Mass Media (CX-1126)
2078	E-mail 2/25/2008 (CX-1053C)
2079	E-mail 5/14/2008 (CX-1055C)
2080	2010 EchoStar 10-K (CX-0052)
2081	E-Mail 8/26/2008 (CX-1059C)
2082	Microsoft Extends Vision (CX-1148)

2083	DISH's Motion to Terminate Against Peloton
2084	Joint Motion to Partially Terminate Against Mirror
2085	DISH Petition to Rescind Limited Exclusion Order Against iFit
2086	MOVE Networks Awarded Fundamental Patent (CX-1091)
2087	Synchronized Multimedia Integration Language (SMIL 2.0)
2088	Default Protective Order

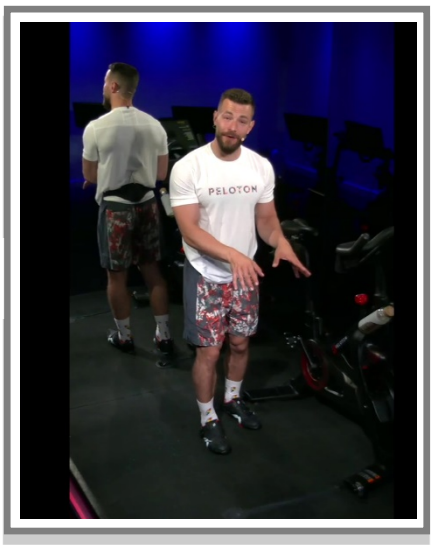
I. INTRODUCTION

The Board should affirm the patentability of challenged claims 1-5, 7, 8, 10-14, 16-20, 22-28, and 30 of United States Patent No. 10,469,554 ("the '554 Patent") because none of the prior art teaches adaptive rate video "streamlets" of varying quality—the heart of the claimed invention. Petitioner's unsupported obviousness rationales bear numerous hallmarks of hindsight reasoning. For example, Petitioner seeks to supply this essential element of the invention purely from the knowledge of a POSITA, a clear sign of hindsight.

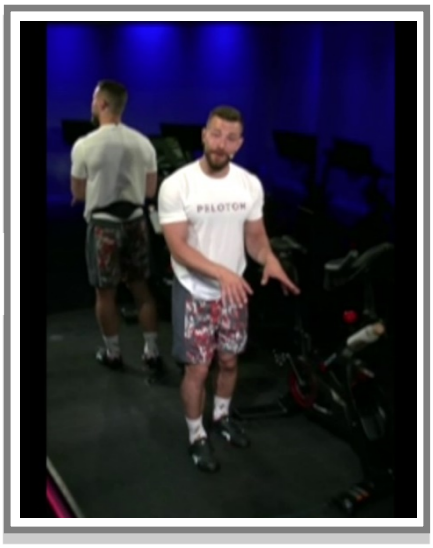
One major distinction between the challenged claims and Petitioner's lead reference (Ogdon, EX1004) is the content of the claimed video "streamlets" versus Ogdon's presentation "segments," which are not limited to video. The challenged claims require multiple copies of the same video be divided into "streamlets." where each "streamlet" across the multiple copies contain the exact ***same content***. While each "streamlet" has a different quality level (e.g., 100 kbps (low), 200 kbps (medium), 600 kbps (high)) across the multiple copies, they are identical in length and content. Example images of such "streamlets" across multiple streams are shown below:

Exemplary Claimed "Streamlets"

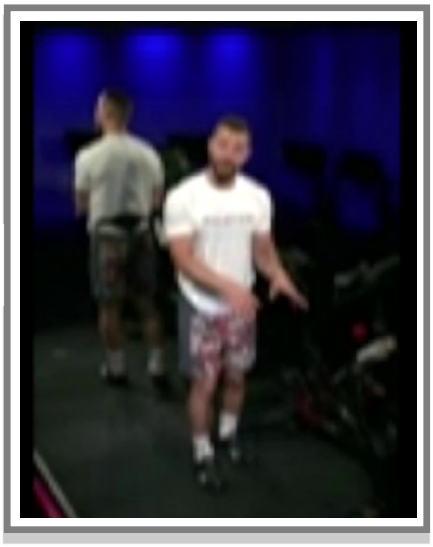
High Quality
(Large Streamlet Size)



Medium Quality
(Medium Streamlet Size)



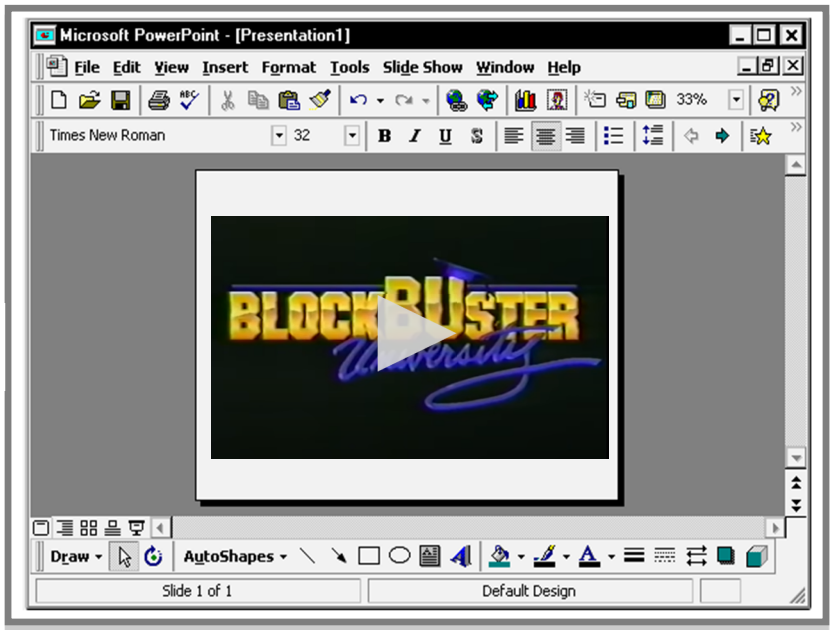
Low Quality
(Small Streamlet Size)



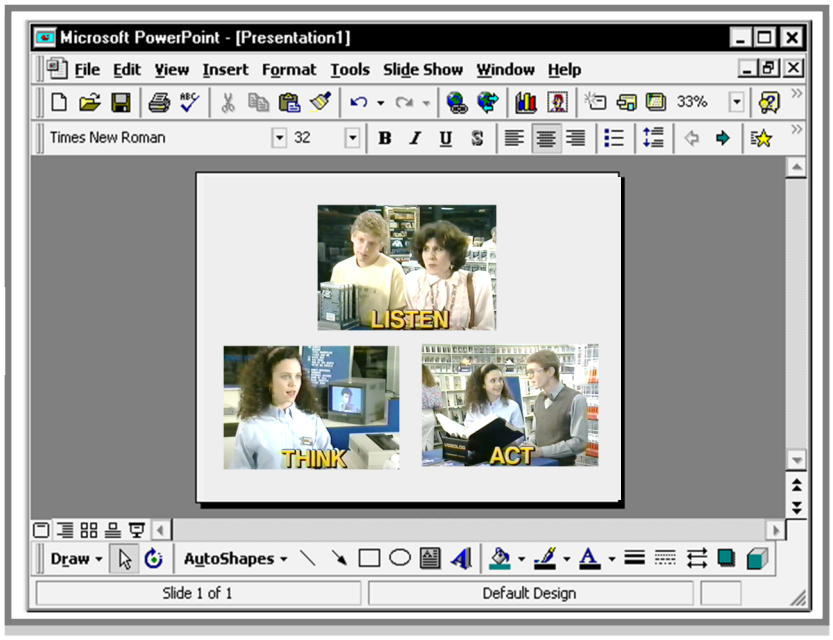
While Ogdon's "presentation materials" have "segments" that are provided in different "versions," those "segments" are comprised entirely of different content across different "versions." As depicted below, Ogdon discloses an example where the first "version" of a "segment" includes a video, the second "version" of a "segment" includes multiple images, and the third "version" of a "segment" includes a single image. EX1004, 2:66-3:8 (disclosing "a multimedia presentation element ... can be as simple as a single image or as complex as a combination of images, audio, animation and video").

Ogdon's "Segments"

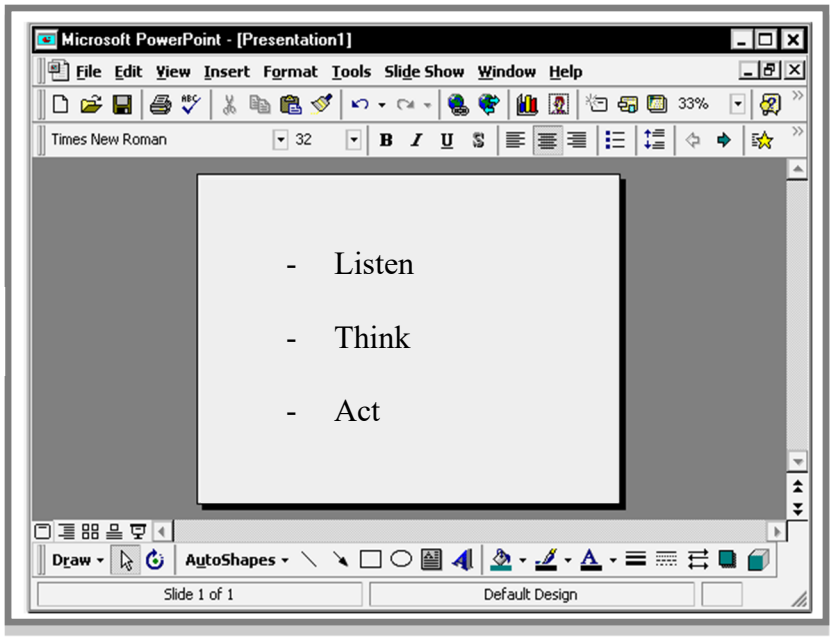
Version 1 (Embedded Video)



Version 2 (Multiple Images)



Version 3 (Text Only)



As the Board correctly found, this is ***not*** the same as "storing multiple copies of ***the same video***." *Aylo Freesites Ltd. v. Dish Technologies L.L.C.,* IPR2024-00146, Paper 9, 40. Furthermore, each individual "segment" within a particular presentation is a "***unique*** (multi)media element[s]," rather than a sub-portion of a larger multimedia element. EX1004, 6:2 (emphasis added).

Petitioner relies on unsupported, generalized, and conclusory expert testimony to supply the key missing feature. This approach to obviousness is precluded by controlling law, such as *Arendi S.A.R.L. v. Apple*. 832 F.3d 1355, 1363 (Fed. Cir. 2016) (holding when a POSITA's common sense is invoked to supply missing claim limitation, "our search for a reasoned basis for resort to common sense must be searching … particularly … where the missing limitation goes to the heart of an invention."). Moreover, Petitioner's combination requires modifying the principle of operation of its lead reference (Ogdon) from an ***adaptive content***

streaming system (where different types of content are provided to different users) to an ***adaptive rate*** streaming system (where identical content at different quality levels are provided to different users). *See Application of Ratti,* 270 F.2d 810, 813 (C.C.P.A. 1959) (holding combination improperly based on "hindsight" when it "would require…a change in the basic principles under which" the prior art was designed to operate). Finally, Petitioner and its expert fail to properly address known objective indicia of nonobviousness, including the fact that the claimed technology was vastly commercially successful, received an Emmy award from the Academy of Television Arts and Sciences for its "pioneering" achievement, and has become the de facto standard for live and on-demand video streaming over the Internet.

For these, and other reasons explained below, the Board should conclude that Petitioner has failed to show that it is more likely than not that any of the claims are unpatentable.

