Filed on behalf of: fuboTV Media Inc. and Yanka Industries, Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

fuboTV MEDIA INC. and Yanka Industries, Inc.,
Petitioners,

v.

DISH Technologies L.L.C.,
Patent Owner.

IPR2024-00919
Patent 8,868,772

PETITIONER'S REPLY

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1001	U.S. Pat. 8,868,772 ("'772 Patent")
1002	File History of U.S. Pat. 8,868,772
1003	Declaration of Dr. Henry Houh including Curriculum Vitae ("Houh declaration")
1004	International P.C.T. Publication WO 2002049343 to Leaning et al. ("Leaning")
1005	<RESERVED>
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1007	U.S. Patent No. 6,848,004 to Chang ("Chang")
1008	WO1997044942 to Kliger ("Kliger")
1009	337-TA-1265 ITC Investigation Initial Determination
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1011	<RESERVED>
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1013	U.S. Patent No. 6,637,031 to Chou ("Chou")
1014	<RESERVED>
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1020	U.S. Patent Publication No. US 2004/0093420 to Gamble ("Gamble")
1021	Transcript of Conference Call Before the Patent Trial and Appeal Board, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. Sept. 18, 2024)

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1022	Decision on Appeal, *Ex Parte Major*, No. 2011-008734 (PTAB July 23, 2014) (Application No. 11/116,783)
1023	U.S. Patent No. 11,991,234 File History
1024	Order Granting Request for Ex Parte Reexamination, Reexam Control No. 90/019,670 (U.S.P.T.O. Dec. 6, 2024)
1025	Transcript of Conference Call Before the Patent Trial and Appeal Board, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 29, 2025)
1026	Supplemental Declaration of Dr. Henry Houh in Support of Petitioner's Reply ("Houh2")
1027	Transcript of the Deposition of Kevin Jeffay, Ph.D., *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 8, 2025) ("Jeffay")
1028	T. Berners-Lee et al., *Hypertext Transfer Protocol – HTTP/1.0*, Network Working Grp. Request for Comments: 1945 (May 1996) (Exhibit 1 to the Deposition of Kevin Jeffay, Ph.D., *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 8, 2025) ("Jeffay-Ex.1")
1029	U.S. Patent No. 11,991,234 B2 (Brueck) (Exhibit 2 to the Deposition of Kevin Jeffay, Ph.D., *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 8, 2025) ("Jeffay-Ex.2")
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1031	Tom Risen, *Dish Network Joins Web-TV Trend With Sling: The New Service Will Include ESPN and Offers Another Alternative to Cable*, U.S. NEWS & WORLD REP. (Jan. 5, 2015) (Exhibit 4 to the Deposition of David Ericson, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 8, 2025) ("Ericson-Ex.4")

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1036	*Instant Video Streaming: Video Without the Waiting*, 1.7 BT Innovative Research: BT Research & Venturing: IPR Overview (Feb. 23, 2007) (Exhibit 1 to the Deposition of Peter Ratcliffe, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 15, 2025) ("Ratcliffe-Ex.1")
1037	*Declaration of Peter Ratcliffe Esq.*, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, No. IPR2024-00917 (P.T.A.B. Mar. 18, 2025) (Exhibit 2 to the Deposition of Peter Ratcliffe, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 15, 2025) ("Ratcliffe-Ex.2")
1038	World International Property Organization, International Publication No. WO 02/49343 A1 (Leaning) (Exhibit 3 to the Deposition of Peter Ratcliffe, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 15, 2025) ("Ratcliffe-Ex.3")
1039	European Patent Office, European Patent Specification, EP 1 342 363 B1 (Leaning) (Exhibit 4 to the Deposition of Peter Ratcliffe, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 15, 2025) ("Ratcliffe-Ex.4")

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1042	Hiroyuki Kasai et al., *The Development of a Multimedia Transcoding System for Mobile Access to Video Conferencing*, E85-B IEICE TRANSACTIONS COMMC'NS 2171 (Oct. 2002) (Exhibit 7 to the Deposition of Peter Ratcliffe, *fuboTV Media Inc. v. DISH Techs., L.L.C.*, Nos. IPR2024-00917, -00918, -00919 (P.T.A.B. May 15, 2025) ("Ratcliffe-Ex.7")
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1050	Supavadee Aramvith & Ming-Ting Sun, *MPEG-1 and MPEG-2 Video Standards* (1999), https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=f499594b35c573dd2296aa567ff16688bb972e3b (last visited June 5, 2025)

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1057	Hun-Cheol Lee & Seong-Dae Kim, *Iterative Key Frame Selection in the Rate-Constraint Environment*, 18 SIGNAL PROCESSING: IMAGE COMMC'N 1–15 (2003)
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1061	Video segment: akiyo_segment_cif-30_001.h261.mp4 (encoding with I-frames every 30 frames)
1062	Video segment: akiyo_segment_cif-60_001.h261.mp4 (encoding with I-frames every 60 frames)
1063	Video segment: akiyo_segment_cif-120_001.h261.mp4 (encoding with I-frames every 120 frames)
1064	*Curriculum Vitae* of Henry H. Houh (June 2025)

I. Introduction

Patent Owner's (PO's) arguments ignore the Petition and mischaracterize the prior art. The challenged claims would have been obvious and PO's secondary considerations lack nexus and cannot overcome the overwhelmingly strong obviousness case.

