

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX INC. AND HULU, LLC,
Petitioners,

v.

DIVX, LLC,
Patent Owner.

Case IPR2020-00558
Patent 10,225,588

**PATENT OWNER'S PRELIMINARY RESPONSE
TO PETITION FOR INTER PARTES REVIEW
OF UNITED STATES PATENT NO. 10,225,588
PURSUANT TO 35 U.S.C. § 313, 37 C.F.R. § 42.107**

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EXHIBIT LIST	
2001	Reserved
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2003	Excerpts from U.S. Patent Application No. 14/564,003 File History [003 CON FH]
2004	U.S. Patent No. 9,247,311 [Patent from 12/8/14 Continuation]
2005	Excerpts from U.S. Patent Application No. 14/970,412 File History [412 CON FH]
2006	U.S. Patent No. 9,621,522 [Patent from 12/15/15 Continuation]
2007	Excerpts from U.S. Patent Application No. 15/481,340 File history [340 CON FH]
2008	U.S. Patent No. 10,244,272
2009	U.S. Patent No. 8,806,188 [Braness]
2010	Manning <i>et al.</i> , INTRODUCTION TO INFORMATION RETRIEVAL (2008) (excerpts) [Manning]
2011	US Pat. App. US2009/0290706A1 [Amini]

I. INTRODUCTION

The Petition should be denied because it presents the same or substantially the same art previously presented to and considered by the Office without error, and fails to demonstrate a reasonable likelihood of prevailing as to any challenged claim of United States Patent No. 10,225,588. It is founded on a primary reference, *Chen*, that was made of record and considered by the Examiner, that is cumulative of much closer art of record, and that lacks central limitations of the claims such as encrypting alternative streams of protected content with a “set of common keys” and inclusion of encryption information “within the requested portion of the selected stream of the protected video.” None of the thoroughly cumulative secondary art cited in the Petition comes close to bridging that gap, which, to use a geographical analogy, would be like trying to bridge the Mediterranean Sea: that is, even if it were possible, it would hardly be obvious.

The challenged '588 Patent discloses and claims systems and methods to perform “adaptive bitrate streaming using alternative streams of protected content.” *Patent*, 2:67-3:1. When streaming media is continuously sent to the playback device for adaptive streaming playback, it is important to prevent disruption of that playback, and for the playback device to be able to efficiently and effectively switch between different bitrate streams of the protected content depending on the current conditions of the network. *Id.*, 1:45-1:67. The Patent’s claimed inventions

accomplish this goal in novel ways that include, *inter alia*, the implementation of a set of common keys and partial frame encryption of selected streams of protected video, where the encryption information that identifies encrypted portions of the frames of the video is located within requested portions of the stream. *Id.*, 24:51-24:57; 16:21-52; cls. 1, 12.

The Petition's sole proposed ground of review alleges that all 24 claims are obvious over a combination of three references, *Chen* in view of *Lindahl* and *Hurst*.¹ The Ground essentially relies on its primary reference, *Chen*, for all limitations of claim 1, except that it relies on *Lindahl* for the alleged disclosure of partial encryption of video frames, and on *Lindahl* and *Hurst* for the alleged disclosure of use of a set of common keys to encrypt alternative streams of protected content. However, *Chen* was considered by the Examiner before allowing the claims, and all three references are thoroughly cumulative of art already of record and considered and discussed in the prosecution for years. That being so, it was Petitioner's burden to identify error in that prior prosecution, but the Petition does not even attempt to do so. Instead, it simply asks the Office to reconsider substantially the same art it has already considered, without finding any faults in any of that prior consideration.

¹ Exhibit 1006 [*Chen*]; Exhibit 1007 [*Lindahl*]; Exhibit 1008 [*Hurst*].

The petition should therefore be rejected as a matter of discretion under 35 U.S.C. § 325(d). *Infra* § II.

Even if the Board were to consider the Petition on the merits, the Petition facially fails to meet its burden to show that the independent claims 1, 12, or any other claims, are obvious over *Chen* in view of *Lindahl* and *Hurst*, for many reasons. **First**, the Petition fails to meet its burden to show that *Chen* in view of *Lindahl* and *Hurst* discloses the claimed “*locating*” of certain “encryption information...*within the requested portions of the protected video.*” ’588 Patent, 27:54-27:57 (claim 1).² The Petition relies on *Lindahl* for this limitation. Yet the Petition admits— indeed, affirmatively argues—that *Lindahl* teaches that its putative “encryption information” is retrieved from an ***undisclosed location***. The Petition simply disregards the express limitation that the encryption information must be located “within the requested portion” of the content. And Petitioner has a motive for ignoring this limitation, because *Lindahl* does not teach this limitation. *Lindahl* teaches a system where media files are downloaded in their entirety for future use, not a device or method like the claimed invention for playing portions of streaming video upon request. *Lindahl* simply has no occasion to address where encryption

² This encryption information “identifies encrypted portions of frames of video” that are subsequently decrypted and then played back. *Id.*, 27:58-63 (cl. 1).

information might be stored in a streaming system where media content can be partially requested. Since “[t]he petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon,” 37 C.F.R. § 42.104(b)(4), this missing limitation in the sole Ground is sufficient to foreclose institution under 35 U.S.C. § 314(a). *Infra* § III.