II. HOW THE CLAIMED INVENTION DIFFERS FROM THE PRIOR ART

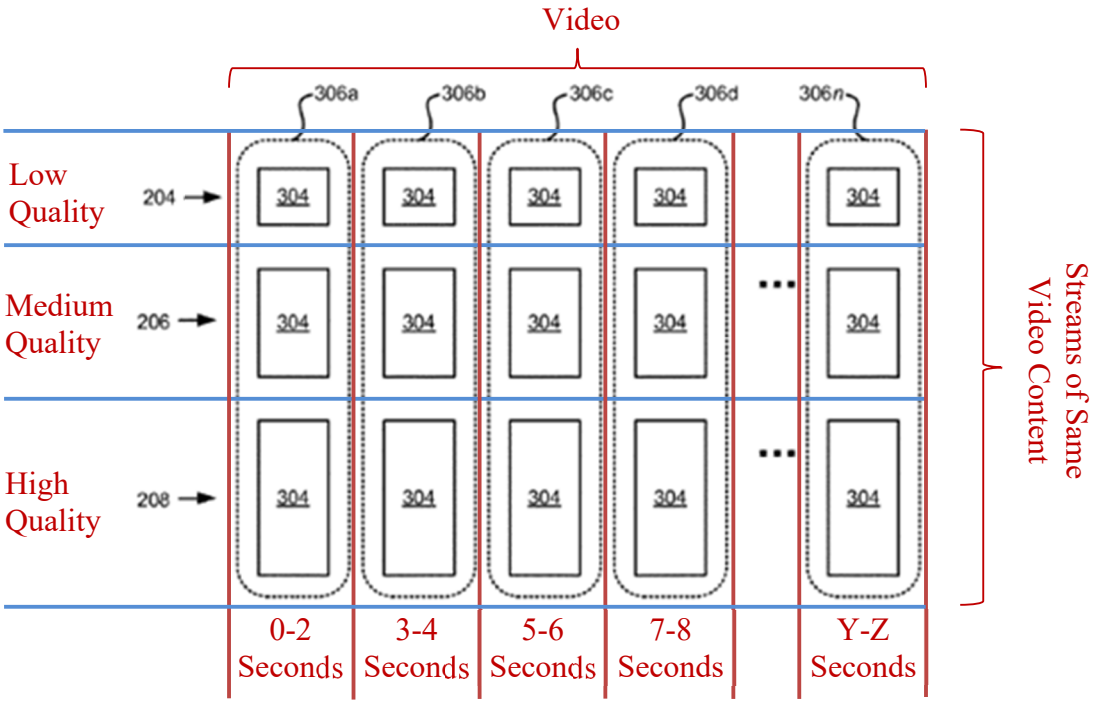
The claimed invention relates to adaptive bitrate streaming using "streamlets." Each challenged independent claim requires encoding a larger "video" in different bitrates to create a plurality of "streams," where each stream is divided into smaller, separate portions of the larger stream called "streamlets":

Challenged Claim Element	
1[C]	stream[s] ***each comprising a group of streamlets***
16[C][4]	each … stream ***comprising a group of streamlets***
26[B]	stream[s] ***each comprise a group of streamlets***

30[C]	stream[s] ***each comprise a group of streamlets***

The '554 Patent's Figure 3b depicts exemplary "streamlets" **304**, where a video is divided into both different time slices **306a-306n** (vertical, red division) and qualities of the same video content, **204-208** (horizontal, blue division). EX1001, 7:55-8:12, FIG. 3b (annotations added).

Claimed Streamlets



Each "streamlet" **304** corresponds to the same temporal video portion, but their data size increases as their corresponding display quality increases. *Id.* This allows an end-user/client device to adapt to changes in network conditions by requesting[1]

[1] Half of the challenged independent claims—independent claims 16, 26, and 30—require that each streamlet be requestable via a "streamlet request," which Ogdon also does not contemplate. *See infra* §IV.C.

"streamlets" **304** of different quality based on current network conditions. This permits continuous playback of the video as network conditions change, rather than pausing playback (*i.e.*, buffering).

None of Petitioner's references teach or suggest subdividing the ***same video content*** into time-aligned portions of different bitrates. EX2006, ¶[70-82, 100-102]. Ogdon describes a presentation with different "segments" and specifies these segments correspond to slides in a presentation slide show (*e.g.*, a PowerPoint presentation). EX1004, 2:62-66, 3:51-64, 6:61-62; 22:8-9. Ogdon's segments have different "versions" (*e.g.*, a slide with "a single image," a slide with "a combination of images," a slide with an "animation," etc.). EX1004, 2:55-3:8. But these "segments" are discrete portions of a presentation. *Id.*; *see also* EX2006, ¶[58]. They are ***not*** time-divided into smaller segments, or "streamlets," nor do they collectively represent a larger stream as recited in the challenged claims. EX2006, ¶[58].

Allen merely describes encoding content "in three different bitrates, 56Kbps, 300Kbps, and 600Kbps," but not dividing the resulting content into smaller, time-divided "streamlets." EX1005, 12:2-5; *see also id.,* 3:16-18. Instead, one large file is sent to a user and no changes to a different quality are permitted. *Id.,* 1:18-21; EX2006, ¶[100-102].

Lacking any express disclosure in the references, Petitioner argues that the inventive "streamlet" is obvious, but its arguments have all the hallmarks of hindsight, including:

(1) Relying on a POSITA's "common sense" to supply a missing feature that is the heart of the invention (*i.e.,* "streamlets" of identical content across multiple video copies);

(2) Changing the principle of operation of the primary reference (Ogdon) from a system that changes the presentation content (adaptive content) to a system that preserves the content and changes only the quality (adaptive bitrate));

(3) Modifying a reference (Ogdon) to solve a problem that the reference already solves; and

(4) Failing to address known objective indicia of non-obviousness.

Furthermore, both Ogdon and Allen teach away from Petitioner's combination. Ogdon is directed to finding alternatives to Allen's video streaming technology that provides the same content to every user. EX1004, 1:34-48 (seeking to avoid video conferencing). And Allen disparages the claimed multi-bitrate approach, saying it "places insurmountable burdens" on content and network providers to create enough streams of different quality "to reach a reasonably wide audience." EX1005, 12:5-7, 13:5-8; 104:12-16; EX2006, ¶[53-69, 103-108].

Petitioner's third reference—SMIL 2.0—fares no better. It also fails to disclose parallel video segments of the same content and duration. Thus, SMIL 2.0 does not contemplate time-dividing a video into "streamlets" or having video segments be part of a slide presentation led by a human presenter.

Because none of the references either individually or collectively teach the claimed streamlets, Petitioner has failed to carry its burden.

III. CLAIM CONSTRUCTION

Claims should be construed according to their plain and ordinary meaning. PO proposes constructions for only the following terms.

A. "Virtual Timeline" (Claims 11-14 and 23-25)

A POSITA would readily understand the meaning of the term "virtual timeline" from the plain language of the claims themselves, which is consistent with the use of the term in the specification. EX2006, ¶[42]. The term "virtual timeline" therefore does not require a specific construction.

A POSITA would have understood that the claimed "virtual timeline" is broad enough to include a "playlist." EX2006, ¶[43]. For example, the specification states that "the virtual timeline (hereinafter 'VT') 600 may comprise a file that is configured to define a ***playlist*** for a user to view." '554 Patent, 12:36-38 (emphasis added). Although the specification goes on to describe two exemplary alternatives of such a "playlist"—one in which three different "shows" are listed ('554 Patent, 12:38-41) and one in which the same "content" is "looped" (*id.*, 12:44-49)—these

are just non-limiting examples of "playlists," as indicated by the repeated use of open-ended language like "[f]or example" and "may" to introduce these concepts.

Moreover, while it is true that this first example describes the "virtual timeline" as "compris[ing] at least one quantum media extension 602" that "describes an entire content file 200," the specification makes clear that this is just "one embodiment." The "alternative embodiment" described in the specification (*i.e.*, the embodiment that loops "content") makes no mention whatsoever of "an entire content file" and, therefore, does not require it. It follows that the term "virtual timeline" also does not require it. EX2006, ¶[44]. Regardless, it would be improper to read either of these exemplary embodiments into the term "virtual timeline" absent evidence of a clear disavowal of claim scope, and Petitioner does not attempt to identify any beyond the open-ended language in the specification (*i.e.*, "[f]or example," "may," etc.) discussed above. "Virtual timeline" should therefore be interpreted to require a "playlist," which may or may not include "entire content files." EX2006, ¶[44].

IV. GROUND 1 FAILS

In Ground 1, Petitioner alleges that Claims 1-5, 7, 8, 10-14, 16-20, 22-28, and 30 are rendered obvious in view of Ogdon and Allen. Petitioner's Ground 1 arguments fail.

A. Ogdon and Allen Fail to Disclose "Streamlets"

Ground 1 relies on the combination of Ogdon and Allen as allegedly rendering obvious independent Claims 1, 16, 26, and 30 and their challenged dependent claims, including their recitation of "streamlets." In relevant part, Petitioner asserts:

> …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, 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 webservers (see 1[A]).*** 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.

Pet., 22-23 (citations and parenthetical quotes omitted). Thus, Petitioner starts with Ogdon's "segments," and applies Allen's teaching to encode each of those "segments" at a different quality level to allegedly arrive at the relevant limitations. *Id*.[2] But Allen cannot cure the fact that Ogdon's "segments" are not "streamlets," but

[2] Petitioner first alleges that Ogdon ***alone*** "discloses that each stream (at each corresponding bitrate) comprises a group (elements, collections, or subcollections) of streamlets (segments) encoded at a respective one of the bit rates." Pet., 21. However, as discussed in §IV.A.4 below, the Board has repeatedly found that Ogdon alone does not disclose a plurality of streams, much less a plurality of streams comprising groups of individual streamlets as claimed. Petitioner's

rather are unique multimedia elements (*e.g.*, PowerPoint slides), as discussed *infra* at §IV.A.1. And Petitioner does not propose any ***modification*** to Ogdon's "segments" that might cure these deficiencies, as discussed *infra* at §IV.A.2.

1. Ogdon Fails to Disclose "Streamlets"

As discussed *supra* at §II, each of the independent claims of the '554 Patent recites that video "streams" of different bitrates are divided into time-aligned "streamlets" of the same video to permit adaption to changing network conditions. Ogdon describes a fundamentally different approach to this problem that does not involve "streamlets." EX2006, ¶[53-65].

Ogdon purports to overcome the "drawbacks" of videoconferencing by separating the audio and visual portions of a slideshow presentation from each other and then "synchronously provid[ing the] audio and video portions of the presentation through different communication channels." EX1004, 2:66-3:8, 3:64-4:10. As discussed *infra* at §IV.A.4, "video" here means the visual portion of a presentation. Ogdon states that its solution allows the audio portion of the presentation to continue via one communication channel (*e.g.*, conventional telephony) even if display of the visual content via the other communication channel (*e.g.*, the Internet) is interrupted or not possible. *Id.,* 24:28-39.

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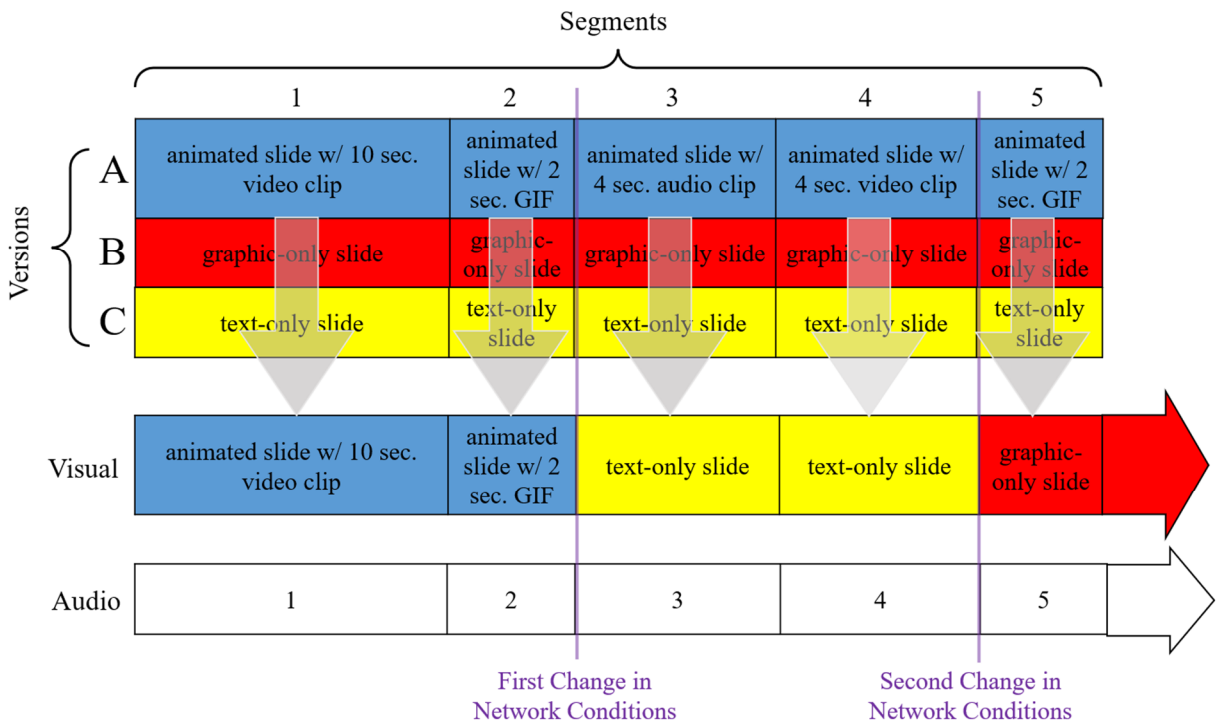
argument for limitation 1[C] based solely on Ogdon as to the "streamlet" limitations should be rejected for this same reason.