II. Claims 1-21 Are Obvious

A. Claim Construction

1. "Shift The Playback Quality … To Achieve Continuous Playback"

PO's arguments assume that "shift the playback quality … to achieve continuous playback" requires that the playback is completely uninterrupted in time and content. POR20 ("temporal" and "content-based" discontinuities). But, that is inconsistent with the intrinsic and extrinsic record. The claims' plain language only requires that the shift in playback quality is made "to achieve continuous playback." '772 patent (EX1001), cl. 1. Nothing in the claims requires uninterrupted playback before, during, or after the shift in quality. To the contrary, that the quality is shifted "to achieve continuous playback" suggests playback was ***not*** uninterrupted prior to the switch. At best, shifting quality "to achieve continuous playback" is aspirational, not limiting, language. *See Bristol-Myers Squibb Co. v. Ben Venue Laboratories*, 246 F.3d 1368 (Fed. Cir. 2001); EX1026 (Houh2) §V.B.

Further, the specification does not use the phrase "continuous playback," let alone equate or confine the term to uninterrupted playback. '772 patent Abstract, 3:46-56, 6:67-7:7, 8:41-44; Houh2 §V.B.

The file history does not suggest differently. Applicant distinguished prior art, explaining "Radford discloses ***manually*** selecting the quality of the streamed data in response to a poor viewing experience." EX1002 118.[1] In contrast, it explained the recited claims ***automatically*** shift the quality "to achieve continuous playback of the video." *Id.* The distinction was between manual (prior art) or automatic (claims) changes in playback quality. *Id.* There was no suggestion that "to achieve continuous playback of video" requires uninterrupted playback. Houh2 §V.B.

Similarly, Applicant distinguished other art, stating the claims "can achieve continuous playback … without the problem[s]" described in the prior art because "the shifts between the playback quality occur during playback at portion boundaries." EX1002 486. Applicant represented that shifts "happen on portion boundaries and the portion boundaries of the copies at the same time index in the video" which "***mean***[s] playback is continuous." *Id.* It distinguished the Li prior art

[1] Emphases added and internal quotation marks and citations omitted unless otherwise noted.

as allegedly teaching "buffering to reduce the number of required shifts." *Id.*; *see generally* EX1045 (Li); Houh2 §V.B.

Nor does extrinsic evidence support PO's interpretation. PO asserts that the MOVE player meets "continuous playback" despite concessions from its declarants that its playback was interrupted. EX1027 (Jeffay) 208:15-219:12; EX1032 (Major) 127:6-128:8; EX1030 (Ericson) 211:18-213:21; EX1034 (Mitchell) 54:7-55:14, 71:12-75:8; EX2022 27; Houh2 ¶39. But, the Petition established that the challenged claims would have been obvious under any construction.

B. Leaning Renders Obvious "Continuous Playback"

1. Petition Established That Leaning Discloses Or Renders Obvious "Continuous Playback"

PO asserts that "Leaning fails to disclose or suggest 'continuous playback'" and that the Petition "fails to address" the limitation "at all." POR23. PO is wrong on both counts. *Id.* 24-25; *see* Pet.35-40; Houh2 §§V.B, VII.

The Petition explained Leaning teaches "shift[ing] the playback quality … to achieve continuous playback." Pet.39 (citing 1[C]-1[D]). It relied on Leaning's teachings regarding avoiding playback interruption by avoiding underflow, i.e., achieving continuous playback, with a particular modification to its system. *See id.* 38 ("Leaning also explains 'that ***interruption***' of the video stream '***can be avoided***' and therefore it is preferable to employ a criterion which anticipates underflow and avoids it in the majority of cases' by omitting the first determination (*i.e.*, whether

the buffer is completely empty) ….") (quoting EX1004 (Leaning) 15:3-8, 8:11-16). Leaning describes the identified modification as "run[ning]" the sound card "***continuously*** at the highest sampling rate envisaged" to avoid "interruption[s]" in audio due to "re-setting" the sound card. Leaning 14:25-15:8; Houh2 ¶¶61-66.

PO ignores these teachings, asserting Leaning requires that "every time" the rate upshifts, "it clears the buffer." POR26. But, as Leaning teaches, by running the sound card "at the highest sampling rate envisaged" and up-sampling all audio to the highest rate before placement in the buffer, the system can adjust the communicated data rate based on network conditions without clearing the buffer. Leaning 14:25-31; Houh2 §VII.C. Up-sampling allows lower-rate recordings to be played without changing hardware settings or interrupting playback. Houh2 §VII.C; EX2129 95:4-97:23 (clearing the buffer is not necessary or desirable during a rate shift). PO does not dispute that this modification—cited and relied upon in the Petition—leads to uninterrupted playback.

