

IPR2026-00334
Patent No. 12,231,703

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PINTEREST, INC.,

Petitioner,

v.

OPENTV, INC.,

Patent Owner.

Case IPR2026-00334

Patent No. 12,231,703

PATENT OWNER'S PRELIMINARY RESPONSE

UNDER 35 U.S.C. § 313 AND 37 C.F.R. § 42.107

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PATENT OWNER EXHIBIT LIST

Exhibit No.	Description
EX2001	Complaint, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-25:cv-01404-JCG, D.I. 1 (D. Del. Nov. 18, 2025)
EX2002	Answer, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-25:cv-01404-JCG, D.I. 20 (D. Del. Feb. 16, 2026)
EX2003	Complaint, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-24:cv-01301-JCG, D.I. 1 (D. Del. Nov. 27, 2024)
EX2004	Scheduling Order, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-25:cv-01404-JCG, D.I. 30 (D. Del. Mar. 25, 2026)
EX2005	Docket Print-Out, <i>Nagravision Sàrl v. Pinterest Inc. et al.</i> , No. UPC-CFI-0001506/2025
EX2006	Amended Scheduling Order, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-24:cv-01301-JCG, D.I. 68 (D. Del. Dec. 31, 2025)
EX2007	Docket Print-Out (ECF), <i>OpenTV, Inc. v. Pinterest, Inc.</i> No. 1:24-cv-01301-JCG
EX2008	App'x A to OpenTV's Disclosure of Asserted Claims and Infringement Contentions, <i>OpenTV, Inc. v. Pinterest, Inc.</i> , No. 1-25:cv-01404-JCG, D.I. 1 (D. Del. May 1, 2026)
EX2009	Notice of Hearing (English Translation), <i>Nagravision Sàrl v. Pinterest Germany GmbH et al.</i> , No. 7 O 14220/25 (Munich District Court I Nov. 18, 2025)
EX2010	Statement of Defense (Excerpts, Redacted), <i>Nagravision Sàrl v. Pinterest Inc. et al.</i> , No. UPC-CFI-0001506/2025 (Mar. 26, 2026)
EX2011	European Patent No. 3,965,466
EX2012	Counterclaim for Revocation (Excerpts), <i>Nagravision Sàrl v. Pinterest Inc. et al.</i> , No. UPC-CFI-0001506/2025 (Mar. 26, 2026)
EX2013	Red5 Team, <i>What Is RTSP Streaming and Why It Is Still Relevant in 2026</i> , https://www.red5.net/blog/4-reasons-rtsp-streaming-is-still-relevant/#how-does-rtsp-work (last visited July 6, 2026)
EX2014	H. Schulzrinne, et al., <i>RTP: A Transport Protocol for Real-Time Applications</i> , https://datatracker.ietf.org/doc/html/rfc1889 (Jan. 1996)
EX2015	AT&T, <i>Streaming Separate Audio and Video</i> , https://developer.att.com/video-optimizer/docs/best-practices/separate-audio-video (last visited July 6, 2026)

Exhibit No.	Description
EX2016	Sonos, <i>Beginner's Guide to Audio File Types (And Which to Use)</i> , https://www.sonos.com/en-us/blog/audio-file-types?srsltid=AfmBOopl9guRE56b53hOCzG68e_O4uZJRD4isQWK9KJ1LTfFa0tK6i (last visited July 1, 2026)
EX2017	Counterclaim for Revocation (Second Selection of Excerpts), <i>Nagravision Sàrl v. Pinterest Inc. et al.</i> , No. UPC-CFI-0001506/2025 (Mar. 26, 2026)
EX2018	GStreamer, <i>decodebin3</i> , https://gstreamer.freedesktop.org/documentation/playback/decodebin3.html?gi-language=c (last visited July 8, 2026)
EX2019	GStreamer, <i>GstEvent</i> , https://gstreamer.freedesktop.org/documentation/gstreamer/gstevent.html?gi-language=c (last visited July 8, 2026)
EX2020	GStreamer, <i>GstStream</i> , https://gstreamer.freedesktop.org/documentation/gstreamer/gststreams.html?gi-language=c#GstStream (last visited July 1, 2026)

I. PRELIMINARY STATEMENT

Pursuant to 37 C.F.R. § 42.107, patent owner OpenTV, Inc. (“OpenTV” or “Patent Owner”) submits this Preliminary Response to the Petition for *Inter Partes* Review (“IPR”) of U.S. Patent No. 12,231,703 (the “’703 patent”). Paper 1 (“Petition”). Petitioner Pinterest, Inc. (“Pinterest” or “Petitioner”) challenges the validity of claims 1-20 (“Challenged Claims”) of the ’703 patent on the grounds that these claims are obvious, in violation of 35 U.S.C. § 103, in light of, *inter alia*, U.S. Patent Application Publication 2009/0132725 (“Orr”) (EX1005) and a slide deck entitled “‘Decodebin3’ Modern playback Use-Cases” by Edward Hervey (“Hervey”) (EX1009).

The Petition has not established a reasonable likelihood that any of the challenged claims are unpatentable. The ’703 patent claims, *inter alia*, systems and methods for optimizing a content change process—such as when a user switches from one video, program, movie, show, or channel to another—in a digital content delivery environment by preserving at least a portion of a playback pipeline. Orr and Hervey are the only references used by Petitioner to allege obviousness of the ’703 patent’s independent claims. But the Petition fails to show how either Orr or Hervey teach or suggest all the limitations of the ’703 patent independent claims. The Petition fails to show how Orr, for example, teaches or discloses the claimed “playback pipeline” including a “demultiplexer”, “audio decoder” and “source

element”. See EX1001 at 14:65-15:2, 16:11-14, 17:22-26. And the Petition fails to show at least how Hervey discloses “in response to the receiving of the selection, transitioning to the new *piece of content*” and “determining whether the new piece of content is of a same *content type* as the first *piece of content*.” See *id.* at 14:58-62, 16:3-6, 17:15-18 (emphasis added).

Accordingly, Patent Owner requests that *inter partes* review of the ’703 patent be denied.