To allow synchronization of the audio and visual portions with each other, Ogdon divides each portion into different "presentation elements," or "segments," that "play[] over a set period of time," as depicted below:

Ogdon's Presentation Segments

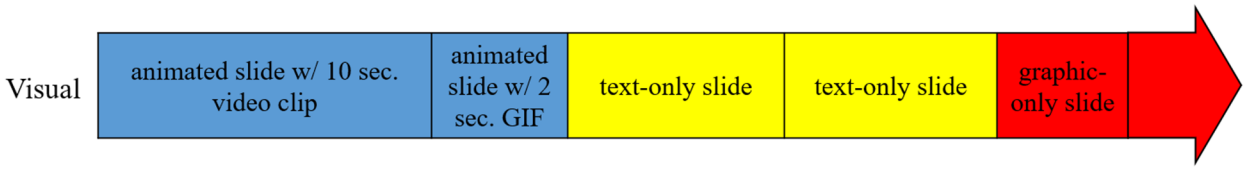


Ogdon discloses the "presentation leader" determines that "period of time," and will "indicat[e] the next presentation segment(s) to be presented" when he/she is ready to move on to the next "segment." *Id.,* 4:29-36; *see also id.,* 21:16-19 ("the leader(s) may choose to identify Such segments"), 21:24-29 (referring to "the leader supplied identifications for the segment collection"); EX2006, ¶[116]. It is ***not*** determined by the content of the "segment" itself, which could be something with zero length of time associated with it (e.g., "a single image" or "a combination of images"). This is why Ogdon explains that "different versions" of its "segments"

only need to be "***approximately*** the same presentation duration." Thus, although the "segments" in the example above appear to be the same length from one "version" to the next, they are not. They are merely ***presented*** for the same length of time, regardless of whether they include a video, a combination of images, or a single image.

As shown above, every presentation includes five different slides, or "segments." They include different types of media elements (*e.g.*, "a combination of one or more of ... audio, images, animation or video"). As depicted below, this results in different users potentially viewing different "versions" of the presentation with different visual content as network conditions change. EX2006, ¶[119].

Visual Presentation



In the above Visual Presentation diagram, the presentation's "visual" portion begins with a slide from Version A, then simpler slides (*e.g.*, slides with text) from Version C are substituted in for the subsequent slides from Version A. When network conditions improve after the fourth slide, more complex slides (*e.g.*, graphics) from Version B are substituted. The "audio" portion of the presentation remains the same throughout. EX2006, ¶[120].

As the Board correctly observed, none of these different "versions" of the "visual" portion of the presentation corresponds to the same video. *E.g.,* IPR2024-00146, Paper 9, 40. Thus, Ogdon substitutes entirely different content in and out of a presentation when network conditions change, rather than switching between segments of the same video having different qualities but identical content, as required by the challenged claims.

Although Ogdon's presentations are divided into "segments," "each segment of a presentation is treated as a ***unique*** (multi)media element." EX1004, 6:1-5. And Ogdon does not disclose any relationship between these "unique" segments other than that they may be displayed during the same presentation. EX2006, ¶[90]. In other words, each of Ogdon's "segments" is a distinct, stand-alone piece of content, like a PowerPoint slide. Neither that piece of content, nor anything within it (*e.g.*, a video), is divided into smaller portions. EX2006, ¶[90].

Continuing with this same example, segments 1-2 may be an animated slide with a first video, and a slide with a two-second GIF animation, respectively; segments 3-4 may be slides with only text, respectively; and segment 5 may be a slide with multiple images. Accordingly, Ogdon teaches that each "segment" stands on its own and is indivisible. Rather than dividing "segments" into smaller portions, Ogdon describes grouping them together into "elements" that are "intended to be an ***indivisible*** portion of a presentation performance." EX1004, 2:39-42; EX2006, ¶[129]. Thus, even where a "segment" includes a video, it is, at most, grouped with

other videos of similar or wholly different content. It is never divided into smaller portions of the same video, or streamlets, as required by the challenged claims.

The types of content that Ogdon distributes (*e.g.*, images, audio, and video clips) also are entirely inconsistent with the claimed streaming video content. EX2006, ¶[58]. As discussed *infra* at §IV.A.4, Ogdon only discusses "audio streaming" and teaches away from video streaming. EX2006, ¶[65-66]. Nor does Ogdon disclose the distribution of any larger-form videos like "movie[s]," "sports event[s]," "music," "concert[s]," or any of the other content typically associated with video streaming disclosed by the '554 Patent. *See* EX1001, 7:13-15. Ogdon refers only to "video" as a type of "multimedia element" that could be included as part of a presentation. *See, e.g.*, EX1004, 2:66-3:8.

Moreover, the division of digitally encoded video into streamlets was not a trivial operation in the 1997-2004 timeframe. EX2006, ¶[91]. And the video coding standards available to Ogdon were not conducive to "segmentation" of larger-form streams. *Id.* Ogdon's silence as to this critical process is telling, as a POSITA would have understood it was not practical and not the approach Ogdon was pursuing. *Id.*

Indeed, Ogdon only uses the terms "encoding" or "decoding" in the context of the "audio" portion of its slideshow presentations; not in the context of video. Ogdon also does not disclose "buffering" video in the end-user device's memory. Instead, Ogdon discloses that, if there is "insufficient time" to retrieve a visual

"segment" of a presentation, that visual "segment" is simply ***skipped***. EX1004, 24:28-39.

Another critical distinction between Ogdon's segments and the claimed "streamlets" lies in the control that Ogdon provides to a "presentation leader" over the order and pace of presentation "segments." EX2006, ¶[89]. For example, Ogdon discloses that a presentation leader can "***skip*** and/or ***rearrange*** portions of a presentation performance" on the fly as needed to best address his/her audience, such as in response to "user feedback." EX1004, 2:14-23, 25:59-62 (emphasis added); *see also id.,* 20:56-67. Ogdon further discloses that "some portions of a presentation will ***automatically*** be ***skipped*** if a performance of the presentation is running behind." *Id.,* 25:63-26:1.

Such functionality would be highly undesirable in the context of video streaming, as claimed. For example, unexplained "skipping" of streamlets of a larger video stream would result in confusion as whole scenes or cuts of dialogue would be removed from the original content. EX2009, 173:6-174:12; EX2006, ¶[89]. "Rearranging" or "substituting" streamlets would result in even more confusion. Ogdon's "presentations" and presenter control thereof are, therefore, wholly inconsistent with the video streams of the '554 Patent.

At bottom, Ogdon's "segments" are not "streamlets," or portions of a stream, because the "unique (multi)media elements" that make up those "segments" are not "video ***streams***." And even when Ogdon's segments include "video," they are not

subdivided into time-aligned portions of different bitrates, as recited in the challenged claims.

For those reasons, PO respectfully suggests that the Board overlooked the requirement that the claimed "streamlets" must be portions of a larger video—specifically, a "video stream"—in its preliminary finding that Ogdon's "segments" correspond to the claimed "streamlets." IPR2024-00045, Paper 8 (hereinafter "ID"), 24 ("Ogdon's presentation ***segments*** teach the recited '***streamlets***' ... .") (emphasis added); *see also* Pet., 21 ("Ogdon further discloses that each stream (at each corresponding bitrate) comprises a group (elements, collections, or subcollections) of ***streamlets*** (***segments***) encoded at a respective one of the bit rates.") (emphasis added).

2. The Petition Fails to Articulate Any Modification to the Ogdon-Allen Combination to Meet the "Streamlet" Limitations

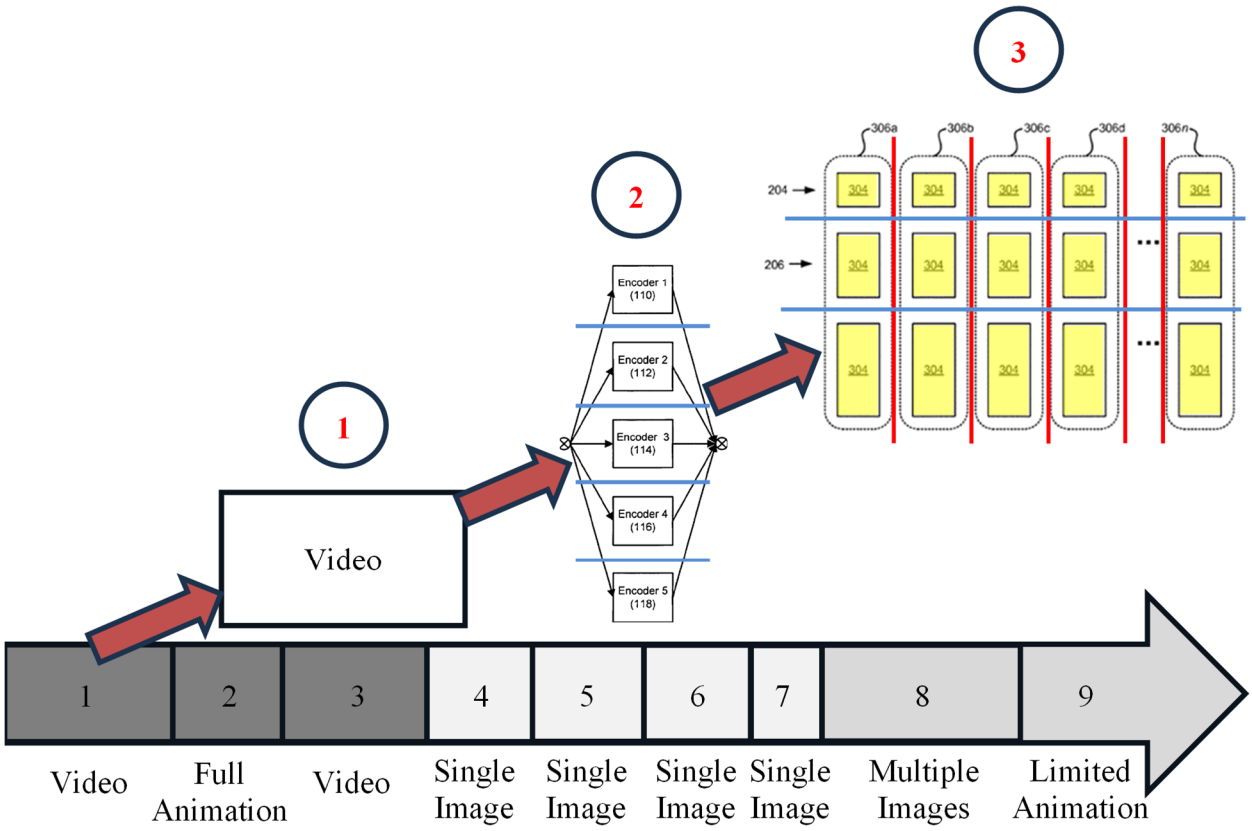
Petitioner does not rely on Allen to disclose any alleged "segmentation" of Ogdon's presentation materials. Instead, Petitioner relies on Allen only to suggest encoding ***each of Ogdon's*** "***segments***" at different bitrates. Pet., 22-23. The proposed combination thus fails to cure the deficiencies in Petitioner's mapping of Ogdon's "segments" to the claimed "streamlets."

To cure these deficiencies, it would be necessary to modify Ogdon to (1) encode every discrete video embedded into Ogdon's "segments" at different bitrates to create multiple copies of each video, and (2) subdivide and encode those videos

into time-aligned portions across the different bitrate copies, and (3) fundamentally alter how those time-aligned portions are stored and retrieved from servers. EX2006, ¶[96]. Because Ogdon's "segments" are "unique (multi)media element(s)," rather than larger-form video streams (*see supra* §IV.A.1), these modifications would require (1) extracting the video clip embedded in a "segment" (*e.g.*, a PowerPoint slide),[3] (2) encoding the video into different bitrates to create a plurality of "streams" (horizontal blue lines below), and (3) dividing each "stream" into smaller, separate portions of the larger stream (vertical red lines below) (*i.e.,* "streamlets"), as depicted below. EX2006, ¶[96].

[3] Ogdon's slides may also be a HTML page. EX1004, 2:66-3:8, 27:6-7; *see also id.*, 6:61-65 (discussing videos as a "type[] of HTML multimedia data" and that a "segment" may be "[a] single HTML file containing presentation content.").

Deficiencies in Proposed Combination



In the above diagram, each of the three horizontal rows highlighted in yellow corresponds to a separate "stream"—specifically, a high quality, medium quality, and low quality stream—and each of the five vertical columns highlighted in yellow corresponds to a separate time-aligned portions of each "stream." EX2006, ¶[97]. The individual boxes highlighted in yellow—fifteen of them total—are the resulting "streamlets." Petitioner fails to articulate any such modification, much less a reason to modify Ogdon in this manner, how a POSITA would have undertaken such a modification, or a showing of a reasonable expectation of success in doing so. EX2006, ¶[97].