PO relies on Leaning's teaching that while "[w]e prefer, in the case of a jump, to suspend decoding and clear the buffer … ***this is not actually essential***" (Leaning 11:19-20), to assert that clearing the buffer is always required. POR18. But, PO omits the last clause indicating that clearing the buffer is "not actually essential" and ignores that this teaching is "in the case of a jump," not normal playback. *Id.*; EX2141 ¶49; Jeffay 76:12-15, 157:15-159:16; Houh2 ¶¶67, 81.

PO asserts that Leaning introduces temporal discontinuities because "playout time" T_p is allegedly "set at 10 seconds" and Leaning "waits until the buffer is refilled" to begin playing. POR17, 26-27. Again, PO ignores Leaning's teachings. Leaning discloses T_p of less than a single sub-file size, such that—even with an empty buffer—playback can begin ***as soon as one sub-file is received and decoded.*** Leaning 12:33-34 (sub-file size can be 130% of T_p); Houh2 ¶¶46-49, 72-75. For instance, with a four-second long sub-file, T_p would be set to three seconds, and a single sub-file would meet the playout time requirement, avoiding any buffering delay. Far from the "progressive download approach disparaged" by the patent (POR26), Leaning teaches avoiding delays in playback by using smaller sub-files. Leaning 12:27-34; Houh2 ¶¶17-28, 45-51.

Next, PO argues Leaning introduces "content-based discontinuit[ies]" because it allegedly requires the buffer to be cleared before requesting the next sub-file. POR20-22. First, as discussed above, Leaning teaches that buffer clearing is not required. Second, PO assumes clearing the buffer means that buffer content is discarded, but that makes no sense. Instead, clearing the buffer would be achieved by allowing the remaining buffer content to play until it empties. Houh2 ¶¶80, 84. Indeed, Leaning emphasizes the importance of starting a "first sub-file received for a new rate" so that it "continues from the same point in the recording that the last

sub-file at the old rate ended." Leaning 12:16-18. This would not be possible if content were discarded. Houh2 ¶80.

2. Leaning Teaches Continuous Video Streaming

PO asserts that Petitioner did not show that Leaning's disclosure of audio streaming can be applied to video streaming to achieve continuous playback. POR30-32. But, the Petition repeatedly cites to Leaning's interchangeable treatment of audio and video, as well as to Leaning's discussion of video streaming. *E.g.*, Pet.19-22 (citing, *e.g.*, Leaning 1:3-29, 4:4-15, 16:6-12).[2]

Leaning acknowledges that there are "further implications" for video (POR30), and ***also teaches how to address them***. *See, e.g.*, Leaning 16:11-23. For "switching" between rates, Leaning teaches, ***first***, if each frame of a picture is "coded independently," "it is sufficient that a sub-file contains a whole number of frames of a picture" for video playback. *Id.* 16:18-20; *see, e.g.*, EX1046 (intra-frame only Motion JPEG2000); Houh2 §VIII.A. There are no "further implications" for these videos. POR33-34; Houh2 §VIII.A.

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[2] PO argues a POSITA would not "interpret 16:6-7 of Leaning as applying" all its teachings to video instead of just "the subtitle/image principle to video." POR31n.11. PO is wrong. Leaning explicitly transitions to "switching" data rates in video streams and says nothing about subtitles. *See* Leaning 16:6-24; Houh2 ¶86.

Second, Leaning teaches that if a video is compressed using "inter-frame techniques" that "generate a mixture of [I-frames] and predictively coded frames," then "each sub-file should preferably begin with an [I-frame]." Leaning 16:20-23. Leaning's solution avoids "mis-tracking" because each file can be independently decoded at the boundary of a rate-switch. Houh2 ¶¶93-94.

PO asks the Board to ignore Leaning's clear teachings, asserting that mis-tracking would nevertheless occur because "generating multiple copies of an MPEG-encoded video at different bit rates" would allegedly result in sub-files beginning with dependently-coded frames. POR33, 35. PO is wrong. By holding the group of pictures/frames for each sub-file constant across the encoding at different bitrates, an I-frame would be included at every sub-file's beginning. Encoding these sub-files at different rates would not change the location of the I-frames. Houh2 ¶¶86-97, 122-126. PO's argument relies on a video purposefully and improperly segmented by its expert to show mistracking. POR34 (citing EX2141 ¶94). But, PO's expert encoded the video to ensure that sub-files ***would not*** begin with I-frames. EX2141 ¶96; Houh2 ¶¶101-116. As Dr. Houh demonstrates, when Leaning's teachings are properly implemented, there is no mistracking. Houh2 ¶¶117-121.

PO argues, next, that even if an encoded MPEG video were segmented at I-frame boundaries, "those sub-file boundaries [would not be] time-aligned." POR35. PO is wrong again. Leaning teaches decoding time-aligned sub-files and POSITAs

would have known how to do so: by keeping the group of pictures for each sub-file constant regardless of bitrate. Leaning 5:15-19 (decoding sub-files), 12:16-18 ("highly desirable that the sub-file boundaries are the same for each rate"); Houh2 ¶¶86-97, 122-126. PO does not and cannot reasonably argue that Leaning is not enabled. Houh2 ¶113.