II. THE ’703 PATENT

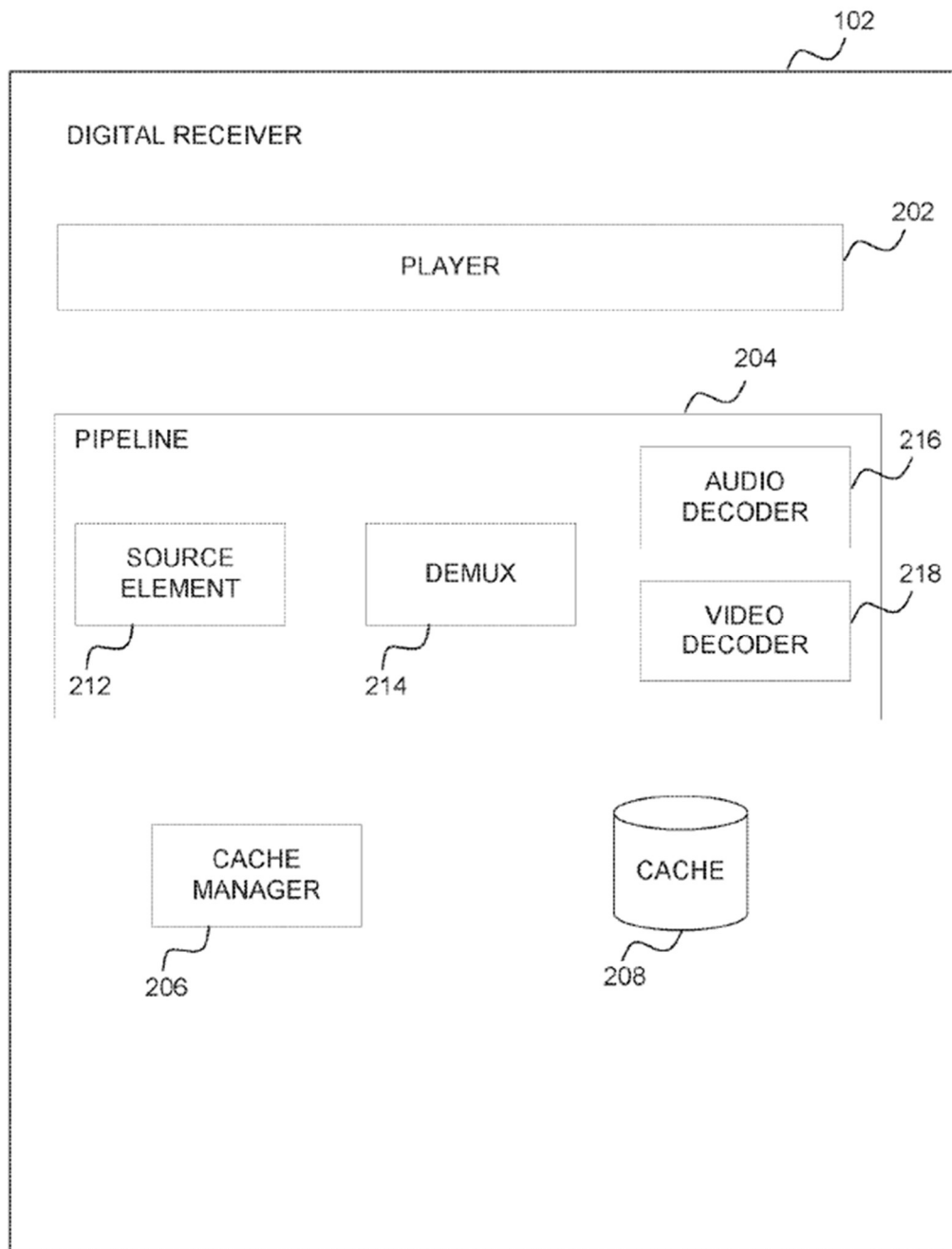
The ’703 patent, entitled “Bitrate and Pipeline Preservation for Content Presentation[,]” was duly issued on February 18, 2025, from U.S. Patent Application No. 18/480,918, filed on October 4, 2023. EX1001. The ’703 patent claims priority, through a chain of continuation applications and an international application, to Indian Application No. 201741031917, filed on September 8, 2017. *Id.*

Consistent with its title, the ’703 patent is directed to systems and methods for optimizing a content change process—such as when a user switches from one video, program, movie, show, or channel to another—in a digital content delivery environment. EX1001, Abstract, 1:17-27, 3:22-42. As the specification explains, conventional content-change systems suffered from at least two related technical problems. First, when a user selected a new piece of content, conventional systems often had to obtain information required to identify, stream, and display that content

before playback could begin, resulting in delay. *Id.* at 1:30-40. Second, in adaptive bitrate streaming systems, conventional systems often started playback of the newly selected content at a low bitrate, even when the network could support a higher bitrate, causing the initial video to appear grainy or blurred until the bitrate gradually increased. *Id.*

The '703 patent further discloses that conventional systems wasted time and resources by tearing down a prior content delivery pipeline and reconstructing an entirely new pipeline after each content change. *Id.* at 2:54-67. That conventional approach introduced unnecessary latency because a source element, demultiplexer, video decoder, or audio decoder—or other portions of the content delivery pipeline—would need to be reacquired and rebuilt before playback of the new content could begin. *See id.* The '703 patent addressed some of these problems by preserving at least a portion of the playback pipeline when the new content can use that pipeline or portions of it. *Id.* at Abstract, 3:1-22.

Figure 2 illustrates components within a digital receiver in accordance with an exemplary embodiment:



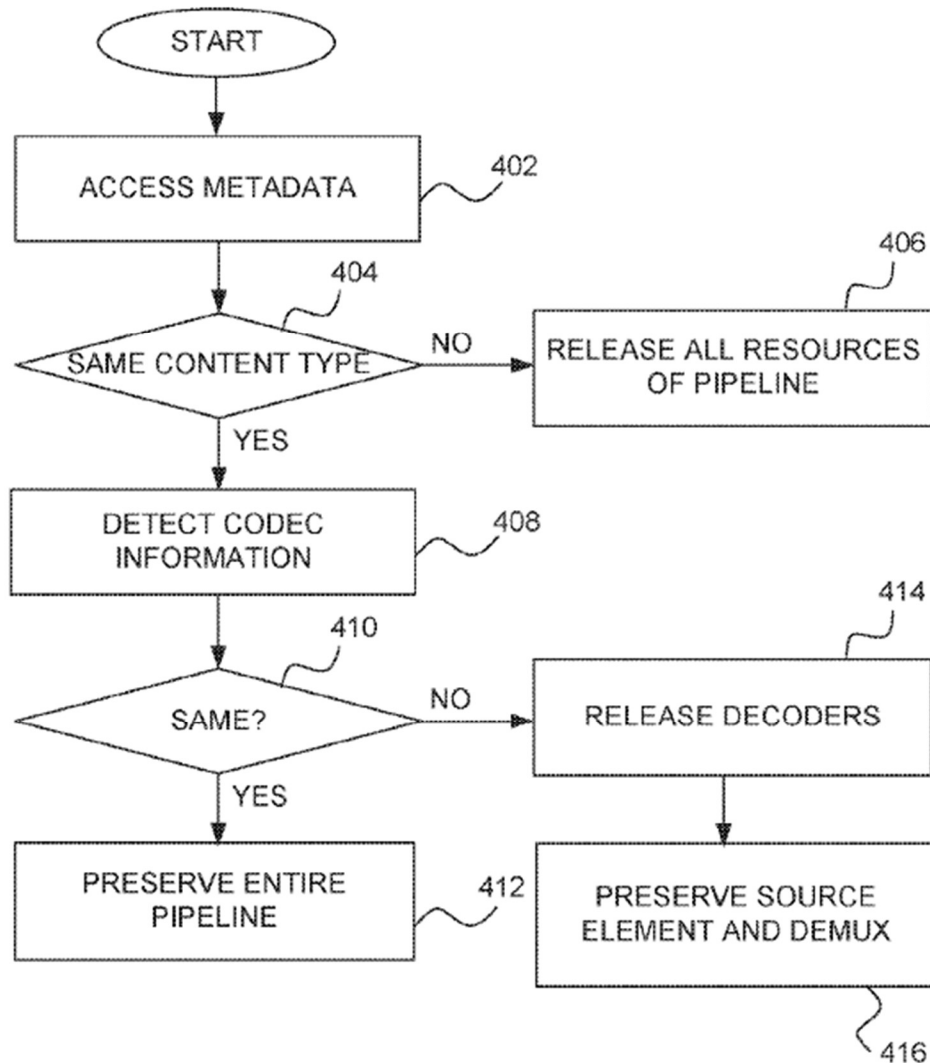
EX1001, Fig. 2.