Instead, Petitioner merely states the following with regard to "obviousness" of the claimed "streamlets":

> 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. 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.

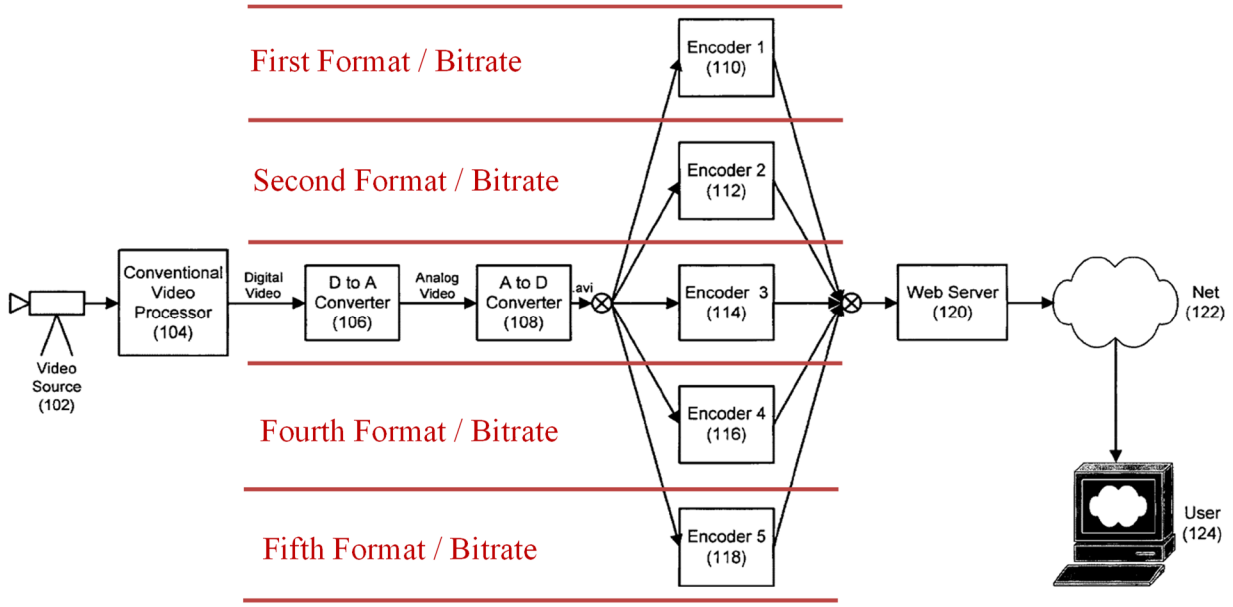
Pet., 23. Thus, Petitioner's proposed "modification" is limited to application of Allen's teaching to encode video at multiple bitrates to Ogdon's "corresponding segments at different quality levels."

Entirely missing is any mention of ***further dividing*** the "raw video segments" of allegedly different quality into smaller portions of ***the same video***. EX2006, ¶[99]. Thus, Petitioner fails to articulate a modification to the Ogdon-Allen combination that would meet the "streamlet" limitation in each of the challenged claims. Instead, and as discussed at length in the sections below, a POSITA would have understood that Ogdon teaches away from its combination with Allen in the first instance. *See infra* §IV.A.4. So does Allen, albeit for separate and independent reasons, as discussed *infra* at §IV.A.5.

3. Allen Does Not Disclose or Suggest Creating a Plurality of Streamlets from a Video Stream

Although Allen discloses encoding "***nine*** individual streams" of video in different format/bitrate combinations, none of the resulting videos are further divided into "streamlets," as depicted below. EX1005, 12:2-5, 3:16-18, FIG 1A (annotations added); EX2006, ¶[101].

Allen, FIG 1A (annotations added)



Instead, Allen teaches sending continuous stream to a user based on "the capabilities of the user's system." EX1005, 1:18-21; 9:5-11 ("The end user … indicate[s] … the desired format … as well as the desired delivery bit rate …."). Thus, Allen could not be used to modify Ogdon's "segments" into "streamlets" even if there were a reason for doing so (there is not). EX2006, ¶[102].

4. Ogdon Teaches Away from Video Streaming

Rather than encode the same video at ***different bitrates*** to account for changes in network conditions, Ogdon describes creating entirely ***different content*** "for a different group of audience members" such as different corporate roles or different network connectivity. EX1004, 2:30-35, 2:43-66, 22:42-47; EX2006, ¶[60, 74].[4] "[A] first variation might be directed to the customers of a corporation, another … to the sales representatives…, and yet another directed to …investors." EX1004, 25:38-42. Or "a first version of a presentation may require a network transmission rate sufficient for real time or animated video and the segments for another version of the presentation may only require a transmission rate sufficient for graphic slides." *Id.*, 2:61-66.

The different "subcollections," or "versions," of Ogdon's content range from content "as simple as a single image or as complex as a combination of images, audio, animation and video," as depicted below. *Id.*, 2:66-3:8, 2:44-63, 22:42-47; EX2006, ¶[76].

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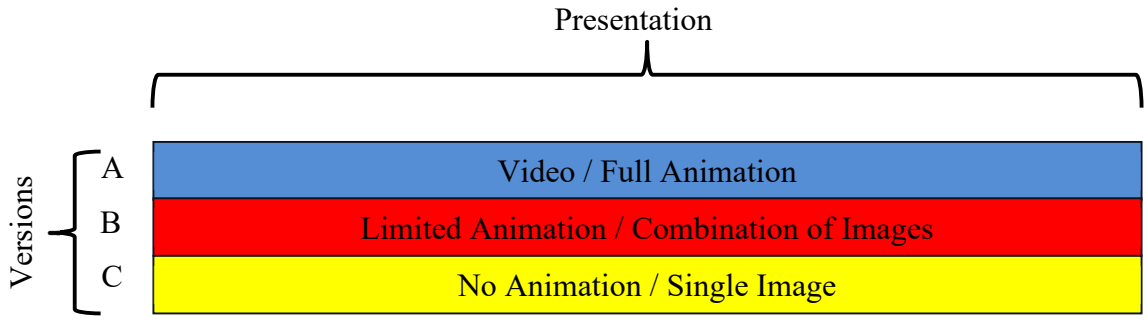
[4] But, as the Board has already found, Ogdon fails to disclose "storing multiple copies of ***the same video***." IPR2024-00146, Paper 9, 40 (italics in original; bold added); IPR2024-00047, Paper 8, 18 ("Ogdon never describes two copies of the same video presentation. It also does not refer to creating two copies of identical content (video or otherwise) that are encoded differently."); IPR2024-00048, Paper 8, 18 (same); IPR2024-00147, Paper 9, 19 (same).

Ogdon's Different Segment Versions



Nowhere does Ogdon say that these different "subcollections," or "versions," of content correspond to the same video. Indeed, it is the underlying content itself—not the content quality—that Ogdon changes. EX2006, ¶[77-78]; *see* IPR2024-00146, Paper 9, 40 ("Ogdon describes storing *different versions* of a presentation, rather than multiple *copies of the same video*.") (italics in original).

Furthermore, Ogdon's different "versions" of a presentation are not "streams." Although Ogdon uses the term "stream" in its specification, it is always for an audio stream—not video:

"***audio playback*** with an identified audio file or ***stream***." EX1004, 13:3-13.
"an ***audio file or Stream***." *Id.*, 13:14-17.
"Audio Ralive-Live ***streaming of an audio file***…." *Id.*, 27:17-19.
"***real time audio stream*** accessible from the webserver…." *Id.*, 28:30-32.

An "audio stream" is not a "video stream." This is particularly true in the context of Ogdon, where the audio and video portions of the presentation are separated from each other and transmitted via different communication channels

(*e.g.*, audio via conventional telephony and video via the Internet), as discussed *supra* at §IV.A.1. EX2006, ¶[53]; EX1004, 2:1-6. Ogdon teaches the human presenter will provide audio commentary as he/she progresses through the presentation segments based on a predetermined script. EX1004, 4:47-59; EX2006, ¶[58-61]. Thus, Ogdon fails to disclose creating a "***video*** stream," much less a "plurality of streams" of the same video, as required by the independent claims.

Ogdon actually teaches away from video streaming. EX2006, ¶[53-65]. Video 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 out of reach for most. *Id.*, ¶[55]. A POSITA at the relevant time would have understood this and it would inform their reading of Ogdon. *Id.*

Ogdon explains the "numerous drawbacks" of "video conferencing systems." EX1004, 1:19-35. Ogdon expresses concern about users who are not able to access such a [specialized and expensive video conferencing] center [being] ***excluded from the presentation***." EX1004, 1:40-42. Ogdon thus primarily seeks to ***increase access*** to remote presentations. EX2006, ¶[54-55]. It does so by teaching an alternative to "video conferencing" that does not require video streaming, or the expensive facilities and equipment necessary to enable it. *Id*. Instead of streaming video, Ogdon discloses "synchronously" distributing a combination of (1) "presentation materials," like slides, with embedded images or video clips, and (2) streaming real-time audio of the presenter speaking during the presentation. EX1004, 2:13-17, 2:66-

3:10, 4:64-65. This simulates a live "presentation performance," while avoiding the need for "streaming" video of the presentation. EX2006, ¶[55].

Critically, while Ogdon teaches that video streaming was only available over "***specialized*** … high data transmission lines," Ogdon teaches that his approach has the "advantage" of ***not requiring video streaming or specialized transmission lines***, making presentations more accessible using "standard" networks:

> [I]t would be advantageous to have a network presentation distribution system that alleviates these drawbacks, wherein such a system would allow individuals to access and/or participate in a presentation using ***standard telephony and Internet network connections found in most offices and many homes***.

EX1004, 1:43-48. Thus, Ogdon expressly teaches away from a video streaming solution. EX2006, ¶[55].

It follows that, while Ogdon refers to distributing "the ***video portion*** of a presentation to a user site via the Internet," a POSITA would not have understood this "video portion" to refer to a "video stream" but rather visual content with no motion. EX1004, 2:1-2; EX2006, ¶[59]. This is because Ogdon uses the term "video" to refer generally to "visual" including something "as simple as a single image." EX1004, 2:66-3:8; EX2006, ¶[59]; *see also* EX2007, 1 ("the term 'video,' in its strictest sense, refers only to images."). Ogdon even includes claims (e.g., Claims 6 and 20) that expressly recite a "video" with "no motion." EX1004, 29:45-47, 32:22-27.

Second, as noted, a POSITA would have appreciated the limited availability of video streaming in the 1997-2004 timeframe and Ogdon's desire to avoid the "drawbacks" associated with it. EX2006, ¶[59]. Thus, a POSITA would have understood the term "video portion of a presentation," as used by Ogdon, as referring to the "visual" components of a presentation, such as images, animated GIFs, or limited video clips embedded in the presenter's slides, ***not*** to "streaming video." *Id*.

A POSITA would have also understood that the term "stream[ing]" as recited in each independent claim refers to a method of transferring video over the internet in which the client only ***temporarily*** caches or buffers the streamed content. EX2006, ¶[64]; EX2008, 341 ("true streaming video is never stored on the user's disk" outside of a "small buffer."); *see also* EX1001, 13:65-14:6 (explaining streamlets are ***temporarily*** buffered, are automatically "deleted," and must "be requested again" if needed).

Ogdon acknowledges the special requirements of "streaming" systems, yet discloses a ***different*** approach for distribution of its presentation materials. EX2006, ¶[65]. For example, Ogdon describes two ***distinct*** delivery mechanisms for the audio accompanying Ogdon's presentation materials: ***download*** and ***streaming***:

> (10.7) Audio RaFile-An audio file ***prepared in advance*** of the presentation, may be ***downloaded to client nodes*** 56 via network 70.
>
> (10.8) Audio Ralive-Live ***streaming*** of an audio file, via network 70, requires ***dynamic real time buffering*** at the client nodes 56.

EX1004, 27:14-19.

Tellingly, however, Ogdon ***only*** discloses the "download" approach for delivery of presentation materials (*e.g.,* slides, images, or video clips) and does not disclose "streaming" that content. The fact that Ogdon teaches "streaming" for audio, but not for video further teaches away from video streaming and, at the very least, demonstrates that Ogdon does ***not*** render obvious a video streaming system as claimed. EX2006, ¶[66]. Petitioner's exclusive reliance on Ogdon as rendering obvious a video "streaming" system (*e.g.,* Pet., 17) therefore fails.

5. Allen Teaches Away From Encoding the Same Video Into Multiple Copies Having Different Bitrates

Petitioner asserts that a POSITA would have modified Ogdon based on Allen to provide multiple bitrate encodings at a server with "a reasonable expectation of success." Pet., 23. Not only does Ogdon teach away from Allen's streaming technology, as discussed *supra* at §IV.A.4, Allen teaches away from dividing a video stream into streams of different bitrates.