Notably, PO's argument concerning Leaning is inconsistent with its expert's view that the '772 patent discloses that a video file can be encoded and then segmented. Jeffay 243:11-247:12 (pointing to '772 patent 6:42-45, Figs. 2a-2c). To the extent true, PO wrongly requires more from the prior art than the challenged patent. *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020). Further, Leaning is not limited to encoding-before-partitioning; POSITAs would have understood how to make decodable sub-files, including by encoding-after-partitioning. Leaning 13:23-14:2.

PO also asserts "the large size of video … necessitates compression" using complex algorithms and producing bitstreams "not amenable to 'switching' or rate shifting." POR31n.12. But, Leaning expressly addresses video coding in the context of its sub-files and applies its teachings to videos without complex video coding algorithms, which are not required by the claims. Leaning 16:18-17:10; Houh2 §§VIII.A-B.

Third, and finally, for some "inter-frame coding systems such as the ITU H.261 standard," Leaning explains it is "not possible" to have every sub-file begin with an I-frame. Leaning 16:24-25. Leaning warns against "serious mistracking" for only this type of coding. *Id.* 16:30-31; POR31. Nevertheless, Leaning teaches "the problem can be solved by using the principle described in" another patent. Leaning 17:7-10; 18:18-19:5. Thus, Leaning's "further implications" are no impediment to streaming video with continuous playback.[3] Houh2 §§VIII.A-B.

3. Video Playback Did Not Require Clearing The Buffer

PO asserts that Leaning's disclosure of clearing the buffer also applies to video cards, introducing discontinuity. POR32n.14. But, POSITAs would have understood that video playback did not require a hardware reset (or the accompanying buffer clearing) during rate switching. Houh2 §VII.C. By the time of the alleged inventions, graphics technology had evolved to allow for dynamic adjustments without needing to reset the hardware every time a video changes rate. *Id.*; EX2129 99:12-104:22. Leaning reflects this development, explaining "the player program incorporates a video decoder," which POSITAs would have

[3] PO dismisses this entire section of Leaning as "directed to fast forwarding and rewinding functionality" (POR31), but Leaning also addresses file partitioning for video (Leaning 16:17-31).

understood was implemented with software. Leaning 16:6-10; Houh2 §VII.C. Even if video cards needed to be reset (they did not), POSITAs would have understood Leaning's teachings that clearing the buffer can be avoided by running the sound card continuously at the highest sampling rate would apply to video decoding and video cards. Leaning 14:25-15:8, 16:6-7; *supra* Section II.B.1; Houh2 ¶¶61-66.

PO's reliance on a statement made by third party Aylo Freesites Ltd., is irrelevant, not evidence, and taken out of context. The next sentence continues "[t]his would not make any technical sense at all." EX2016 8-9. While decisions from foreign tribunals are not binding, the EPO, in the same proceeding, rejected the arguments PO raises here. EX1044 6.1.6. The EPO explained Leaning teaches "runn[ing] the sound card continuously at the highest sampling rate so as to avoid interruption in the audio output." *Id.* (citing Leaning 14:28-15:6). It explained "the skilled person would recognize that no such resetting of the video card is necessary in the case of rate-switching." *Id.* It noted that Leaning emphasizes "frame freezing may not be acceptable for rate-switching in video, which also points to continuous playback of the video." *Id.* (citing Leaning 18:19-23).

4. Petitioner Is Permitted To Respond To PO's Arguments

Anticipating that its arguments will be rebutted, PO argues "Petitioner cannot … address" its arguments and is "foreclosed from introducing modifications or alternative Leaning mappings." POR29. But, the Petition addressed "continuous

playback" as described above, and relied on Leaning's "modification" that avoids interruptions in playback. Pet.36-39. There is no new theory or mapping; Petitioner relies on the same disclosure of avoiding interruptions cited in the Petition.

This Reply is easily distinguishable from *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356 (Fed. Cir. 2023), because (1) the Petition cited to Leaning's modification for avoiding interruptions (Pet.38), and (2) this Reply does not propose any new modification. *Yita*, 69 F.4th at 1367. Leaning discloses a "modification" to its own algorithm that directly addresses and solves the problems PO alleges (Leaning 14:25-15:8), and the Petition properly cited to and relied upon it. Pet.36-38; *see Rembrandt Diagnostics LP v. Alere, Inc.*, 76 F.4th 1376, 1384 (Fed. Cir. 2023) ("[A] reply may be proper if it is responsive and simply expands on previously raised arguments."); *see also Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1382 (Fed. Cir. 2023).

C. Leaning Renders Obvious Requesting Streamlets Via "A Plurality of [TCP] Connections"

PO asserts Leaning does not render obvious a plurality of TCP connections based on (1) use of an error message to stop streaming, (2) sequential requesting of sub-files, and (3) the existence of HTTP 1.1. PO is wrong.

First, PO cites Leaning's use of an error message and asserts "[a] TCP error message also may satisfy the 'If error message received, Stop' condition in Leaning's playback process." POR37-38. But, there is no support for PO's

assertion: the only use of an error message disclosed in Leaning is in response to the subfile not existing at the server. *Id.* 37 (citing Leaning 10). This has nothing to do with TCP. Houh2 ¶¶130-134.