As shown in Figure 2, the player manages the pipeline and, in example embodiments, constructs the pipeline when a first piece of content is selected for playback. *Id.* at 4:66-5:12. A different pipeline may be constructed for each type of

content. For example, the player may construct an HTTP Live Streaming (“HLS”) pipeline for HLS content, or a Dynamic Adaptive Streaming over HTTP (“DASH”) pipeline for DASH content. *Id.* at 5:3-6. The pipeline is constructed by acquiring resources for obtaining and processing content data so that selected content can be played back. *Id.* at 5:13-15. The pipeline includes, among other components, a source element, a demultiplexer (“demux”), an audio decoder, and a video decoder. *Id.* at 5:15-18.

The source element is an important element of the claimed pipeline. *See, e.g., id.* at 14:65-15:1. The specification explains that the source element manages the downloading of content data for the selected content. *Id.* The demux and decoders perform different functions within the pipeline. The demux demultiplexes content data obtained from the CDN server or content provider to obtain audio signal and video signal data. *Id.* at 5:36-43. The audio signal is transmitted to the audio decoder, and the video signal is transmitted to the video decoder. *Id.* The resulting outputs are then transmitted to the viewing device for presentation to the user. *Id.* Thus, the claimed playback pipeline is not merely a rendering concept. Rather, it includes specific components for obtaining, separating, decoding, and presenting content data in an online streaming environment. *Id.* at Abstract, 3:1-22, 5:36-43; *see id.* at 4:49-5:12.

Figure 4 illustrates an example embodiment of the pipeline preservation process:



EX1001, Fig. 4.

In operation, the player determines whether the first piece of content and the new content are of the same content type, such as whether both are HLS or both are DASH. *Id.* at 7:48-8:6. If the content types are not the same, the player releases the

resources of the pipeline and constructs a new pipeline applicable to the new content. *Id.* at 7:64-8:4.

In the example of Figure 4, if the content types are the same, the player detects codec information for the new content and determines whether the same decoder types currently in the pipeline can be used for the new content. *Id.* at 8:7-10. If the decoders are the same, the pipeline is preserved, and its resources are maintained and used to play back the new content. *Id.* at 8:15-22. If the content types are the same but the new content requires different decoders, the decoders are released, while a remaining portion of the pipeline—such as the source element and demux—is preserved or maintained. *Id.* at 8:23-33. A new compatible decoder set is then acquired and connected to the preserved portion of the pipeline. *Id.*

These inventive aspects, among others, are captured by the '703 patent's independent Claims 1, 11, and 20. Specifically, Claims 1, 11, and 20 each require, *inter alia*: (i) in response to the receiving of the selection, transitioning to the new piece of content; (ii) determining whether the new piece of content is of a same content type as the first piece of content; (iii) a playback pipeline including a demultiplexer, audio decoder, video decoder, and source element to manage the downloading of content data for the new piece of content; and (iv) determining whether to preserve at least a portion of a playback pipeline. *Id.* at 14:54-17:30:

Claim	Claim Language
1[pre]	A method performed by a digital receiver, the method comprising:
1[a]	receiving a selection of a new piece of content for playback during playback of a first piece of content;
1[b]	in response to the receiving of the selection, transitioning to the new piece of content;
1[c]	determining whether the new piece of content is of a same content type as the first piece of content; and
1[d]	based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content, the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.
11[pre]	A system comprising:
11[a]	one or more hardware processors; and
11[b]	a storage device storing instructions that configure the one or more hardware processors to perform operations comprising:
11[c]	receiving a selection of a new piece of content for playback during playback of a first piece of content;
11[d]	in response to the receiving of the selection, transitioning to the new piece of content;
11[e]	determining whether the new piece of content is of a same content type as the first piece of content; and

Claim	Claim Language
11[f]	based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content, the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.
20[pre]	A machine-storage medium storing instructions that when executed by one or more hardware processors of a machine, cause the machine to perform operations comprising:
20[a]	receiving a selection of a new piece of content for playback during playback of a first piece of content;
20[b]	in response to the receiving of the selection, transitioning to the new piece of content;
20[c]	determining whether the new piece of content is of a same content type as the first piece of content; and
20[d]	based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content, the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.

See EX1001; *see also* Paper 1 at viii-xii.

Because these limitations are present in independent Claims 1, 11, and 20 (the “Challenged Independent Claims”), they are, respectively, present in all Challenged Claims.

III. LEGAL STANDARD

The Board may not institute an *inter partes* review unless the Petition demonstrates a reasonable likelihood that the petition would prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a). “[T]he burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence.’ 35 U.S.C. § 316(e). That burden never shifts to the patentee.” *FanDuel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1341 (Fed. Cir. 2020). “[M]ere conclusory statements” by Petitioner will not meet that burden. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); *see also Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 160 (Fed. Cir. 2021). In addition, expert testimony may not be used to supply a missing claim limitation. *See* 37 C.F.R. § 42.104(b)(4); Memorandum from Coke Morgan Stewart to Members of the Patent Trial and Appeal Board (July 31, 2025) (hereinafter, “Stewart Memo.”).

IV. CLAIM CONSTRUCTION

For purposes of this Preliminary Response, Patent Owner contends that the claims should be given their ordinary and customary meaning in light of the specification and prosecution history, as understood by a person of ordinary skill in

the art. 37 C.F.R. § 100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005).

Patent Owner reserves the right to propose constructions at a later date, should such construction become necessary.

V. LEVEL OF ORDINARY SKILL IN THE ART

For the purposes of Patent Owner's Preliminary Response only, Patent Owner does not contest Petitioner's proposed level of ordinary skill in the art. Patent Owner does not waive, however, any argument regarding the proper level of skill, and further reserves the right to later advance additional arguments.

VI. THE PETITION DOES NOT ESTABLISH A REASONABLE LIKELIHOOD THAT THE APPLIED REFERENCES RENDER THE CHALLENGED CLAIMS UNPATENTABLE

Petitioner raises six grounds in its Petition that are premised on Orr or Hervey, with two secondary references. These grounds are summarized as follows:

Ground	Basis	References	Claims
1	§ 103	Orr	1-4, 8-9, 11-14, 18-20
2	§ 103	Orr, Hsu	6-7, 10, 16-17, 19
3	§ 103	Orr, Lim	5, 15
4	§ 103	Hervey	1-4, 8-9, 11-14, 18-20
5	§ 103	Hervey, Hsu	6-7, 10, 16-17, 19
6	§ 103	Hervey, Lim	5, 15

Paper 1 at 3.

Grounds 1-3 of the Petition should be denied because Orr¹ at least does not disclose the claimed playback pipeline including (1) a demultiplexer; (2) an audio decoder; or (3) a source element to manage the downloading of content data. Because Orr does not disclose the claimed “playback pipeline,” it also does not disclose preservation of at least a portion of the claimed playback pipeline.

Grounds 4-6 of the Petition should be denied because Hervey at least does not disclose (1) in response to the receiving of the selection, transitioning to the new piece of content; or (2) determining whether the new piece of content is of a same content type as the first piece of content.

A. The Petition Does Not Establish a Reasonable Likelihood that Orr Discloses All Elements of the Challenged Independent Claims, and thus the Challenged Claims.