Petitioner cites to three sentences of Allen's ***background*** section describing how a "sophisticated prior art encoding operation … ***might be*** set up." Pet., 20, 23 (citing EX1005, 12:1-5, 5:15-21, 3:16-18). But Petitioner fails to address the fact that Allen actively disparages and teaches away from precisely this approach. EX2006, ¶[103].

After introducing the background techniques cited by Petitioner, Allen goes on to criticize that approach, noting "the present architecture for delivering streaming media places ***insurmountable burdens*** on everyone in the value chain, and stands directly in the way of attempts to develop a viable economic model around broadband content delivery." EX1005, 13:5-8; EX2006, ¶[105].

Indeed, Allen goes on in great detail to explain how the "problems" with the prior art "background" multi-bitrate approach "***are many***, and include:"

- Requiring "an ***impossible number of streams***" to accommodate clients with "wildly varying bit rates." EX1005, 116:13.
- None of the available selections may match the end users' particular requirements . . .
- Simultaneous transmission in different formats needlessly consumes network bandwidth.
- No ability to localize either formats or content.
- There is no means, after initial system setup, to reallocate resources among the various encoders.
- Because of bandwidth requirements and complexity, the prior art approach cannot be readily scaled.

EX1005, 4:8-25, 9:12-10:4, 116:13, 6:3-20, 5:1-3, 10:5-8; EX2006, ¶[104].

In view of these many "problems" and "limitations," Allen concludes that "it is ***highly probable*** that the user will have a ***suboptimal experience***" if a stream is divided into streams of different, predetermined bitrates—precisely the approach Petitioner is proposing in its combination. EX1005, 10:5-8.

Moreover, Allen's actual solution is to ***avoid*** multi-bitrate encoding. Allen's solution involves encoding the video at only a ***single bitrate***, and to move this encoding task to the "last mile," or "edge" of the network (*i.e.,* "one hop (in a network sense) from the end users."). EX1005, 104:9-11, 116:15-21; EX2006, ¶[106]. This takes advantage of the fact that "likely … all of the users have the ***same network speed***" when they are all just "one hop" from the edge server performing the encoding. EX1005, 104:9-16, 116:6-21; EX2006, ¶[106].[5] Thus, rather than allowing a client to choose the optimal bitrate for its current network conditions, Allen would have the edge network operator determine a bitrate for its network customers. EX1005, 100:4-10; EX2006, ¶[106].

Thus, Allen discourages use of a multi-bitrate approach and, proposes instead as a single-bitrate approach—the exact opposite of the claimed invention. EX2006, ¶[106]. This is the epitome of "teaching away." *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1068 (Fed. Cir. 2018) (vacating Board's determination of obviousness for failure to properly analyze portions of the references that taught away from the claimed invention); *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 448 (Fed. Cir. 1986) ("It is impermissible …

[5] Allen discloses that "two or three" streams would still need to be encoded in different "formats," but those correspond to different client media players/operating systems, not different bitrates. EX1005, 104:15-19, 7:10-14, 116:16-19; EX2006, ¶[106].

to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to" a POSITA.).

Taking the teachings of the references as whole, a POSITA would have been led away from the claimed solution, not toward it. The only way Petitioner and its expert could reach the opposite conclusion is by improperly ignoring these teachings, and using the claims as a roadmap. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327-28 (Fed. Cir. 2009) (precedential) (upholding nonobviousness when prior art references "'criticize, discredit, or otherwise discourage' investigation into the invention claimed" such that "a person of ordinary skill would have been deterred from combining [the references] in the manner that [petitioner-defendant] proposes.") (citing *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

6. The Combination Changes Ogdon's Principle of Operation

As discussed above in §IV.A.4, Ogdon is directed to increasing access to presentations for remote participants who lack the ability to stream video by providing alternative content. EX2006, ¶[108]; *see also* IPR2024-00146, Paper 9, 40.

Petitioner, however, proposes turning Ogdon's principle of operation on its ear by ***reverting*** Ogdon's non-streaming solution ***back into*** a video streaming solution—the exact thing Ogdon sought to avoid. EX2006, ¶[109]. This is improper

and reeks of hindsight reasoning. *See Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 758 (Fed. Cir. 2015) (affirming PTAB nonobviousness determination where combination would alter primary reference's "principle of operation" by replacing primary feature touted as the "invention"); *Adidas AG v. Nike, Inc.*, 963 F.3d 1355, 1358-59 (Fed. Cir. 2020) (precedential) (same).

It is simply improper to assert obviousness based on replacing the content-substituting feature that Ogdon touts as its invention with a video streaming solution that would fail to support the limited-bandwidth networks Ogdon was concerned with. EX2006, ¶[109].

Petitioner contends that changing Ogdon's principle of operation to provide the same video content in different bitrates would be "convenient and practical" because "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." Pet., 23. But Petitioner and its expert fail to describe how the proposed modification would be implemented in the multi-tiered control configuration of Ogdon. Specifically, Ogdon discloses both a "presentation leader," who controls the presentation, and a "host" that instructs the client nodes to retrieve presentation content. EX2006, ¶[110]. Would multi-bitrate encoding be "convenient and practical" to implement at the host or leader sub-systems? Petitioner does not say. And in terms of content "generation," Ogdon merely discloses "dynamic[ally] [] generated … data collected from audience member responses," and does not disclose

any video content generation or encoding process that would even potentially be ripe for modification. EX1004, 16:23-25; EX2006, ¶[111].

Thus, a POSITA would not have modified Ogdon with Allen as Petitioner proposes and would not have expected success in doing so.

7. Ogdon Fails to Disclose or Render Obvious "Streamlets" of the Same "Duration"

Petitioner is incorrect that Ogdon's "segments" are the "same duration" merely because Ogdon describes how different versions of the presentations may have segments that "correspond[]" to each other. Pet., 25-26. This flawed reasoning hinges on the incorrect assumption that Ogdon's different "versions" of "segments" are different qualities of the same type of content—specifically, a video. *Id.* They are not. Rather, they are different types of content altogether—e.g., a video versus a single image—that, by their very nature, have different lengths (or no length whatsoever). EX2006, ¶[113]. The Board's preliminary finding that "Ogdon describes storing *different versions* of a presentation, rather than multiple *copies of the same video*," confirms as much. IPR2024-00146, Paper 9, 40. Petitioner's expert was unable to identify any embodiment of Ogdon where different presentation versions included different quality versions of the same video. EX2009, 93:16-94:10 (discussing Ogdon "example where the alternative to full animation is a slideshow"), 87:7-10 (discussing Ogdon example where alternative version "is just a slide, a graphic slide.").

Indeed, Ogdon describes changing the content of its "segments" as network conditions change, rather than changing the quality of the same content. Ogdon steps down content types in the following order: animation sometimes including videos → combination of images or single image → only text, as discussed *supra* at §IV.A.1. Ogdon will even skip a "segment" altogether if it cannot be retrieved before the "presentation leader" moves on to the next "segment." *See, e.g.*, EX1004, 24:28-39 (explaining what happens when "segments are not retrieved in time for performance").

In this regard, the length of time that any "segment" in Ogdon is displayed, if at all, is entirely ***independent*** of the content of that "segment." EX2006, ¶[115]. The presentation leader will progress through the slides in the same manner whether a "segment" includes a single image or a "segment" includes a video. This is true even though the "segment" with the single image technically has no length whatsoever compared to the video. *See* EX1006, 107 (recognizing that "discrete media," like an "image file," "has ***no intrinsic duration***," while "continuous media," like a "video," has "a ***measurable and well-understood duration***."). Both "segments"—the version with the single image and the other with the video—will be displayed until the presentation leader indicates that the next "segment" should be displayed, or that the presentation is over. *See, e.g.*, EX1004, 4:29-36 (explaining how host nodes "receiv[e] ... presentation instructions from a presentation leader indicating the next presentation segment(s) to be presented"), 21:16-19 ("the leader(s) may choose to

identify [the next] segments"); 21:24-29 (referring to "the leader supplied identifications for the segment collection"). And Ogdon discloses that one "segment" can be presented as an alternative for the other, even though they have different durations. EX1004, 2:55-61; EX2006, ¶[115].

Indeed, Ogdon discusses that its "segments" are only "***approximately*** the same presentation duration," and even then, this is only an "assum[ption]" Ogdon makes in discussing a possible use of its approach. EX1004, 2:49-55 (emphasis added). Ogdon specifies simply skipping a "segment" if a particular "version" is too long, or too large. *Id.*, 24:28-39. Ogdon disclosing that it is acceptable to disrupt its visual content, including use of corresponding segments that are only "approximately" the same durations, is antithetical to the claimed streamlets of the '554 Patent. Those streamlets are tailored with precisely identical content across corresponding streams of different quality (*e.g.*, low quality, medium quality, and high quality streams) to enable uninterrupted video streaming.[6] In short, Ogdon's reference to "segments" of "***approximately*** the same presentation duration" does not map to the "streamlets" of the "same [] duration" or "equal playback duration" recited in the challenged claims. EX2006, ¶[120].

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[6] As discussed *supra* at §IV.A.1, Ogdon provides "continuity in the presentation" by ensuring the ***audio*** portion of the presentation proceeds, "regardless of whether the ***video*** portion for the presentation is displayed or not." EX1004, 24:28-39 (emphasis added).

In fact, Ogdon's "segments" cannot be the same duration because Ogdon touts "advantages" of providing segments with ***different*** durations. EX1004, 6:44; EX2006, ¶[121]. According to Ogdon, "this enables ***dynamic control of the pace*** of the presentation by a presentation leader while each client node selects specific materials ***to attain that pace***." EX1004, 6:40-47. A client node can therefore request shorter- or longer-duration segments based on the presenter's indicated "pace." EX2006, ¶[121]. Ogdon thus teaches away from segments of the same duration, which would not have this "advantage."

Recognizing that no prior art reference discloses this key limitation, Petitioner and its expert allege that a POSITA would have been motivated to modify Ogdon to create equal-duration alternative segments "to provide seamless streaming for the user." Pet., 25; EX1003, ¶78. But Petitioner's expert admitted during cross examination that support for this theory came not from the prior art, but from the common knowledge of a POSITA who would have found the claimed approach "simpler." EX2009, 211:4–213:22 (articulating benefits, coextensive with those disclosed in the '554 Patent, of time-dividing streamlets with the same duration and concluding that "the system would be simpler."). This form of hindsight-based reasoning is doubly improper where, as here, the reasoning is "used to supply a limitation missing from the prior art," and where that "missing limitation goes to the heart of [the] invention" and "plays a major role in the subject matter claimed." *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362-1363 (Fed. Cir. 2016); *see also*

DSS Tech. Mgmt., Inc. v. Apple Inc., 885 F.3d 1367, 1377 (Fed. Cir. 2018) (reversing PTAB obviousness finding for insufficient reasoning based on conclusory expert opinion to supply a missing limitation); EX2006, ¶[122].

Moreover, Petitioner and its expert provide no analysis explaining how Ogdon could be modified to achieve this purportedly "simpler" approach, nor that a POSITA would have a reasonable expectation in such a modification. Ogdon articulates the benefit of its system is that the presentation may adapt and change based on user feedback and questions, permitting "audience member involvement in the presentation." EX1004, 3:8-23, 4:41-67 ("[T]he leader can choose to change scripts in the middle of a presentation based on user feedback" including the ability to "stop presentation … and change to a different subcollection of segments…. Subsequently, the leader can resume the initial script at any time."). How a POSITA could take a system designed for presentation flexibility based on audience feedback and convert it into a system with rigidly time-aligned streamlets is left to the reader's imagination. This is not sufficient to establish obviousness. As the Federal Circuit has noted: "a clear, evidence-supported account of the contemplated workings of the combination is a prerequisite to adequately explaining and supporting a conclusion that a relevant skilled artisan would have been motivated to make the combination and reasonably expect success in doing so." *Personal Web Techs, LLC. v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017); *see also ActiveVideo Networks v. Verizon Comms*, 694 F.3d 1312, 1327 (Fed. Cir. 2012) (JMOL of nonobviousness where the

"expert failed to explain how specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims.").