POSITAs would have understood that it would make no sense for a TCP error to meet this condition. *Id.* Leaning interfaces with the server using application-layer protocols such as HTTP, and therefore any error messages described in Leaning (unless explicitly stated otherwise), would have been application-layer errors, such as HTTP errors. *See* POR37 (discussing an example HTTP error); Houh2 ¶¶130-134. For example, PO does not dispute that Leaning discloses the use of HTTP, which operates over TCP connections. POR37-38; Pet.32-33. In contrast, the software used to implement TCP in any given system handles such errors without applications, at the transport layer. Houh2 ¶¶130-134. Leaning is not "disinterested" in handling TCP errors—it operates as application-layer software typically does by allowing the TCP protocol to handle TCP layers. *Id.* Its use of an application-layer error message to indicate the end of a content file says nothing about its use of TCP connections.

Second, PO asserts Leaning has "'no expectation' of receiving sub-files in any order other than their 'original sequence'" and thus "fails to contemplate the use of multiple TCP connections." POR38-39. PO mischaracterizes and misquotes Leaning. The quoted passage is a ***conditional***: "it should be noted that ***if*** … there

is no expectation that a sub-file will be followed by a sub-file other than that which immediately follows it in the original sequence, ***then*** it matters little where the boundaries between the sub-files are located." Leaning 12:9-11. This has nothing to do with TCP and instead relates to "the process of partitioning the original file into sub-files." *Id.* 12:8. Nor does this passage apply to rate switching because Leaning further distinguishes that case of "no expectation … " from rate switching "[w]here jumps are envisaged (in time, or ***between different data rates***)," in which case "there are other considerations" such as making sub-files "contain a whole number of frames." *Id.* 12:9-16; Houh2 ¶133.

Third, PO asserts "HTTP 1.1 was in widespread use and, by default, used persistent TCP connections" that "could" use "a single TCP connection" for "multiple requests of a server." POR39. PO does not dispute the Petition's argument that in the well-known HTTP 1.0 (which preceded HTTP 1.1), each request establishes a new connection. *Id.* (quoting Pet.32-33); Houh2 ¶¶127-130, 135. Leaning expressly relies on HTTP 1.0 as RFC1945 (EX1028 (Jeffay-Ex.1)), ***not*** HTTP 1.1. Pet.33 (citing Leaning 2:10); Jeffay 79:3-6. The existence of a later-defined standard that operates differently does not render the earlier standard non-obvious. Moreover, HTTP 1.1 explicitly contemplates multiple TCP connections between a single client and server even with persistent connections: "Clients …

SHOULD limit the number of simultaneous connections" to not "more than 2 connections with any server." EX1047 47; Houh2 §IX.

D. Leaning Renders Obvious Requesting Low Quality Files (Claim 6)

PO asserts Leaning does not render this limitation obvious because (1) Leaning requires filling a buffer past a playout time, which is allegedly not "instant playback," and (2) Leaning does not request a "sub-file of a low bit rate in the first instance." POR41. Both arguments fail.

First, Leaning discloses that the playout time can be less than the duration of a sub-file, and therefore playback can begin upon reception and decoding of a single sub-file. Leaning 12:34-35; Houh2 ¶¶49, 75, 135. In such case, Leaning's playback is "instant" within the constraints of computer networking. Houh2 ¶¶49, 75, 135. To the extent PO intends to construe "instant" as anything faster, it has no support, and such a narrow construction would violate the principles of claim construction that prohibit inoperable constructions where operable constructions exist. *Paragon Sols., LLC v. Timex Corp.*, 566 F.3d 1075, 1088 (Fed. Cir. 2009) ("displaying real time data" did not require impossibly instantaneous display).

Second, PO asserts Leaning's request for a 24 kbit/s sub-file would cause "extra delay" because such sub-files are "larger" than other possible bitrates. POR41. However, claim 6 does not require requesting the lowest possible bitrate. Further, it is undisputed that the requested 24-kbit/s is not the highest bitrate in Leaning and

allows for "upshifting to a higher quality" as recited. PO does not argue that 24-kbit/s is not a "low quality" rate,[4] but instead compares it to the other options available, noting that there are two options that are lower and one that is higher. POR41; Houh2 §X. PO cannot justify its implicit construction requiring "low quality" rates to the lowest possible rate, or being in the bottom half of available options, or even to be anything other than allowing for "instant playback" and "upshifting to a higher quality." Apart from its mischaracterization of playback time, PO does not dispute that this bitrate can be played back instantly, or that it allows for upshifting. POR41.

PO mischaracterizes Leaning as purportedly teaching that higher-rate files "are disadvantageous in requiring a larger buffer and in causing extra delay when starting play." *Id.* (quoting Leaning 12:31-33). This passage of Leaning has nothing to do with bitrate, but rather relates to the *length* in seconds of a sub-file. Leaning 12:27-34 (excessively short or large sub-files should be avoided, recommending "sub-file size of between 30% and 130% of the playout time"). Contrary to PO's assertions, this passage supports that Leaning explicitly considered instant playback when "starting play" with respect to sub-file length. Houh2 ¶137.