Orr does not render the ’703 patent obvious because Orr does not disclose the specific “playback pipeline” required by the Challenged Independent Claims. The ’703 patent claims a playback pipeline that includes, among other components, a

¹ Because Orr and Hervey do not disclose limitations of the ’703 patent’s independent claims, the Patent Owner does not address references Hsu and Lim, which are only used to allege invalidity of dependent claims. *See* Paper 1 at i-v. In other words, Orr and Hervey do not render the ’703 patent’s independent claims unpatentable, so Hsu and Lim cannot render claims dependent therefrom unpatentable.

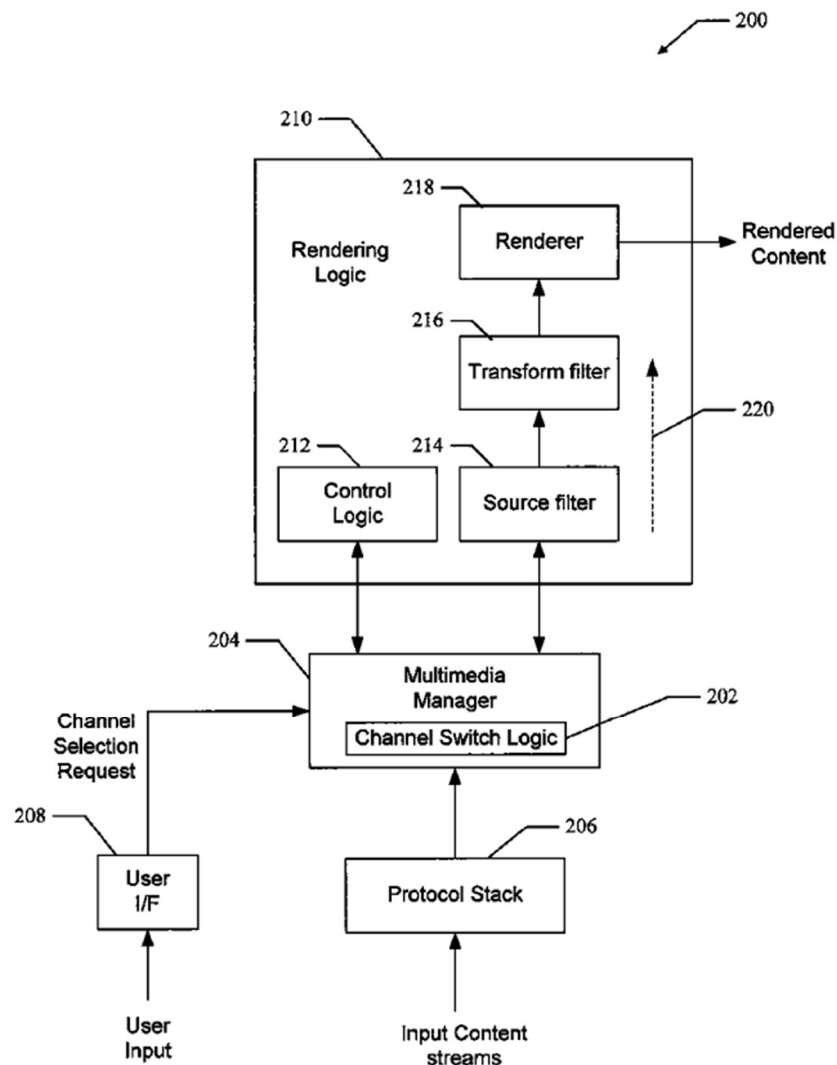
source element that manages downloading content data for the new piece of content, a demultiplexer, and an audio decoder. Orr’s “rendering pathway” is materially different. It is directed to processing already-received content for rendering, and the Petition relies on conclusory mappings to try to craft elements that do not exist, nor are obvious, in Orr’s disclosure.

Because Orr does not disclose the claimed “playback pipeline,” it likewise cannot disclose determining whether to preserve at least a portion of that playback pipeline. Therefore, the Petition’s Orr-based arguments (Grounds 1-3) fail for the Challenged Independent Claims and all claims that depend therefrom.

1. Overview of Orr

Orr, a U.S. Patent Application Publication entitled “Methods and Apparatus for Fast Channel Switching Between Real Time Content on a Device,” describes a channel-switching mechanism for real-time multimedia content. EX1005. Orr is directed to reducing delays associated with switching between channels. *Id.*, ¶¶ [0003]-[0005], [0015], [0022], [0029]. In Orr, content is delivered as streams comprising audio, video, and other data, which are processed by rendering logic configured as a “rendering pathway[.]” *Id.*, ¶¶ [0017]-[0019], [0023]-[0024]. The rendering logic includes elements such as a source filter, a transform filter, decoders, and a renderer. *Id.*, ¶ [0024].

Orr explains that, when a user requests a channel change, the system determines whether the content of the new channel can be handled by the existing rendering pathway. *Id.*, ¶¶ [0020]-[0022], [0037], [0042]-[0044]. The architecture of that rendering pathway is shown in Orr's Figure 2 (element 220):



EX1005, Fig. 2; *see also* EX1005, ¶¶ [0023]-[0029]. If the content type is compatible—for example, if it requires the same filters—the new content is input into the existing pathway, thereby avoiding the teardown and reconstruction of the

rendering pathway. *Id.*, ¶¶ [0015], [0028]-[0029], [0037], [0044]-[0047]. Conversely, if the content type differs, such as by requiring a different format or different decoding requirements, the existing rendering pathway is torn down and a new one is constructed. *Id.*, ¶¶ [0027], [0044]-[0046].

Thus, Orr is concerned with reusing a compatible rendering pathway to reduce channel-switching delay. *Id.*, ¶¶ [0015], [0022], [0029], [0037]. But Orr’s disclosure is framed around the complete reuse or deconstruction of a “rendering pathway” for already-received content, not the claimed playback pipeline of the ’703 patent, which includes a source element for managing the downloading of content data for the new piece of content, an audio decoder, and a demux. *See id.*, ¶¶ [0018], [0023]-[0024], [0033], [0046]-[0047].

2. Orr Fails to Render the Independent Claims Obvious Because It Does Not Teach or Suggest a Playback Pipeline (Grounds 1-3).

The Petition’s Orr grounds fail because Orr does not teach or suggest the “playback pipeline” required by the Challenged Independent Claims. Orr does not disclose at least the required demultiplexer, audio decoder, or source element that manages downloading content data for the new piece of content. Without those required components, Orr does not disclose the claimed playback pipeline and therefore cannot render the Challenged Independent Claims obvious.

a. Orr Does Not Disclose a Demultiplexer.

The Petition's reliance on Orr fails to render any of the '703 patent obvious because Orr does not teach or suggest the "demultiplexer" required by the Challenged Independent Claims. The demultiplexer separates received content data into audio data and video data so that those signals can be provided to separate decoders. *E.g.*, EX1001 at 5:36-41. The Petition does not identify such a demultiplexer in Orr.