B. Ogdon Fails to Disclose a "Virtual Timeline"

Although the term "virtual timeline" is broad enough to be met by a "playlist" and, therefore, is not limited to "entire content files," as discussed *supra* at §III.A, Ogdon's "scripts" cannot be read onto the claimed "virtual timeline" because the challenged claims require that a server (*e.g.*, a "web server") send the "virtual timeline" to the ***client*** (*e.g.*, an "end user station"). EX2006, ¶[141]. Ogdon, on the other hand, describes a "content manager 104" that "distributes presentation data, such as scripting information for a presentation." EX1004, 9:31-33. The "host 200" then must "request the one or more scripts for the presentation from the content manager 104" before providing them to "client nodes 56" for "presentation performance to their respective audience members." *Id.*, 18:37-40, 21:50-58. Thus, Ogdon's server sends a script to hosts—not clients. EX2006, ¶[141]. In other words, Ogdon fails to disclose or suggest a client requesting its "script" or a server response to the client and, therefore, does not disclose or suggest the claimed "virtual timeline."

C. Ogdon And Allen Fail to Disclose Individual "Streamlet Requests"

Independent Claims 16, 26, and 30 each recite "stream[ing] a live event video" by placing a "***streamlet request***."[7] In other words, those claims require a client to place a single request to a server for a single streamlet. Even if Ogdon's "segments" could be considered "streamlets" (they cannot), Ogdon fails to disclose or suggest this limitation.

Petitioner relies on Ogdon's general description of a "client-request" as allegedly corresponding to a request for a single "streamlet." *E.g.*, Pet., 29-31. Petitioner argues, and the Board preliminarily agrees, that "Ogdon's presentation segments teach the recited 'streamlets,' and that a ***collection or subcollection*** of presentation segments teaches the recited 'group of streamlets.'" ID, 24; Pet., 24. But Ogdon never describes requesting anything less than a "collection or subcollection" of "segments."

Ogdon describes making ***batch*** requests to retrieve an entire "collection" of segments, which it also refers to as a "subversion" or "subcollection" of the overall presentation. Specifically, Ogdon discloses:

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[7] Dependent Claims 4 and 7 recite similar limitations regarding a "streamlet request … to retrieve the first streamlet." Dependent Claim 23 recites similar limitations regarding a "streamlet request" based on the "request[ed] and receive[d] [] virtual timeline."

> [C]lient node 56 provides the identity of the …next ***collection of segments*** …and the browser, in turn, sends a ***…request*** to the selected web server for ***the selected (subversion) of segments***. …the 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 [in] …time …the client presentation Software 88 determines whether the ***requested collection*** of segments is cached …prior to the proposed performance of the collection of segments.

EX1004, 23:41-54 ; *see also id.*, 22:55-58 ("***request***" for the sizes of a "candidate ***collection*** of one or more presentation elements"), 24:17-21 ("***requested*** segment ***collection***"), 24:40-49 ("obtaining the ***requested collection*** of segments"), 24:60-65 (same).[8] Ogdon further discloses that these "collections," or "subcollections," are "intended to be an ***indivisible*** portion of a presentation performance." *Id.*, 2:39-42 (emphasis added). Thus, Ogdon discloses requesting an ***entire*** "collection of segments," rather than individual "segments," much less subdivided portions of those "segments" (*i.e.*, "streamlets"). EX2006, ¶[124-129].

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[8] Ogdon also discloses that "segments [are] transferred to client nodes in ***bursts***." EX1004, 6:1-7 ("[D]elivering an ***entire collection of presentation segments to a client node*** while the presentation is being performed. This enables a more smooth flow of data during the presentation ***even though the segments may be transferred to the client nodes in bursts***.") (emphasis added); *see also id.,* 22:66-23:23.

Even if, *arguendo*, multiple video "segments" in Ogdon could be considered subparts of the same video by virtue of their being part of the same "collection" (they cannot, as there are only discrete videos in each "segment" in Ogdon), Ogdon only describes requesting complete collections, rather than subparts of those collections. And even if Petitioner were to argue the "collection" is a single "segment" (*e.g.*, EX1004, 19:52-59), then there also is only a single video that can be requested, without subparts. A request for a single "segment" therefore cannot correspond to a request for a single subpart of a video (*i.e.*, a request for an individual "streamlet"). It is, at most, a request for an entire video that is ***not*** part of a collection with any other videos. Thus, Ogdon always requests an entire "collection" of video "segments," rather than subparts of a video, including when a "collection" only includes a single "segment." EX2006, ¶[130].

In contrast to Ogdon's requests for entire "collections" or "subcollections" of "segments," the claimed requests for individual streamlets are advantageous because they allow fine-grained client control over the streaming process. EX2006, ¶[131]. This is because it is the client making a request for each individual portion of the video encoded at the desired quality level. *Id.*; EX1001, 9:41-54. The benefit of this functionality allows for the use of standard Web servers, not expensive media servers, which reduces cost and complexity. EX2006, ¶[131]. By contrast, Ogdon's approach, if applied to a continuous video stream, would result in buffering or skipping entire "segments" if network conditions change while downloading an

entire "subcollection." *See supra* §IV.A.1. Ogdon therefore, fails to disclose "plac[ing] ***a streamlet request*** to the server."

D. Ogdon Fails to Disclose "Adaptive-Rate Content Streaming" (Element 1[Pre]).

Patent Owner respectfully contends that the Board's conclusion that "Ogdon teaches the preamble" (ID, 18) is contradicted by its correct finding that Ogdon fails to disclose encoding the same video at different bitrates (IPR2024-00146, Paper 9, 40).[9] *See also* IPR2024-00047, Paper 8, 18; IPR2024-00048, Paper 8, 18 (same); IPR2024-00147, Paper 9, 19 (same).[10] Even if Ogdon disclosed video "streaming" (it does not; *see supra* §IV.A.4), a POSITA would have understood that "adaptive-rate content streaming" requires the ability to adaptively select among different bitrate versions of content for streaming. EX2006, ¶[133]. Because the Board confirmed that Ogdon does not disclose providing multiple different bitrate versions of the same video, Ogdon also cannot disclose the ability to adaptively select among different bitrate versions of the same video for streaming. EX2006, ¶[133].

As discussed above, Ogdon is directed to an ***adaptive content*** system where different ***types*** of content are provided to users (*e.g.,* switching from content "as

[9] Petitioner does not cite to Allen or any other reference as teaching the preamble. *See, e.g.*, Pet., 14-16.

[10] The portion of Claim 1's preamble that recites "adaptive-rate content streaming" is limiting because it is necessary to give life, meaning, and vitality to the claim. EX2006, ¶[132].

simple as a single image" to content "as complex as a combination of images, audio, animation and video"). EX1004, 2:66-3:8. This selection of entirely different content is fundamentally different from adaptively adjusting the bitrate of the same video content during streaming, as required by the challenged claims. EX2006, ¶[134]; EX1001, 7:31-36, 13:21-26. Thus, Ogdon fails to disclose or render obvious "adaptive-rate content streaming of video."

E. Ogdon and Allen Fail to Disclose a Client Stream Selection.

Independent Claim 16 recites "select a specific one of the low quality stream, the medium quality stream, and the high quality stream based upon a determination by the end user station to select a higher or lower bitrate version of the streams." Independent Claims 26 and 30 and dependent Claims 4 and 7 similarly recite a "currently selected" stream. All five claims require that this video stream "selec[tion]" be "based upon a determination by the end user station to select a higher or lower bitrate version of" the streams of the live event video." Ogdon and Allen cannot be relied upon to show this feature.

Petitioner relies ***solely*** on Ogdon as allegedly disclosing these limitations. *See, e.g.,* Pet., 45-47 (citing to Ogdon's disclosure that "the client presentation software ... uses its most recent network 70 data transmission characteristics ... to select ... ***an appropriate version*** of the next collection of segments to be retrieved" as allegedly meeting this limitation). But as explained *supra* at §IV.A.4, Ogdon does not disclose or suggest a "plurality of streams" from which a higher or lower quality stream can

be selected. *See* IPR2024-00146, Paper 9, 40 (preliminary finding that Ogdon fails to disclose "storing multiple copies of *the same video*"). Ogdon therefore cannot disclose making a "select[ion]" from a "plurality of streams." EX2006, ¶[136].

Allen cannot be used to cure Ogdon's deficiencies. First, the Board cannot *sua sponte* rely on Allen for this purpose since Petitioner did not advance this argument. *See supra* §IV.D. Second, Allen only describes receiving "***manual input*** (click button, check box, etc.) to indicate ... the desired delivery bit rate," rather than a "content player," "end user station," or "client module" making a "determination" and "selection" as required. EX1005, 4:2-6 (emphasis added); EX2006, ¶[137]. Third, Allen disparages the concept of creating a "plurality of streams" in favor of a fundamentally different approach in which only a single bitrate is encoded in the "last mile" of the distribution network. *See supra* §IV.A.5. Thus, Allen teaches away from a system requiring such a selection and, therefore, teaches away from the ***further*** modification to provide the missing functionality. EX2006, ¶[137].

F. Ogdon Fails to Disclose "a Plurality of Web Servers ... Retriev[ing] from the Storage Device the Requested First Streamlet"

Claim 4 recites "a plurality of web servers located at different locations across the internet" that are each configured to retrieve the same streamlets from "the storage device" in response to client requests. In other words, Claim 4 requires ***different webservers*** that, in response to client requests, each retrieve ***the same*** content from ***the same*** central storage device. While Ogdon describes a plurality of

webservers at different locations, Ogdon fails to disclose or suggest this limitation because Ogdon's separate webservers each retrieve ***different*** content from their ***own local storage device***; they do not each retrieve content from ***the same central storage device***, as claimed. EX2006, ¶[138].

The '554 Patent refers to the configuration recited in Claim 4 as a "proxy cache." EX1001, 7:1-3. The '554 Patent explains that a plurality of "proxy cache servers" replicate content from a central content server by "asking for content ***on behalf of*** the client module." *Id.,* 7:3-6. Accordingly, the '554 patent discloses a process where content is cached at a plurality of remote proxy cache servers after first retrieving that content from a central storage device responsive to client requests. EX2006, ¶[139].

Although Ogdon describes an embodiment in which ***clients*** retrieve different content from "content webservers" (EX1004, 19:54-67), Ogdon fails to disclose a plurality of ***webservers*** that each retrieve the same content from a central storage device responsive to client requests. EX2006, ¶[140]. Thus, contrary to Petitioner's contention, Ogdon does ***not*** disclose the "proxy cache" configuration recited in Claim 4.

V. GROUND 2 FAILS

A. Ogdon in View of Allen and SMIL 2.0 Fails to Disclose "Streamlets" With the Same "Duration"

Petitioner relies on the Synchronized Multimedia Integration Language 2.0 ("SMIL") specification for "certain limitations"—namely, "streamlets" that are of "equal durations" across corresponding portions of different streams. Pet., 54-56. But SMIL does not cure the deficiencies in Ogdon/Allen.

Like Ogdon, SMIL is directed to "multimedia presentations," like PowerPoint slides or HTML-based webpages. EX1006, 1; EX2006, ¶[147]. It defines "an XML-based language that allows authors to ... associate hyperlinks with media objects and describe the layout of the presentation on a screen." *Id*. It also allows authors to "describe the ***temporal behavior*** of a multimedia presentation," such as how long a particular slide or webpage will be displayed during a presentation. *Id.* (emphasis added); EX2006, ¶[147]. But that "temporal behavior" corresponds to how long the page author wants a slide or webpage is displayed, not the length of the various elements (*e.g.*, a video, a single image, etc.). EX2006, ¶[147]. This is akin to the "segments" in Ogdon, which are presented for the same length of time, regardless of whether they include a video or a single image. *See supra* §IV.A.1.

Specifically, SMIL defines "media object elements" that "allow the inclusion of media objects into a SMIL presentation." EX1006, 108. These "media object elements" are similar to the "unique (multi)media element[s]" in Ogdon, which

SMIL discloses as being content as simple as a "[s]till image, such as PNG or JPEG," or content as complex as "[a]nimated vector graphics" or a "[v]ideo clip." *Id.*; *see also* EX1004, 2:66-3:8 (stating "a multimedia element ... can be as simple as a single image or as complex as a combination of images, audio, animation and video"); EX2006, ¶[148]. SMIL states that an "[i]mage file ... has ... an ***intrinsic duration*** of zero," while a "video file ... has an ***intrinsic duration*** defined by the media [itself]." EX1006, 107. These durations are independent of the display length set by the author of the SMIL code. EX2006, ¶[148].

SMIL separately defines the duration of "media object elements" from the duration of the slides or webpages in which those elements appear. SMIL states that images, animations, and video files are assigned a "simple duration" that may be an arbitrary length (*i.e.*, a non-zero "[c]lock-value"), the "intrinsic duration" of the media itself, or "indefinite." EX1006, 128-29. According to SMIL, animations and videos also may be repeated on the slide/webpage over a longer period using the <repeatCount> attribute, which is referred to as the "active duration" of that content. *Id.,* 31. The duration of the slide or webpage, on the other hand, is defined by the <par> attribute, which "supports ***all*** element timing" and may be greater than, less than, or equal to the "active duration." *Id.,* 157 (emphasis added); *see also id.,* 123; EX2006, ¶[149].