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[4] The '772 patent describes 100 kb/s as a "low quality stream." '772 patent 6:46-57.

E. Leaning Renders Obvious "Arranging" Files (Claim 8)

The Petition established that Leaning renders claim 8 obvious. Pet.47. PO argues that because Leaning's sub-files are allegedly received in "the order of ascending playback time" they are not "arranged." POR42. PO is wrong. Leaning arranges sub-files into the audio buffer in the order of ascending playback time. *See* Leaning 5:15-6:3. PO attempts to avoid Leaning's disclosure by reading limitations from the specification into the claims, suggesting the claim requires that sub-files are received out of order or requiring a staging module. POR42-43. But nothing in the claim recites changing the order in which sub-files are received, nor does it prohibit files from being received in ascending order. Indeed, inventor, Drew Major, testified that his invention can be used by "a client request[ing] streamlets individually, one at a time, in order of ascending playout time[.]" Major 65:8-14.

Next, PO repeats its mischaracterization of Leaning, asserting "there is no expectation that a sub-file will be followed by a sub-file other than that which immediately follows it in the original sequence." POR44. As explained above, this passage relates to how a content file should be partitioned when there is no rate-switching and has nothing to do with arranging files at the decoder. Houh2 §XI. But even if PO's misunderstanding were correct, it would not save claim 8 because the claim does not require out-of-order reception. *Id.*

III. Claims 2 and 9 are Obvious in View of Leaning Alone or With Gamble.

Dependent claims 2 and 9 recite "requesting sub-parts of the files over different ones of the plurality of TCP connections." The Petition's discussion of claims 2 and 9 in Ground 1, which is based on Leaning alone, is undisputed. Pet.41, 47-48. There, the Petition explained that POSITAs would have been motivated to "configure Leaning's apparatus to request sub-parts of the files (subfiles) over different TCP connections" to "improve[] reliability in situations where one connection fails" and to "take[] advantage of available bandwidth by parallelizing retrieval of a segment to increase throughput." *Id.* 41.

Instead, PO focuses entirely on Gamble, admitting that in Gamble, sub-parts are transmitted over a plurality of TCP connections. POR46. PO asserts, however, that despite the transmission in Gamble, these sub-parts were not *requested* over the TCP connections. *Id.* PO is wrong. POSITAs understood that TCP connections follow a request-response paradigm in which the client makes a request and the server issues a response. Houh2 §XV. Gamble reflects this understanding, teaching that "[t]he client system can … initiate the standard TCP connection sequence" and "[t]he server application … can accept these connection requests and process all N per-connection data transfers independently and concurrently." EX1020 (Gamble) [0038]-[0039]; Houh2 §XV. Gamble discloses that its server listens for connection requests. Gamble [0038]-[0039]. Contrary to PO's assertion, Gamble does not limit

such requests to originating only from the transmitting client. *Cf.* POR46; Gamble [0038] ("server 108 can listen for TCP connection requests").

Additionally, even if Gamble did not teach requests (it does), Leaning undisputedly discloses requesting video content files using TCP. *See* Pet.59 (citing analysis for limitation 1[B] "requesting by the media player a plurality of sequential ones of the files of one of the copies from the set of servers over a plurality of Transmission Control Protocol (TCP) connections based on the time indexes"). POSITAs would have understood that in the combination of Leaning and Gamble, Gamble's network application (112) of a receiving client (106) would request delivery of the received content, rather than simply receiving the content unsolicited. Gamble [0042]; Houh2 §XV. The Petition discussed the undisputed benefits associated with implementing these requests as requests for sub-parts over a plurality of TCP connections.

Finally, Gamble's use of server 108 does not suggest that the combination "fails." POR47. In Gamble, server 108 refers to any generic computing device. Gamble [0026]. The combination relies on Gamble's teachings of requesting sub-parts of files over different TCP connections and reassembling the files from the different subparts. Pet.59-60; Houh2 ¶¶183-184. Obviousness does not require physical combinability and POSITAs would have understood how to implement

those teachings in Leaning. *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985); Houh2 §XV.

IV. Secondary Considerations Cannot Save the Claims

A. PO's Secondary Considerations Lack Nexus

1. No Presumption of Nexus

PO conclusorily contends it is entitled to a presumption of nexus, asserting that the ITC relied on the "same evidence" to find claims nonobvious. POR47-49. But, PO did ***not*** present "the same evidence" before the ITC. The ITC relied on a concession that the MOVE Player embodied the claims—no such concession exists here—and on evidence not in this proceeding. EX1009 212-217 (*e.g.*, CX-0001C, RX-0001C, CX-0008C, CX-1096C, CX-0005C, CX-1061C, CX-1134). PO produced (1) a redacted version of the ITC decision, and (2) excerpts of selected ITC deposition transcripts without the exhibits discussed in the transcripts. The ITC's findings are not binding, and are incorrect in view of the evidence in this proceeding. Houh2 §XVII.A.1. Indeed, in the final written decisions in IPR2024-00043, -00044, -00045, -00046, and -00146 ("Ogdon FWDs") challenging related patents, the Board agreed that the ITC decision presented facts not at issue here. IPR2024-00043, Paper 59, 41-59.