Instead, the Petition relies on Orr's "source filter," asserting that it performs demultiplexing because it "extracts media data for presentation to the transform filter 216." Paper 1 at 31-32 (quoting EX1005, ¶ [0024]). That is not enough. Orr does not state that source filter *separates* received data into audio data and video data. *See* EX1005, ¶ [0024]. Nor does Orr disclose that source filter outputs *separate* audio and video signals to corresponding audio and video decoders. *See id.* Orr's statement that source filter "understands the format of the received transport stream and extracts media data for presentation" is materially different from a disclosure of the claimed demultiplexer. *See id.* Further, Orr's extracted "media data" is undefined, unexplained, and only appears once in the entire disclosure. *See id.*

The Petition's argument, therefore, depends on multiple inferential steps to supply an element not present in Orr. The Petition starts from Orr's disclosure that content may include video and audio, then assumes that decoders operate on separate

audio or video signals, and from there concludes that Orr’s source filter must extract separate video and audio signals. Paper 1 at 31-33. But the Petition’s inference is not Orr’s disclosure. To be inherent to Orr, the alleged demultiplexer must “‘necessarily must be present, or the natural result of the combination of elements explicitly disclosed by the prior art.’” *Hospira, Inc. v. Fresenius Kabi USA, LLC*, 946 F.3d 1322, 1329 (Fed. Cir. 2020) (quoting *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195-96 (Fed. Cir. 2014)). Given that “media data” is not defined or explained, it cannot be said that extracting media data equates to separating elementary streams from a content file. In other words, there is no indication that “media data” is an elementary audio or video stream—according to Orr or the Petition. EX1005; Paper 1.

The Petition’s obviousness fallback also fails for numerous reasons. Paper 1 at 32-33. First, the Petition does not explain why a POSITA would have modified Orr’s particular rendering pathway to add the demultiplexer, how that demultiplexer would interact with Orr’s source filter and transform filter, and why the modified system would still meet the claimed preservation requirements.

Second, the Petition cites to a patent application to Ikeda (US 2015/0104158) for the general proposition that demultiplexers for extracting digital audio and video signals were well-known in the art. Paper 1 at 32 (citing EX1017, ¶ 52). Notwithstanding the fact that Ikeda is not identified as part of any of the challenged

Grounds, the Petition fails to provide any support for the specific combination of the demultiplexer from Ikeda with Orr.

Third, the Petition relies on Orr’s disclosure of “one flow per channel and each flow comprising video, audio, captioning, and overlays etc” to argue that Orr discloses that its content signals contain both a video and an audio signal. *Id.* (citing EX1005, ¶[0018]). But demultiplexing is only necessary when audio and video are multiplexed to begin with. Numerous streaming protocols *do not* transmit multiplexed audio and video streams. One example, the Real Time Streaming Protocol (“RTSP”) has been known since approximately 1996, over ten years before Orr’s disclosure. *See* EX2013 at 2; *see also* EX1005. RTSP itself does not transport media but instead uses the Real-time Transport Protocol (“RTP”). EX2013 at 5. Orr itself expressly discloses use of RTP. EX1005, ¶ [0017] (“. . . the content may be provided in a real time transport protocol (RTP) . . .”).

Showing that demultiplexers are not always required, and not advisable in all cases, the developers of RTP stated as much:

2.2 Audio and Video Conference

If both audio and video media are used in a conference, they are transmitted as separate RTP sessions. RTCP packets are transmitted for each medium using two different UDP port pairs and/or multicast addresses. There is no direct coupling at the RTP level between the audio and video sessions, except that a user participating in both sessions should use the same distinguished (canonical) name in the RTCP packets for both so that the sessions can be associated.

One motivation for this separation is to allow some participants in the conference to receive only one medium if they choose. Further explanation is given in [Section 5.2](#). Despite the separation, synchronized playback of a source's audio and video can be achieved using timing information carried in the RTCP packets for both sessions.

EX2014 at 6 (annotations added). Since the development of RTP, the use of demultiplexed streaming has only increased. EX2015 at 1 (“There has been a steady transition to **demuxed** streaming, where the audio and video segments (A.K.A. chunks) are sent independently, then matched together by the player. Demuxed streaming **can save money** by requiring less server storage, and it can improve CDN usage. It also offers **more audio options**.”) (emphasis in original). The petition therefore fails to show that the “flows” of Orr must include multiplexed audio and video thereby requiring a demultiplexer.

Fourth, the Petition points to Orr’s disclosure of software decoders such as an H.264 video decoder. *Id.* (citing EX1005, ¶[0024]). But that does nothing to support the inference that the flow of Orr must include multiplexed audio and video.

Finally, the Petition relies on the declaration of Dr. Freedman. *Id.* at 33 (citing EX1002, ¶70). But Dr. Freedman’s declaration simply quotes the Petition nearly verbatim and does not address the deficiencies identified above. Dr. Freedman’s conclusory statements on their own are insufficient to establish obviousness. *See In re Nuvasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (identifying that conclusory statements are insufficient to support obviousness—findings must be supported by a reasoned explanation). Nor can Dr. Freedman’s testimony alone supply the missing demultiplexer. *See* Memorandum from Coke Morgan Stewart to Members of the Patent Trial and Appeal Board (July 31, 2025) (“Rule 104(b)(4) means that . . . *expert testimony, common sense, and other evidence that is not ‘prior art consisting of patents or printed publications’ . . . may not be used to supply a missing claim limitation. Per 35 U.S.C. § 312(a)(4), the Board shall deny an IPR petition that fails to comply with Rule 104(b)(4).*”) (emphasis added).

Accordingly, Orr does not disclose or render obvious the claimed “demultiplexer.”

b. Orr Does Not Disclose an Audio Decoder.

The Petition’s reliance on Orr to supply the “audio decoder” required by the Challenged Independent Claims fails for reasons similar to the missing “demultiplexer” described above.

The Petition does not identify any audio decoder in Orr. *See* Paper 1 at 33-34. Instead, the Petition points to Orr’s generic statement that content may include “audio” and that rendering logic may include elements “needed to decode and render the content.” Paper 1 at 33 (citing EX1005, ¶¶ [0018]-[0019]). But a disclosure that content includes audio is not a disclosure of an audio decoder. Nor is a generic reference to “decode and render” content a disclosure of the claimed audio decoder as a component of the claimed playback pipeline. *See id.* As explained above, a limitation “‘necessarily must be present, or the natural result of the combination of elements explicitly disclosed by the prior art’” in order to be inherently disclosed by a reference. *Hospira*, 946 F.3d at 1329 (quoting *PAR Pharm.*, 773 F.3d at 1195-96). Orr does not disclose that audio is compressed to begin with (it only implies that *video* is compressed and decompressed). EX1005. Because uncompressed audio content exists, such as the Waveform Audio File, Audio Interchange File, and Direct Stream Digital formats, *see* EX2016 at 7-8, an audio decoder need not “necessarily” be present nor a “natural result” of Orr, which does not disclose audio compression in the first instance, *see* EX1005.

The Petition’s obviousness fallback is likewise insufficient. Paper 1 at 33-34. The Petition asserts that audio decoders were well known and that a POSITA would have been motivated to include one so audio could be rendered. *Id.* But the issue is not whether audio decoders existed. It was Petitioner’s burden to explain why a

POSITA would have modified Orr's particular rendering-pathway architecture to include the claimed audio decoder as a component of the playback pipeline, where that audio decoder would be placed, how it would interact with Orr's source filter, transform filter, and renderer, and why the modified pathway would satisfy the claimed preservation limitation. The Petition does not provide that analysis, and instead relies, again, on conclusory expert declaration, Paper 1 at 33-34, which is fatal to Petitioner's argument. *See Nuvasive*, 842 F.3d at 1383; *Kahn*, 441 F.3d at 988; *KSR*, 550 U.S. at 418; Paper 1 at 33-34. Accordingly, Orr does not disclose or render obvious the claimed "audio decoder."

c. Orr Does Not Disclose a Source Element to Manage the Downloading of Content Data.