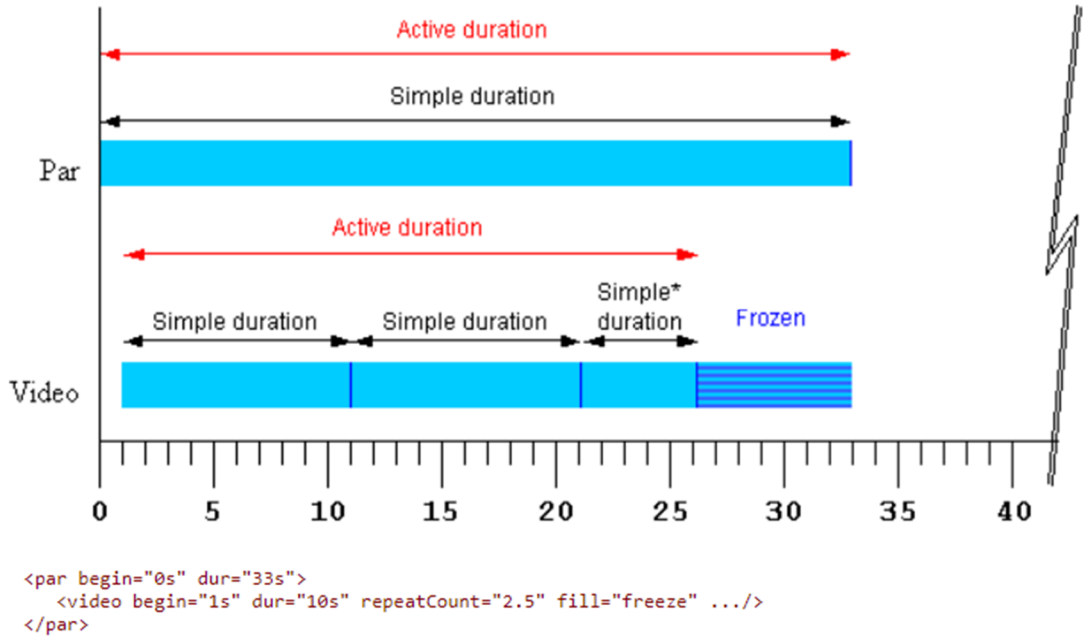
In multiple examples, SMIL establishes that the "intrinsic duration" of each "media object element" is ***independent*** of how long they are actually displayed. This

includes Petitioner's own example in which a "media object element"—specifically, an image of a square—is changed every five seconds. Pet., 56; EX2006, ¶[150]. The image in that example has "an intrinsic duration of ***zero***," as SMIL acknowledges. EX1006, 107. Yet, SMIL allows it to be assigned a duration of 5 seconds. *Id.,* 278.

By way of further example, SMIL describes how a ten-second video clip can be repeated over a 33 second period. EX1006, 124. Both the "simple duration" and the "active duration" of the video are less than the duration of the slide or webpage in which they appear (*i.e.*, the <par> value), such that the video is "frozen" for the remainder of the presentation of that slide or webpage, as depicted below. *Id.,* 123-124.[11]

[11] This image was retrieved from the URL link provided in footer of EX1006. *See* EX2087.

SMIL Video Example



SMIL also contemplates a video being "cut short" when a presentation proceeds to an entirely different slide or webpage before a video finishes playing. *Id.*, 129 ("If the author specifies a value for dur that is shorter than the implicit duration for an element, the implicit duration will be ***cut short*** by the specified simple duration") (emphasis added), 131 ("[T]he element will end at the earlier of the intrinsic media duration, or a mouse click."). Therefore, like Ogdon, the duration of each actual slide or webpage is entirely independent of the duration of any embedded content (*e.g.*, a video). EX2006, ¶[154].

Also relevant in these examples is that neither the colored squares in Petitioner's example nor the video in Patent Owner's example is a portion of a larger video (*i.e.*, "streamlets"). The example squares are either different colors (*i.e.*, blue, green, red) or different types of content (*i.e.*, a JPG or "brush element") that may be

substituted for one another, like Ogdon's "segments." And the example video is simply played in a loop until it freezes half-way through the third loop. EX1006, 113-14, 123. Neither example, nor any other example in SMIL, is encoded at a plurality of bitrates or time-divided into segments of equal duration. EX2006, ¶[155].

In sum, nothing in SMIL defines the duration of a video. That duration is ***intrinsic*** to the video itself. Nor does anything in SMIL correspond to a "streamlet." EX2006, ¶[157]. At most, SMIL describes instances of different content that are displayed the same length of time as the slide or website in which they are embedded, such that a video will either be "frozen" if the slide or website is displayed for a duration greater than the "intrinsic duration" of the video or the content is "cut short" if the slide or website is displayed for a duration less than the "intrinsic duration" of the video. EX1006, 123-124, 129, 131. SMIL therefore suffers from the same deficiencies as Ogdon/Allen.

B. SMIL 2.0 Fails to Disclose a "Virtual Timeline"

As discussed supra at §IV.B, the challenged claims require that a server (*e.g.,* a "web server") send the "virtual timeline" to a client and Ogdon does not disclose this architecture. SMIL is similarly deficient. Petitioner attempts to rely on SMIL's <seq> element, and its use to define "sequent containers," as allegedly disclosing the claimed "virtual timeline." Pet., 57. But SMIL's structured language document does not cure the architectural deficiencies of Ogdon. EX2006, ¶[159]. And

Petitioner does not describe how the proposed combination would work in Ogdon's multi-tiered control system (§IV.A.6), which includes a presenter, host, content servers, and client. Pet., 57-58; EX2006, ¶[159]. SMIL therefore fails to cure the deficiencies of Ogdon.

VI. STRONG EVIDENCE OF SECONDARY CONSIDERATIONS PRECLUDE OBVIOUSNESS

Objective evidence of industry praise and peer recognition, surprising results and superior performance, commercial success, long-felt but unmet need, failure of others, and copying of the invention in the challenged patent constitute "independent evidence of nonobviousness" of the challenged claims. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1378 (Fed. Cir. 2012); *Apple Inc. v. Samsung Elecs. Co.,* 839 F.3d 1034, 1048 (Fed. Cir. 2016) ("Objective indicia of nonobviousness must be considered in every case where present"). MOVE Networks, Inc. ("MOVE") revolutionized how content is delivered and experienced over the Internet by successfully developing the Emmy-winning adaptive-bitrate ("ABR") technology of the challenged claims. EX2060 (Silverlight Press Release), 2 ("MOVE has developed an adaptive streaming technology that seamlessly adjusts image quality to fit available bandwidth on each viewer's Internet connection, creating a high-quality Internet television viewing experience."); EX2013. MOVE's product, the MOVE Media Player, embodied the patented ABR technology, and launched in 2006. EX2014. Using the patented ABR technology embodied in these claims, a user

achieves less buffering, faster starts to video, and a dramatically improved viewing experience with both high-bandwidth and low-bandwidth connections. EX2060, 2; EX2010 (Decl. of Inventor Robert Drew Major), ¶[11]. For the first time, viewers could enjoy streaming video content in a manner rivaling that of traditional cable and satellite delivery. *See, e.g.*, EX2060, 2. In 2010, one of Patent Owner's subsidiaries acquired MOVE—including the challenged patent—for $45 million. EX2080.

A. The Streaming Products Offered by DISH (and Predecessor MOVE) Embody the Claimed Invention.

MOVE's contemporaneous documents show that the MOVE Media Player practiced the challenged claims. *See* EX2006 (Decl. of Dr. Jeffay), ¶¶[164-188]; EX2012 (MOVE Networks Tech Overview); EX2011 (Streaming Media Technology); *see also* EX2062. To this end, Dr. Jeffay provides his expert analysis of the MOVE Media Player showing it practices each limitation of the challenged claims on an element-by-element basis and that the player is co-extensive with the claimed invention. *See* EX2006, ¶¶[164-188]. MOVE's documents also describe the real-world benefits of the MOVE Media Player, which Dr. Jeffay explains are a "direct result of the unique characteristics of the claimed invention." *Fox Factory Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373-74 (Fed. Cir. 2019); EX2011; EX2006, ¶¶[164-186]. For example, when users praised the MOVE Media Player as being "especially impressive," they tied this praise to the expressly claimed features, such

as "actively adjusting ... video quality to the bandwidth available" and delivering "pieces of content progressively." EX2023 (Move a Next Gen. Content Dist Platform).

Thus, DISH is entitled to a presumption of nexus. EX2006, ¶¶[164-188], [227]; EX2062; *see* EX1009, 112-113, 133, 151-152, 165-166 (finding Sling TV practices the inventive features of the ABR Patents); *Fox Factory,*, 944 F.3d at 1373 (Fed. Cir. 2019) ("[A] patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product '*is* the invention disclosed and claimed.'").

B. Long-Felt but Unmet Need and Failure of Others

The patented ABR technology achieved success where others failed. EX2006, ¶¶[189-196]; *see also* EX2010, ¶¶[7-10], [13]. The claimed invention solved a long-felt need for streaming live and on-demand content over the Internet. *See Apple*, 839 F.3d at 1053 ("it is reasonable to infer the need would not have persisted had the solution been obvious."). In this regard, "longfelt need is closely related to the failure of others." *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1082-83 (Fed. Cir. 2012). "Evidence is particularly probative of obviousness when it demonstrates ***both*** that a demand existed for the patented invention, and that others tried but failed to satisfy that demand." *Id.* That is the case here.

Before the introduction of the ABR technology claimed in the challenged patent, the quality, fluidity, and reliability of streaming video technology was inferior to that of traditional television. EX2006, ¶[190]; EX2010, ¶¶[7-9], [11-12]. The resulting need for a way to watch video content in higher quality over the Internet was unmet, with prior attempts failing from buffering, hesitancy, delays, stalling, freezing, and unresponsiveness. EX2006, ¶[190]; EX2010, ¶[11]; EX2011. Users of dial-up Internet typically would not even attempt video streaming, while broadband users often gave up after prolonged waiting or unresponsiveness. *E.g.*, EX2006, ¶[190]. The length of an average video streaming session was limited to only a few minutes. *See, e.g.*, EX2024 (Better than YouTube) ("3 or 4 minutes"); EX2025, 1 ("under three minutes"); EX2026, 2 ("close[] to three minutes"); EX2006, ¶¶[190-191].

Faced with "consumer's real, pent-up demand for HD content," EX2027, the industry recognized that "whoever can solve or bypass these problems [with network bottlenecks and slow connection speeds at people's homes] will become adopted by more video sites as the demand for HD video continues to rise." EX2048; EX2006, ¶¶[192-193]. Ultimately, it was the patented ABR technology that first deemed "good enough" to do what "many in Hollywood and Silicon Valley have so far been unable to do: take Internet video from its YouTube origins to a full-fledged television service with dozens of channels" that rivaled typical cable, satellite, and

terrestrial television. EX2028 (WSJ Pushing to Bring TV to the Internet); EX2006, ¶¶[192-193].

Brady Rafuse, president of competitor Level 3's Content Markets Group, had a similar reaction to the patented ABR technology, calling it "a significant technology enhancement -- a true step forward -- in the delivery of HD content over the Internet." EX2029, 3-4; EX2006, ¶¶[183], [216]. The technology was considered "groundbreaking" because, among other things, it would provide "a better live video experience for fans than that currently offered by any other service," such that even "a slow wireless connection" could "get a relatively good looking picture and more importantly, and entirely fluid stream." EX2030; *see also* EX2029 (explaining how MOVE's patented ABR technology "dynamically adapt[s] to changing network and end-user computer conditions" to "reduce its bit rate automatically, without buffering," so as to provide a "graceful transition – up and down – that most users will not even notice"); EX2006, ¶[216].

Competing technologies attempted but failed to meet this same need. EX2010, ¶¶[7-10]; EX2006, ¶¶[191-197]. These inferior technologies required infrastructure that was expensive, in both cost and bandwidth consumption. EX2006, ¶[195]; EX2010, ¶[7]. But no competing technology could achieve the same quality experience provided by the patented ABR technology. EX2006, ¶[197]; EX2010, ¶[23]. For example, after a demonstration of MOVE's product and technology to Level 3, a senior vice president at Level 3 asked MOVE personnel "why are the

current streaming protocols broken," further commenting that "[t]here is enough bandwidth but they cannot get the results you [MOVE] do." EX2031; EX2006, ¶[196]. Bloggers also "raved" about MOVE's product and its ability to remove the "technical barriers to delivering online HDTV." EX2033; EX2035.