Next, PO provides no analysis of nexus in its POR, instead improperly incorporating by reference materials from the ITC and from Dr. Jeffay's Declaration. POR49-50 (citing EX1009, EX2141 ¶¶193-209, EX2071). This is the "epitome of

improper incorporation by reference." IPR2024-00146, Paper 57, 41 n.8; 37 C.F.R. § 42.6(a)(3); *Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1371 (Fed. Cir. 2023).

Even if considered, PO's conclusory arguments fail to show coextensiveness with the claims. PO's (improperly incorporated) claim chart addresses only one claim out of twenty-one. EX2071 1; Pet.6; Houh2 §XVII.A.2. And for that claim, PO relies on MOVE Networks' marketing materials to assert that the MOVE Player provided "continuous" playback. EX2071 17-18. But, that same document establishes that the MOVE Player experienced "stalls" and "blip[s]" in playback, and several of PO's declarants conceded that its playback was ***dis***continuous. EX2022 29; Jeffay 208:15-219:12; Major 127:6-128:8; Ericson 211:18-213:21; Mitchell 54:7-55:14, 71:12-75:8; EX2022 27; Houh2 §XVII.A.3. The MOVE Player did not practice the claims and was not coextensive with them.

2. Critical Unclaimed Features Establish Lack of Nexus

PO "'bears the burden of showing that a nexus exists.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Where, as here, the relied-on product for nexus "includes a 'critical' unclaimed feature that is claimed by a different patent," then that "patent claim is not coextensive with" that product. *Id.* 1375; *see Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312-13 (Fed. Cir. 2006).

To date, PO has asserted that over 180 claims from nine patents have a nexus with essentially the same alleged secondary considerations, asserting that each of the various claims is "coextensive" with the MOVE Player and SlingTV and is entitled to a presumption of nexus. *See* Ogdon FWDs. The Board already rejected PO's claims that a direct nexus exists for over 120 claims from five patents and should do so here. *See id*.

PO relies on the same secondary considerations and much of the same evidence as in prior IPRs, but ties them to a ***different*** "critical feature[]": "continuous playback." *Compare* POR50-51 ("continuous playback"), *with, e.g.*, IPR2024-00043, Paper 59, 47-48 ("actively adjusting … video quality"). But, PO's nexus arguments are to the same, general adaptive bitrate ("ABR") streaming technology disclosed in the prior art. *See* POR54 (MOVE player "superior" due to ABR streaming); IPR2024-00043, Paper 59, 48. PO's evidence asserts that the ABR technology results in "continuous playback," but because ABR was in the prior art, that negates nexus here. *See, e.g.*, EX2022 11, 23; EX2077 1; EX2036 2; EX2039 1; EX2046 1; Houh2 §XVII.A.5. Even if "continuous playback" were different from features PO relied on in the prior IPRs (it is not), PO's admissions that the ***same*** secondary considerations are tied to ***different*** features

allegedly claimed in ***different*** patents are fatal to any nexus claim.[5,6]

PO's nexus arguments separately fail because PO's evidence ties the alleged secondary considerations to unclaimed features. As PO recognizes, "***The key***" to MOVE's success "***is in [MOVE's] plug-in***." POR51-52 (quoting EX2048).[7] But, PO omits the explanation for ***why*** the plug-in is key: it "manages delivery, assembles and renders the stream, and ***offers DRM [Digital Rights Management], geo-targeting, and extremely in-depth reporting***." EX2048 1; EX2022 27, 29-30; EX2031 1; EX2036 2; EX2039 1; EX2113 2-3; Houh2 §XVII.A.4; Jeffay 202:17-204:14 (ability to insert advertisements an "essential feature"). These unclaimed features don't permit a finding of nexus.

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[5] DISH relies on blog posts but fail to establish the bloggers express industry views. *See, e.g.*, EX2141 ¶¶206, 213, 231-232, 271-273; *see also* EXS2032-2037, 2054. PO's declarants did not know the bloggers and/or did not regularly visit the blogs. *See, e.g.*, Major 102:2-16; 104:21-106:6; IPR2024-00043, Paper 59, 58 (anecdotal opinions are "of little evidentiary value").

[6] Some of PO's evidence does not even mention "continuous playback." *See, e.g.*, EX2034; EX2033; Houh2 ¶211.

[7] This comes from MOVE's marketing team. EX2048 1 ("I spoke with MOVE's VP of marketing").

B. PO's Alleged Secondary Considerations Do Not Outweigh The Strong Prima Facie Case Of Obviousness

As to ***long-felt but unmet need***, PO made the ***same*** arguments in prior IPRs about the ***same*** evidence, claiming an allegedly ***different*** "unmet need" for "streaming live and on-demand content over the Internet." *E.g.*, IPR2024-00043, Paper 18, 54; *see* POR53; Houh2 §XVII.B.1. But ABR "streaming was already known," and thus there is no nexus. IPR2024-00043, Paper 59, 51; Pet.19-40.