Orr also fails to disclose or otherwise render obvious the claimed "source element to manage the downloading of content data for the new piece of content[.]" EX1001 at 14:65-15:1; 16:11-13, 17:22-25. The Challenged Independent Claims do not merely require that some component *receive* content data. Rather, the claimed playback pipeline must include a source element that *manages the downloading* of content data for the new piece of content. *See id.*; *see also id.* at 5:15-20. The '703 patent's specification confirms that the source element is a distinct component of the pipeline: "the pipeline 204 comprise[s] a source element 212, a demultiplexer ('demux') 214, an audio decoder 216, and a video decoder 218," and the "source

element 212 manages the downloading of content data for the selected piece of content.” *Id.* at 5:15-20.

The Petition asserts that Orr’s “protocol stack” and “protocol stack interface,” together, constitute the claimed source element. *Id.* at 28. According to the Petition, the protocol stack “receives content from a network or communication channel,” and therefore “is downloading content.” *Id.* at 29 (emphasis removed). The Petition then asserts that the protocol stack and protocol stack interface “manage the downloading” because the protocol stack interface provides “control signals to request selected content data” *Id.* (quoting EX1005, ¶ [0033]). But even accepting the Petition’s premise that the protocol stack receives or downloads content, the cited passages do not show that the identified combination “manage[s] the downloading of content data.” *See, e.g.*, EX1001 at 14:65-15:1.

Orr’s actual disclosure is materially narrower. Orr states that a “protocol stack 206 receives content streams from one or more sources[,]” such as “from a network and/or from another communication channel.” EX1005, ¶ [0023]. Orr separately discloses that the protocol stack interface allows the channel switch logic “to receive content data and/or other information associated with one or more received content channels[,]” and that the protocol stack “may receive channel content from a variety of sources and operates to make this channel content available to the protocol stack interface 310.” *Id.*, ¶ [0033]. The protocol stack interface then “provide[s] protocol

stack control signals to request selected content data from a protocol stack” and “receive[s] content data associated with a selected content channel from the protocol stack.” *Id.* At most, this describes requesting or retrieving selected content from the protocol stack after the protocol stack has made received channel content available to the interface. It does not describe managing the downloading of content data from a network or content source. *Compare id. with* EX1001 at 14:65-15:1.

These shortcomings in Orr’s disclosure matter. The claim requires a source element “to manage the downloading of content data for the new piece of content,” as part of an individual playback pipeline, not merely a downstream interface that requests selected data from another internal component. *See* EX1001 at 14:65-15:1. The Petition never explains how control signals sent from the protocol stack interface to the protocol stack manage the downloading performed by the protocol stack itself. *See* Paper 1 at 28-31. Nor does it identify any disclosure in Orr that the protocol stack interface controls how content is downloaded, when a network download begins, how download resources are managed, or how content data is obtained from a source. *See id.* Instead, Orr’s cited disclosure describes an internal request-and-receive relationship between the protocol stack interface and protocol stack. *See* EX1005, ¶¶ [0033], [0033].

The Petition’s alternative real time transport protocol (“RTP”) theory fares no better. The Petition asserts that a POSITA would understand the protocol stack to

manage downloading because RTP packets may include sequence numbers and RTP packet synchronization source identifiers (“SSRC”), and because packets may be reordered or assigned to respective streams. Paper 1 at 29-31. The Petition fails to describe why packet reordering or SSRC-based stream identification constitutes “manag[ing] the downloading of content data[,]” rather than post-receipt packet or stream processing. *See id.*; *e.g.*, EX1001 at 14:65-15:1. The Petition’s own description confirms that this alleged functionality concerns what happens to packets *after* they have been received—*e.g.*, reordering packets “if they are received out of order” and using SSRC information to “assign the packets to their respective stream.” Paper 1 at 30-31. That is not a disclosure of a source element that manages downloading of content data for the new piece of content.

Again, the Petition rests on a conclusory assertion that a POSITA would understand “managing when the new content should be downloaded” to be “managing the downloading of the new piece of content.” Paper 1 at 29 (emphasis removed). But the cited Orr disclosure does not describe managing when new content should be downloaded. EX1005. It merely describes requesting selected content data from a protocol stack and receiving that content data from the protocol

stack.² *Id.*, ¶ [0033]. Conclusory expert testimony cannot supply a missing claim limitation. *See Nuvasive*, 842 F.3d at 1383.

Because the Petition fails to show that Orr discloses a “source element to manage the downloading of content data for the new piece of content,” it fails to establish a reasonable likelihood that Orr renders the Challenged Independent Claims obvious.

3. Orr Fails to Render the Independent Claims Obvious Because It Does Not Teach or Suggest Preservation of the Playback Pipeline.

The Petition’s reliance on Orr fails for an additional reason: Orr does not teach or suggest the “determining whether to preserve at least a portion of a playback pipeline” required by the Challenged Independent Claims. *See, e.g.*, EX1001 at 14:63-65. As explained in the preceding sections, Orr does not teach or suggest the claimed playback pipeline because it does not disclose a “source element,” “a demultiplexer,” or “a video decoder.” Orr therefore cannot by definition teach the

² While not dispositive here, it is telling that the Petition identified a completely different Orr element as the “source element” of a European Patent nearly identical to the ’703 patent. In a related UPC action, Petitioner took the position that Orr’s “source filter” is a “source element,” rather than Orr’s “protocol stack” and “protocol stack interface” here. *Compare* Paper 1 at 28-29 with EX2017 at 15-19. This is despite the patent at issue in the related UPC action having identical claim language: “the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content[.]” EX2011 at 18:13-15; *see also* EX1001 at 14:65-15:1.

claimed determination of whether to preserve at least a portion of the claimed playback pipeline. Accordingly, Orr fails to render the independent claims obvious.

4. Orr Fails to Render the Dependent Claims Obvious for the Same Reasons.

Claims 2-10 and 12-19 all depend, either directly or indirectly, from Claims 1 and 11, respectively. EX1001 at 14:54-17:30. Because Orr does not disclose or render obvious independent Claims 1 or 11, the Petition fails to render the dependent claims obvious.

B. The Petition Does Not Establish a Reasonable Likelihood that Hervey Discloses All Elements of the Challenged Independent Claims, and thus the Challenged Claims (Grounds 4-6).

The Petition's reliance on Hervey for Grounds 4-6 fails because Hervey does not disclose several limitations required by the Challenged Independent Claims. Hervey is a high-level, work-in-process GStreamer presentation concerning decodebin3 stream-selection concepts, not a disclosure of the claimed content-change methods and systems. It does not teach that, in response to receiving a user selection of a new piece of content, the system transitions to that new piece of content, nor does it teach determining whether that new piece of content is of the same content type as the first piece of content. Accordingly, Hervey fails to render the Challenged Independent Claims obvious, and the Hervey-based arguments fail for all dependent claims as well.

1. Overview of Hervey

Hervey, a slide deck entitled “‘decodebin3’ Modern playback Use-Cases,” concerns GStreamer’s decodebin architecture. EX1009. Hervey discusses an older GStreamer playback architecture, decodebin2, identifies problems with that architecture, and then proposes a potential future version, decodebin3, designed to improve on decodebin2 for modern playback scenarios. *See id.* at 5, 7-16, 23-26, 34. Hervey introduces a proposed object for decodebin3: a GstStream object. *Id.* at 17-21. Hervey also presents a general architecture for the proposed decodebin3 design. *Id.* at 23-26.