After "adaptive bitrate streaming [was] brought to the fore by MOVE Networks," companies quickly adopted the technology, turning "toward adaptive bitrate streaming" and MOVE's "technique of detecting a watcher's bandwidth and CPU capabilities in real time and then adjusting the quality of a video stream." EX2036; EX2026, 2; EX2006, ¶¶[187], [196]. For example, ABC.com abandoned its previous commitment to Adobe Flash in favor of integrating the patented ABR technology into its website. EX2034; EX2006, ¶¶[194], [196]. And Microsoft integrated MOVE's ABR technology into its Silverlight product. EX2032; EX2033; EX2006, ¶[197].

While companies like ABC and Microsoft transitioned to the patented ABR technology after dedicating substantial time and resources to the developing of their own technologies, others gave up altogether. *See* EX2006, ¶[193]. For example, both AOL and CBS tried and failed to develop a streaming solution. *Id.*; *see also* EX2037. Thus, there was both a long-felt need for the patented ABR technology and the failure of others.

Changes in customer usage patterns further demonstrates MOVE's fulfilment of the previously unmet need for high-quality streaming (and nexus to the claimed

invention). EX2006, ¶¶[191], [193], [210], [213]; EX2064. Following the adoption of the patented ABR technology, users began spending nearly an hour per session streaming content, as opposed to the few minutes spent previously. EX2006, ¶¶[193], [210]; EX2026, 2 ("more than 50 minutes"); EX2025, 1 ("more than 50 minutes"); *see also* EX2024 ("22 minutes a session, compared with 3 or 4 minutes" previously); EX2038 ("It also means people watch longer."). In other words, MOVE proved through its groundbreaking patented ABR technology that, "if you offer Internet viewers high quality, full-screen video content, they might sit still and watch an hourlong program." EX2026, 2; EX2006, ¶[210].

C. Surprising Results and Praise

MOVE's technology achieved what many thought impossible, and contributed to a major shift in the industry away from cable/satellite packages to internet streaming (*i.e.*, cord-cutting). EX2006, ¶[198]; EX2022; EX2027. Indeed, users of the MOVE Media Player embodying the patented ABR technology expressed a substantial amount of surprise when they first experienced the patented ABR technology. EX2006, ¶¶[199-202]; EX2022, 1 (describing ABC.com's implementation of MOVE's product as "shockingly good" and "spectacular"); EX2034. One user, who previously "thought we would be waiting years to see viable streaming HD technology," stated he "was a bit shocked" at the "clear glory" of MOVE's product, and that he couldn't "remember the last time that technology actually surprised [him] by arriving before [he] expected it." EX2027; EX2006,

¶[200]. The user further noted that, "[j]udging from the ABC site, the MOVE Networks stuff really works." EX2027.

The MOVE Media Player also was recognized as superior when compared to other streaming technologies at the time. EX2006, ¶¶[201-202]. For example, commentators observed that ABC's online player "clearly deliver[ed] a better, sharper picture" than NBC's player, which "clearly doesn't come close to the quality that ABC is offering" because it "relies on Adobe's Flash to stream their video." *Id*.; *see also* EX2039 (ABC Becomes First Network HD Streamer).

The industry also praised MOVE's patented approach of using an intelligent client which "determine[d] the best end-user experience intelligently." EX2006, ¶[201]; EX2038 (explaining that, with "MOVE's adaptive protocol ... the plugin can determine the best encoding profile for a user based on available bandwidth"). Those in the industry also recognized that "MOVE delivers its video as a standard web object that's cached in small bits—making its service ***infinitely more ISP-friendly*** than traditional streaming technology. MOVE also doesn't use special media servers and adjusts the video quality based on available bandwidth. This means no buffering, no stalling." EX2026, 2; EX2006, ¶[201]. Indeed, MOVE was considered to be "at the forefront" of Internet streaming due to its patented approach to "break[ing] up the video into bits…" EX2024; EX2040.

Similarly, the industry recognized MOVE's product as superior because it can "stream videos at an adaptive rate…" EX2006, ¶[202]; EX2041. Adopters of

MOVE's patented ABR technology also recognized it as "superior to others [they] have used" because of its "ability to manage large scale setup and operations with flawless delivery"—a feature found to be "unmatched" due in large part to the claimed manner in which the patented ABR technology creates "streamlets," allowing scaling using standard web servers. EX2006, ¶¶[185], [204]; EX2042; *see also* EX2043. These surprising results and praise are directly tied to the claimed features of the patented ABR technology. *See* EX2006, ¶¶[185], [198-204].

D. Commercial Success

The unique, patented features of the MOVE Media Player led to its commercial success. *See, e.g.*, EX2006, ¶¶[186], [205], [209]. As discussed *supra* at §VI.B, these features lead to dramatic increases in the length of the average streaming session with instant start-up and continuous playback. They also led to dramatic increases in the volume of content being streamed.

Within months of its 2006 commercial launch, the MOVE Media Player was being used to deliver roughly as much data as YouTube and more data than the web sites of CNN, NBC, and CBS, none of which used the MOVE Media Player. EX2006, ¶[206]; EX2024. MOVE was handling "more than a million full episode streams a week," with a sustained "viewership [that] [w]as doubl[ing] every month." EX2024; EX2006, ¶[206]. As a result, the number of times the shows had been streamed had risen to more than 34 million by March 2008. EX2010, ¶[22].

The commercial success of the patented ABR technology is also demonstrated by the number of companies that adopted the technology after it was made commercially available. *See generally* EX2006, ¶¶[211-229]. In addition to ABC switching from Adobe Flash to the MOVE Media Player and Microsoft integrating the patented ABR technology into its existing Silverlight product, as discussed *supra* at §VI.B, other leading content providers also adopted the patented ABR technology after its commercial release, including Fox, Level 3,[15] ESPN, and others. *Id.,* ¶¶[207-211], [218-228]. MOVE's customer base then quickly expanded to include the numerous other content providers, including the Oprah Book Club, Televisa, the CW, Comcast, and ProSieben. EX2006, ¶[227]; EX2014 (MOVE Awarded Fundamental Pat.). As a result, MOVE's "customers include[d] some of the largest media companies in the world." EX2045 (Microsoft Unlocks the Power of the Web), 2.

The commercial success of the patented ABR technology is further demonstrated by its success attracting investors in the technology. EX2006, ¶[225]; EX2047. In addition to a "strategic alliance" with Level 3 in June 2007, Microsoft took an equity stake in MOVE in August 2008. EX2060; EX2006, ¶[225]. Microsoft recognized MOVE as the "leader in HTTP-based video delivery" and attempted to piggyback on MOVE's success EX2060, EX2006, ¶[224]; EX2049; EX2050. And Microsoft specified that collaborating with MOVE would give it a "competitive edge in a crowded marketplace." EX2045. All this demonstrates that

Microsoft sought to expand the distribution of its own product by piggybacking on MOVE's success.

When MOVE announced the award of the first patent in the family of the ABR Patents, an analyst's article noted that "MOVE Networks just got a lot more valuable on the intellectual property front." EX2052; EX2014. That same article recognized that "[t]he awarding of the patent ... could pose a threat to Adobe, Microsoft, and Apple and many other companies that have rolled out adaptive streaming technology of their own." EX2052, 1.

MOVE and the ABR Patents were subsequently acquired by DISH and used to create Sling TV, a successful Internet streaming television platform offered by DISH. EX2010, ¶¶[18-22]. DISH has since licensed the ABR patents to ViacomCBS, Univision Communications, Peloton, lululemon, iFit, and others. EX2053, 23 n.100; EX2083; EX2084; EX2085; EX2006, ¶[228]. This type of licensing activity also favors a finding of nonobviousness. *Metabolite Lab'ys, Inc. v. Lab'y Corp. of Am. Holdings*, 370 F.3d 1354, 1368 (Fed. Cir. 2004).

E. Copying

The objective evidence suggests that competitors adopted MOVE's patented ABR technology. *See* EX2006, ¶¶[230-234]. MOVE disclosed its ABR technology to Apple in 2006 under multiple non-disclosure agreements ("NDAs"). *Id.*, ¶[234]; EX2055; EX2056. Although Apple declined to enter a business relationship with MOVE, it subsequently developed the HLS Standard, which is "very similar to what

MOVE had developed and was using as a proposed standard." EX2063, 38:20-40:7. Apple also "embraced adaptive bitrate streaming over HTTP at its developer conference" in June 2009. EX2036.

Similarly, Microsoft decided to implement its own version of HTTP-based ABR streaming technology, called "Smooth Streaming," shortly after its close collaborations with MOVE and access to the patented ABR technology. EX2057 (Email 2.23.09); EX2032 (Email 6.16.07); EX2033 (Email 11.26.07); EX2006, ¶[234].

Apple's and Microsoft's adoption of adaptive streaming solutions have also been recognized by others, who observed that, "since the introduction of MOVE's technology and the filing of the patent application in question, a number of video providers have followed [MOVE's] example with similar technologies of their own." EX2052.

F. Industry Praise and Peer Recognition

In addition to the praise noted above, the patented ABR technology also received numerous awards in the highly competitive streaming industry, including awards from AlwaysOn's OnHollywood 100, OnMedia 100, Red Herring 100, Red Herring Global 100, and TechCrunchies. EX2010, ¶[34]; EX2006, ¶¶[242-244]. Each of these awards emphasized the "innovation" of the MOVE Media Player, which was praised for delivering "the highest quality content and a preeminent viewing experience of online television." EX2006, ¶[242]. More recently, Sling TV,

which implemented the patented ABR technology after DISH's acquired MOVE and the ABR Patents, was recognized as a "pioneer in adaptive bitrate streaming" and received "the Technology & Engineering Emmy Award" in the category of "Pioneering Development of Large Scale, Cloud Served, Broadcast Quality, Linear Channel Transmission" at the Technology & Engineering Emmy Awards on April 19, 2020. EX2006, ¶[244]; EX2010, ¶[21]; EX2013 (SlingTV Emmy® Award).

Content distributors and competitors also praised the patented ABR technology. *See* EX2006, ¶¶[235-241]. Level 3 praised the MOVE Media Player as a "significant technology enhancement … in the delivery of HD content over the Internet." EX2044 (Level 3 Streams and Other News).

Similarly, Microsoft praised the patented ABR technology as "the highest-quality viewing experience available online — driving online revenue and a competitive edge in a crowded marketplace." EX2006, ¶[223]; EX2045. Microsoft described the technology as "an adaptive streaming technology that seamlessly adjusts image quality to fit available bandwidth on each viewer's Internet connection." EX2060; EX2058.

In addition, Tony Rallo, then-vice president of Technology Strategy for Televisa, stated: "Not only is MOVE's technology superior to others we have used, but their ability to manage large scale setup and operations with flawless delivery is unmatched." EX2042; EX2006, ¶[241]. This overwhelming evidence of industry praise for the claimed inventions weighs against an assertion that the same claimed

invention would have been obvious. *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1352 (Fed. Cir. 2010) (finding that praise from a competitor tends to indicate that the invention would not have been obvious).

Users also stated that MOVE's technology was "especially impressive," highlighting claimed features of the MOVE Media Player such as "actively adjusting its video quality to the bandwidth available" and delivering "pieces of content progressively via a piece of software downloaded and installed through the browser." EX2023. Users also praised the MOVE Media Player for allowing "greater amounts of data to be transferred by streaming the data from standard HTTP servers." EX2043; EX2006, ¶[237]. In addition, users praised the player for its "bottom-line technology advantage" of being "profoundly more efficient and less expensive," and providing "a dramatically better viewing experience." EX2026; EX2006, ¶¶[236], [238].

G. The ITC Credited The Same Evidence as Conclusively Demonstrating Nexus and Secondary Considerations for Nonobviousness for the ABR Patents.

The ITC found that this same evidence supported a finding of nonobviousness in a Section 337 Investigation that Petitioner is aware of and identified as a "related proceeding" in its Petition. Pet., 1-2. *See* EX1009, 213-17 ("I find that ***the objective indicia support a determination of non-obviousness. Thus, even if a hindsight combination of the prior art references identified by respondents would comprise every element of the claimed invention, I find that the objective evidence indicates***

a person of skill in the art at the time of the invention would not have found the invention to be obvious in view of those references."); EX1009, 213-17 (internal citations omitted); *see also* EX2005, 2 (adopting same).

VII. CONCLUSION

For the foregoing reasons, Patent Owner respectfully requests the Board uphold the validity of the challenged claims of U.S. Patent No. 10,469,554.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **PATENT OWNER'S RESPONSE** and Exhibits 2006-2088, except 2046, 2054, 2061 were served electronically on July 22 2024, on counsel of record for the Petitioner as follows:

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(a)(1)(i), the undersigned hereby certifies that the foregoing **PATENT OWNER'S RESPONSE** contains 13,376 words, excluding a table of contents, a table of authorities, mandatory notices under 37 C.F.R. § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing, as measured by the word-processing system used to prepare this paper.

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