Institution is also foreclosed for a second, independent reason. The Petition fails to articulate any cognizable motivation to modify its primary reference *Chen* so that the putative alternative streams of media content are encrypted using “a set of common keys” as claimed. *See* § III, *infra*. The sole Ground relies wholly on *Lindahl* and *Hurst* for this limitation. Pet., 30-35. *Lindahl*, however, does not address the question of whether to encode different streams of content with the same or with different keys, because, as already noted, *Lindahl* teaches nothing more than a system where entire media files are downloaded for future use, and does not teach anything to do with streaming, let alone multiple streams encoded at different, alternative bitrates—there are no “alternative streams” in *Lindahl*, because there are no streams. § IV.A. *Hurst* does nothing to fill this void. Although *Hurst* makes a passing reference to the possibility of encrypting different streams of media with the same key, it offers the person having ordinary skill in the art at the time of the claimed invention (“PHOSITA”) no reason to modify *Chen* to do this; on the

contrary, it solely touts the benefits of instead using *different* keys for different streams. § IV.B.

Finally and most tellingly of all, having failed to show objective teachings in the prior art to modify *Chen* in view of *Lindahl* and *Hurst*, the Petition resorts to *the inventors' disclosures in the Patent itself* to find reasons to do so. In other words, the Petition cites the inventors' own descriptions of the benefits of their own novel combination as the PHOSITA's reasons for combining the prior art to reach that novel combination. However, "tak[ing] the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability" in this manner is "the essence of hindsight," *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999), and Petitioner's approach of citing the Patent against itself for obviousness purposes has been uniformly rejected. *Infra* § IV.C.

For these reasons, institution should be denied.

II. THE BOARD SHOULD REJECT THE PETITION UNDER § 325(d) BECAUSE THE SAME OR SUBSTANTIALLY THE SAME ART WAS PREVIOUSLY CONSIDERED WITHOUT ANY ERROR.

Under *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential), the Petition should be "reject[ed]...because[] the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. § 325(d). The Petition's three references are all cumulative of references discussed and

distinguished during the painstaking nine-year prosecution leading to issuance of the challenged claims, and the Petition's primary reference (*Chen*) is not only cumulative of art extensively discussed during prosecution of this Patent, but was made of record and considered by the same Examiner that has handled the entire prosecution from the beginning. What is more, Petitioner makes no attempt to establish or even allege that the Examiner "erred in evaluating the art or arguments" previously presented to the Office, as has "generally [been] required" for such cumulative petitions to be instituted under § 325(d). *Advanced Bionics*, 8. Instead, the Petition chooses to ignore the many years, thousands of pages, and hundreds of references made of record and considered during the prosecution of this subject matter, without pointing to a single error in that nearly decade-long process. This is exactly the sort of blinkered petition for review of a superlative prosecution that § 325(d) was designed to weed out.

While the Director always has discretion to deny *inter partes* review, *Advanced Bionics* sets forth a "two-part framework" for when the Director should exercise his discretion under § 325(d) in particular. *Advanced Bionics*, 8. **First**, it asks whether the petitioned art or arguments have been previously presented to the Office during proceedings pertaining to the challenged patent. *Id.*, 7. "Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the

prosecution history of the challenged patent,” which includes the entire “examination of the underlying patent application.” *Id.*, 7-8.

Second, if “the same or substantially the same art” or “arguments previously were presented to the Office,” the petitioner must show “that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, 8. Importantly, “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Id.*, 9. If Petitioner fails to meet its burden to show an error under this formidable standard, “the Director generally will exercise discretion not to institute *inter partes* review.” *Id.*, 8-9. “At bottom this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*, 9.

This Petition easily satisfies both parts of the *Advanced Bionics* framework. The Petition’s three references are all cumulative to references made of record and discussed for years during the long prosecution of this disclosure. The primary reference is not only cumulative, it was made of record and considered by the Examiner in the Track One prosecution of the Patent itself. And the Petition does not even argue, let alone show, that the Office made any errors in that prior work.

A. The Same Or Substantially The Same Art Previously Was Presented To And Expressly Considered By The Office.

The Petition's sole Ground is based on *Chen, Lindahl* and *Hurst*. Pet., 12. The relied-upon teachings in each of these references are wholly cumulative of references that have formed the nuclei of the Office's eight years of prosecution of the inventors' disclosure. *Chen* itself was literally made of record and considered when these claims were before the Examiner. These presentations of the same or substantially the same art satisfy the first part of *Advanced Bionics*' framework.