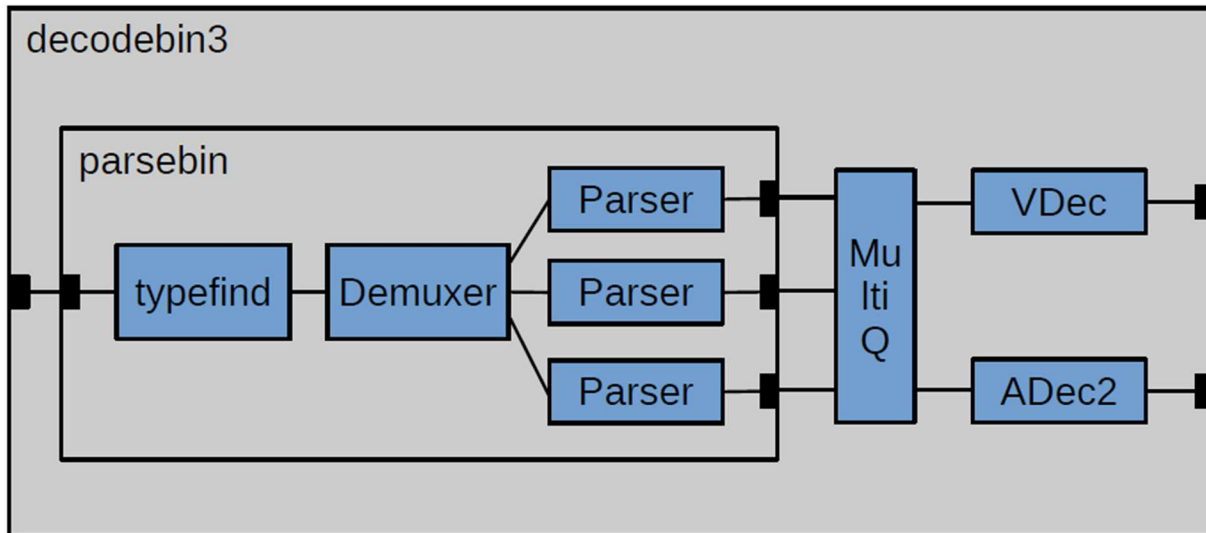
The decodebin3 architecture described in Hervey concerns elementary streams, such as an audio, video, or text stream:

decodebin3

- Output of GstParseBin(s) fed to multiqueue
 - Parsed Elementary Streams
 - Multiqueue “slots” (sink + src pad) are typed (audio, video,...)
 - If available slot of proper type, re-use, else create new one
- Selection is done post-multiqueue
 - Only thing that (might) need to be plugged is a decoder
 - By default only expose/decode one stream of each type
 - But you can also expose everything...
 - Or just what you selected via GST_EVENT_SELECT_STREAMS

Id. at 26 (annotation added). Hervey explains that such elementary streams are an output after demultiplexing and parsing a media item. *Id.* at 25-26, 31. More

importantly, Hervey discloses that “selection” is performed “post-multiqueue,” which occurs downstream of demultiplexer:



Id. at 24; *see also id.* at 26. In other words, Hervey *only* addresses “selection” of demultiplexed elementary streams, not the input piece of content. *See id.* at 24, 26.

Hervey therefore concerns the handling and selection of elementary streams within a GStreamer pipeline. *Id.* at 17-22, 26-29. It does not disclose at least the ’703 patent limitations of (1) in response to the receiving of the selection, transitioning to the new piece of content; and (2) determining whether the new piece of content is of a same content type as the first piece of content.

2. Hervey Fails to Render the Independent Claims Obvious Because It Does Not Teach or Suggest in Response to the Receiving of the Selection, Transitioning to the New Piece of Content.

First, the Petition’s reliance on Hervey fails because Hervey does not teach or suggest “in response to the receiving of the selection, transitioning to the new piece of content,” as required by the Challenged Independent Claims. *See* EX1001 at 14:58-59, 16:3-4, 17:15-16. The Petition attempts to satisfy this limitation by pointing to Hervey’s discussion of “switching streams” in GStreamer, including the GST_EVENT_SELECT_STREAMS event. Paper 1 at 61-62; EX1009 at 28. But that disclosure concerns switching between elementary streams—such as switching from “audio1” to “audio2”—not transitioning from one “piece of content” to a different “piece of content” as claimed by the ’703 patent. EX1009 at 28.

The ’703 patent claims receiving a selection of a “new piece of content” and, in response, transitioning to that “new piece of content.” *E.g.*, EX1001 at 14:56-59. The specification describes pieces of content as programs, movies, shows, and the like selected for playback, and the claimed pipeline includes a source element that manages downloading content data for the new piece of content. *Id.* at 1:30-40, 3:54-56. Thus, the claimed transition is a content-level transition and not merely a change from one audio track, video stream, subtitle stream, or other elementary stream *within* a media item to another. *See id.* at 1:30-40, 3:54-56.

Hervey confirms that its “streams” are not the claimed “pieces of content.” Hervey’s slide 28—the slide on which the Petition relies—uses the example “video1” and “audio2,” then states a need to “switch audio1 to audio2.” EX1009 at 28.

Switching Streams

- GST_EVENT_SELECT_STREAMS
 - Ex : “video1”, “audio2”
 - Compare available, active, pending and requested streams.
 - Need to switch audio1 to audio2
 - Put audio2 in pending selection
 - Set idle probe on multiqueue output of audio1
 - Unlinks from decoder
 - Send GST_EVENT_RECONFIGURE to audio2 multiqueue source pad
 - Audio2 multiqueue source pad will use same logic as before

Id. (annotation added). What Hervey describes is a change between elementary streams. It does not disclose selecting a new program, movie, show, channel, or other piece of content, nor does it disclose that the system transitioned to such a new piece of content in response to that selection. *See id.* at 26-28. Hervey further distinguishes “media” from its constituent streams: slide 31 states that a “media” may “be composed of several different input streams,” and that decodebin3 can handle “all streams corresponding to one media.” *Id.* at 31. Accordingly, Hervey’s disclosure that decodebin3 can switch or select streams does not disclose transitioning to a new

piece of content. At most, it discloses changing which elementary stream within a media item is active. *See id.* at 26-31.

Nor does Hervey's mention of "gapless playback" cure this deficiency. *See id.* at 32 (citing EX1009 at 32). Indeed, the Petition does not show that this gapless playback discussion is the claimed transition "in response to the receiving of the selection" of a new piece of content during playback of a first piece of content. Paper 1 at 62-63. As Hervey's disclosure makes clear, GStreamer does *not* switch to new content upon a "selection." *See* EX1009 at 32. Instead, GStreamer provides an "about-to-finish" signal. *Id.* This is not the required "selection," but instead an automated code signal that is emitted when data is entirely buffered. *See id.*; *see also* EX2018 at 3-4 (Documentation for Mr. Hervey's published version of decodebin3 explaining that the "[about-to-finish] signal is emitted when the data for the selected URI is entirely buffered and it is safe to specify another URI."). The fact that this signal is not a selection is further confirmed by Hervey disclosing that "[u]sers have a chance to change the input" *in response to* the "about-to-finish" signal. EX1009 at 32.