PO's allegedly ***surprising results*** (POR61-62), are entitled to no weight because they are, at most, differences in degree, not in kind. *See Galderma Laboratories, L.P. v. Tolmar, Inc.*, 737 F.3d 731, 739 (Fed. Cir. 2013). The MOVE Player's "results were still streaming video …, albeit at a better quality or degree according to [PO's] telling." *E.g.*, IPR2024-00043, Paper 59, 52; Major 127:6-128:8; Houh2 §XVII.B.2.

PO's ***commercial success*** evidence lacks nexus because it ties success to critical, unclaimed features—DRM and "extremely in-depth reporting" on and tracking of its users that made MOVE's technology "extremely valuable to networks and advertisers." EX2048 1. Moreover, "to the extent that [PO's] evidence of commercial success is tied to MOVE Networks as an entity, or to MOVE's 'technology' or '[ABR technology]' generally …, it is not sufficiently tied to the claimed invention." *E.g.*, IPR2024-00043, Paper 59, 54. PO's evidence of licenses for its ABR streaming patents generally (*see* POR64-65), likewise lacks nexus. *Iron*

Grip Barbell Co. v. USA Sports, Inc., 392 F.3d 1317, 1324 (Fed. Cir. 2004). Houh2 §XVII.B.3.

PO's ***copying*** allegations deserve no weight. PO alleges Apple's HLS technology was found by the ITC to be "very similar" to MOVE's. POR66. But, PO cites to (excerpted) ITC deposition testimony, not the ITC decision. *Id.* And for good reason: the ITC found that PO failed to establish copying. EX1009 216. Its evidence is no stronger here. PO's cited ITC testimony establishes, at most, that one declarant believed Apple's technology to be similar—that does not show copying. Houh2 §XVII.B.4. Similarly, PO implies Microsoft copied but never explains any link between a Microsoft product and the claims. POR66-67.

Because PO "failed to connect the evidence of ***industry praise*** to the novel elements of the claims," this evidence should be given no weight. *S. Ala. Med. Sci. Found. v. Gnosis S.p.A.*, 808 F.3d 823, 827 (Fed. Cir. 2015). PO's proffered praise evidence—including awards—is tied to ABR streaming generally, a process disclosed in the prior art. *See* POR64-67; Pet.19-40; Houh2 §XVII.B.5. PO's proffered awards "appear to have been conferred on MOVE Networks as a business entity." *E.g.*, IPR2024-00043, Paper 59, 58.

PO's reliance on a 2020 Emmy to SlingTV should be accorded no weight because ABR streaming was known in the prior art. *See* Pet.19-40. "SlingTV's own press release states that this award relates to SlingTV's 'over-the-top television

service' that was 'launched February 9, 2015.'" IPR2024-00043, Paper 59, 57 (quoting EX2023); Ericson 170:25-171:15, 240:4-25. PO does not explain how SlingTV's product implements ABR technology, let alone "continuous playback." Instead, PO merely improperly incorporates arguments by reference from the ITC decision (POR68-69), and as PO's expert admitted, the ITC relied on respondents' concession and does not substantively assess multiple claim limitations. Jeffay 180:13-191:18; Houh2 ¶¶195, 209, 239.

As explained above, PO's evidence of alleged praise based on various blog posts should likewise be given no weight. *See* POR69-70 (citing EX2054, EX2055, EX2070, EX2036). At best, any alleged praise from these blogs and the proffered evidence from Level 3 (EX2054; EX2130; EX2041), relates to ABR streaming generally, which was prior art. *See supra* Section II; Houh2 §XVII.A.5.

Finally, PO argues that British Telecom ("BT"), to whom Leaning was assigned, "fail[ed] to commercialize Leaning's teachings." POR70-71. But, this "is indeed irrelevant." *Samsung Elecs. Co. v. Lynk Labs, Inc.*, IPR2021-01299, Paper 32, 19 (PTAB Mar. 7, 2023). Even if relevant, PO's BT declarant testified that Leaning was licensed as part of portfolio licenses, and asserted against a third party. EX1035 (Ratcliffe) 73:16-74:15, 126:11-127:23, 139:11-140:3, 158:19-159:8. Moreover, BT's declarant testified he was asked to only search for commercialization of a "Voyager 2000" product. *Id.* 12:8-19; *see id.* 17:24-25.

Leaning was commercialized by BT as part of its Fastnets solution, which was "the patented use of SP (switching) frames to switch between multiple video streams encoded at different data rates," which "can be done without pause or glitch in the displayed picture." EXS1036, 1037 (Ratcliffe-Exs.1, 2). These are the very features described in Leaning. Houh2 ¶¶217-219.

V. Conclusion

In view of the foregoing, Petitioner requests cancellation of claims 1-21.

Respectfully submitted,

Dated: June 9, 2025

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

I hereby certify that this Petitioner's Reply complies with the word count limitation of 37 C.F.R. § 42.24(c)(1) because the Petitioner's Reply contains 5,545 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Petitioner's Reply exempted by 37 C.F.R. § 42.24(c).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 9th day of June, 2025, a true and correct copy of the foregoing **Petitioner's Reply and all Exhibits** were served by electronic mail on Patent Owner's lead and backup counsel at the following email addresses:

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