Because Hervey does not teach or suggest "in response to the receiving of the selection, transitioning to the new piece of content," the Petition has not shown that Hervey renders the Challenged Independent Claims obvious.

3. Hervey Fails to Render the Independent Claims Obvious Because It Does Not Teach or Suggest Determining Whether the New Piece of Content Is of a Same Content Type as the First Piece of Content.

Hervey also fails to teach or suggest “determining whether the new piece of content is of a same content type as the first piece of content,” as required by the Challenged Independent Claims. *See, e.g.*, EX1001 at 14:60-61. The ’703 patent claims a determination about whether a newly selected piece of content is the same content type as the first piece of content. EX1001 at 14:60-61. The specification explains that a “content type” refers to the type of content pipeline applicable to the selected content, such as whether the first content and new content are both HLS or both DASH. *Id.* at 5:3-6, 7:48-8:6. Thus, the claimed comparison is performed at the level of a “piece of content” and its applicable playback pipeline—not at the level of elementary audio, video, or text streams extracted from a media item. *See id.* at 5:3-6, 7:48-8:6.

The Petition attempts to satisfy this limitation by pointing to Hervey’s discussion of stream type, stream selection, and decoder reuse. Paper 1 at 63-66. But Hervey’s cited disclosures concern elementary stream types—such as audio, video, or text. Hervey does not disclose that claimed content-type comparison. *See* EX1009 at 28-29. For example, Hervey clarifies that “media” can “be composed of several different input streams[.]” *Id.* at 31.

The fact that Hervey is focused on elementary streams is reinforced by slide 28 (relied on by the Petition at 63-64), which uses the example “video1” and “audio2,” then states a need to “switch audio1 to audio2.” *Id.* at 28. Slide 28 further concerns the use of GST_EVENT_SELECT_STREAMS. *Id.* However, according to documentation for GStreamer—the streaming framework that includes Hervey’s decodebin3—this constructor requests a stream be activated from GstStream objects, which “represent[] *a single stream.*” EX2019 at 11; EX2020 at 1 (emphasis added). In other words, Hervey’s comparison can only concern elementary streams (*e.g.*, audio, video, or subtitle text within a single video file) because the object that defines said switching concerns “a single stream.” EX2019 at 11; EX2020 at 1; EX1009 at 28. Accordingly, a determination that an elementary stream is “audio” or “video” is not a determination that a new piece of content is the same content type as a first piece of content.

The Petition’s reliance on Hervey’s disclosed decoder reuse fares no better. Paper 1 at 64-65. Hervey’s reuse discussion asks whether a decoder can accept a particular elementary stream and then links to the existing decoder if the elementary stream is compatible. EX1009 at 29. In other words, the decoder checks for acceptance of a particular elementary stream (*e.g.*, audio or video), not a comparison between the content type of two pieces of content. *See id.*

Hervey's disclosure of "[c]hecking if decoder can accept CAPS" does not supply the missing content-type comparison of the '703 patent: "determining whether the new piece of content is of a same content type as the first piece of content." Paper 1 at 65-66; EX1009 at 29; *see* EX1001 at 14:60-61, 16:5-6, 17:17-18. As explained by Hervey, checking if a decoder can accept CAPS occurs on the "multiqueue source pad[.]" EX1009 at 29. But an *elementary stream*, not the '703 patent's "piece of content," is present at Hervey's multiqueue:

decodebin3

- Output of GstParseBin(s) fed to multiqueue
 - Parsed Elementary Streams
 - Multiqueue "slots" (sink + src pad) are typed (audio, video,...)
 - If available slot of proper type, re-use, else create new one
- Selection is done post-multiqueue
 - Only thing that (might) need to be plugged is a decoder
 - By default only expose/decode one stream of each type
 - But you can also expose everything...
 - Or just what you selected via GST_EVENT_SELECT_STREAMS

Id. at 26 (annotation added). Thus, Hervey is not performing "determining whether the new piece of content is of a same content type as the first piece of content". *See* Paper 1 at 65-66.

Finally, the Petition argues that it would be obvious to determine whether content is of the same content type when "[c]hecking if decoder can accept CAPS."

Id. (citing EX1002 (Freedman Declaration)). But neither the Petition nor Petitioner's expert provide a reasoned explanation of why one would modify Hervey to include an *upstream* comparison of content types when a *downstream* comparison of elementary streams already existed. *See* EX1009 at 24, 26, 29 (Hervey's downstream multiqueue, where CAPS comparison is performed, contains elementary streams); EX1001 at 14:60-61, 16:5-6, 17:17-18. The Petition's reliance on the conclusory opinion of Dr. Freedman cannot support disclosure of the claimed comparison of content types. *See Nuvasive*, 842 F.3d at 1383.

Because Hervey does not teach or suggest "determining whether the new piece of content is of a same content type as the first piece of content," the Petition fails to show that Hervey renders the Challenged Independent Claims obvious.

4. Hervey Fails to Render the Dependent Claims Obvious for the Same Reasons.

Claims 2-10 and 12-19 all depend, either directly or indirectly, from Claims 1 and 11, respectively. EX1001 at 14:54-17:30. Because Hervey does not disclose or render obvious independent Claims 1 or 11, the Petition fails to render the dependent claims obvious.

CONCLUSION

The Petition does not establish a reasonable likelihood that any of the challenged claims are unpatentable. Therefore, institution should be denied.

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Respectfully submitted,

/Cyrus A. Morton/
Cyrus A. Morton
(Registration No. 44,954)
CMorton@RobinsKaplan.com
Lead Counsel
Benjamin C. Linden
(Registration No. 81,276)
BLinden@RobinsKaplan.com
Back-Up Counsel
ROBINS KAPLAN LLP
800 LaSalle Avenue, Suite 2800
Minneapolis, MN 55402
Phone: 612-349-8500
Fax: 612-339-4181
Attorneys for Patent Owner

WORD-COUNT CERTIFICATE

The undersigned certifies that the foregoing Patent Owner's Preliminary Response complies with the type-volume limitation of 37 C.F.R. § 42.24(a) and (b) and contains 7,139 words in 14-point Times New Roman font as calculated by the word count feature of Microsoft Office. This word count is inclusive of all text and footnotes but does not include the table of contents, table of authorities, certificates of service or word count, or appendix of exhibits or claim listing.

Dated: July 8, 2026

/Cyrus A. Morton/
Cyrus A. Morton
(Registration No. 44,954)
CMorton@RobinsKaplan.com
ROBINS KAPLAN LLP
800 LaSalle Avenue, Suite 2800
Minneapolis, MN 55402
Phone: 612-349-8500
Fax: 612-339-4181
Attorneys for Patent Owner

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Patent Owner's Preliminary Response was served on July 8, 2026, by electronic mail to Petitioner's counsel at the following addresses indicated in Petitioner's Mandatory Notices:

James M. Glass
jimglass@quinnemanuel.com

Ron Hagiz
ronhagiz@quinnemanuel.com

Quincy Lu
quincylu@quinnemanuel.com

Dated: July 8, 2026

/Cyrus A. Morton/
Cyrus A. Morton
(Registration No. 44,954)
CMorton@RobinsKaplan.com
ROBINS KAPLAN LLP
800 LaSalle Avenue, Suite 2800
Minneapolis, MN 55402
Phone: 612-349-8500
Fax: 612-339-4181
Attorneys for Patent Owner