1. *The Claims Are The Product Of Years Of In-depth Prosecution.*

The '588 claims issue from the fourth of a series of continuation applications all entitled to the benefit of a previously filed December 29, 2011 non-provisional application and its supporting provisional application. Ex. 1001 ['588 Pat.], face page, feature 63; Ex. 1004 [12/29/11 App. (13/340,623) File Wrapper].³ All of this

³ The Petition asserts without evidence or articulated argument that the '588 patent cannot claim the benefit of the filing date of its provisional application, but that this question is also immaterial because all of the Petition's "relied-upon references...are prior art regardless." Pet., 11. This Response assumes, *arguendo*, that the relied-upon references are all prior art, and the Petition offers no showing that the '588 Patent is not entitled to its provisional date. Therefore, this benefit question need not be further addressed herein.

prosecution has been of the same disclosure, by the same Examiner. *Compare* Ex. 1004 [13/340,623 File Wrapper], 934, *with* Ex. 1001 ['588 Patent], face page. From its inception, it has concerned limitations that are either the same, or substantially or mostly the same, as limitations in the presently challenged claims. Ex. 1004, 900-920, 934-966 [first office action of first nonprovisional]; Ex. 2004 [patent from 12/8/14 continuation]; Ex. 2006 [patent from 12/15/15 continuation].

In his November 27, 2013 Office action in the prosecution of the original nonprovisional application (“11/27/13 OA”), Examiner Getachew rejected over, *inter alia*, Amini (US Pat. App. US2009/0290706A1) (Ex. 2011), claims having limitations of “a plurality of alternative streams of protected content,” “where each of the alternative streams of protected content are encrypted using common cryptographic information,” requesting portions of content from at least the plurality of alternative streams of protected content, accessing the protected content using the common cryptographic information, and playback of the requested content. Ex. 1004, 937. Thus, the limitations of those claims similarly appear in these claims. Examiner Getachew devoted nearly thirty pages of analysis to these and similar limitations in this Office action alone. *Id.*, 935-965.

The Office’s long examination of this disclosure has been meticulous. Examiner Getachew has carefully reviewed IDS’s for compliance with the rules for

such submissions, and has not hesitated to expressly refuse to initial references presented in IDS's when he has refused to actually review them. *See, e.g.:*

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Application Number</td><td>13/340,623</td></tr> <tr><td>Filing Date</td><td>Dec 29, 2011</td></tr> <tr><td>First Named Inventor</td><td>Michael George Kiefer</td></tr> <tr><td>Art Unit</td><td>2434</td></tr> <tr><td>Examiner Name</td><td>Abiy Getachew</td></tr> <tr><td>Attorney Docket Number</td><td>02359A</td></tr> </table>		Application Number	13/340,623	Filing Date	Dec 29, 2011	First Named Inventor	Michael George Kiefer	Art Unit	2434	Examiner Name	Abiy Getachew	Attorney Docket Number	02359A
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/A.G./	International Search Report for International Application No. PCT/US2005/025845 filed July 21, 2005, report completed February 5, 2007 and mailed May 10, 2007, 3 pgs.														
/A.G./	International Search Report for International Application No. PCT/US2007/063950 filed March 14, 2007, report completed February 19, 2008; report mailed March 19, 2008, 3 pgs.														
/A.G./	ITS International, "Fleet System Opts for Mobile Server", August 26, 1999, 1 page.														
/A.G./	Microsoft, Microsoft Media Platform: Player Framework, "Silverlight Media Framework v1.1", 2 pages. Jan. 7, 2010														
	~~Microsoft, Microsoft Media Platform: Player Framework, "Microsoft Media Platform Player Framework v2.0 (formerly Silverlight Media Framework)", 2 pages.~~														
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	~~"Netflix tunes on subtitles for PC, Mac streaming", 3 pgs.~~														
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.G./															

Ex. 1004, 91-92.

In the fourth of these continuation applications, from which the presently challenged claims issued, the Office granted Applicant's (Patent Owner's) petition for "Track One" prioritized examination. Ex. 1002, 2, 99. Once Applicant filed its proposed claims, Examiner Getachew, seeking "to accelerate the prosecution process" with its Track One status, initiated an interview with Applicant's representative and, as he explained in both an interview summary and the Notice of Allowability ("588-NOA"), proposed a detailed examiner amendment to the independent claims in order to place them "in condition for allowance." *Id.*, 564,

576. The Applicant's representative agreed and authorized the Examiner to further amend the claims that issued as claims 1, 7, 8, 12, 18 and 21, add claims 23 and 24, and cancel certain other proposed claims. *Id.*, 564. Examiner Getachew set forth detailed reasons these amended claims are patentable over all the "prior art of record, either taken by itself or in any combination," and particularly "Braness et al. (US 8,806,188)," which he described as "[t]he closest prior art." *Id.*, 571-572.

Examiner Getachew further found expressly that the IDS "submitted on November 19, 2018," "was in compliance with the provisions of 37 CFR 1.97" and "[a]ccordingly, the information disclosure statement is being considered by the examiner." *Id.*, 563. Over the course of days, Examiner Getachew considered these IDS's and painstakingly initialed the art submitted. *Id.*, 582-584 (signing and stating that the art was "[c]onsidered" on "12/07/2018"), 595-600 (same), 604-625 (same), 636-631 (same), 585-594 (stating art was "[c]onsidered" on "12/09/2018"), 601-603 (same), 661-662 (stating art was "[c]onsidered" on "01/22/2019"). As Petitioner admits, Pet., 12, the art thus "considered" includes *Chen*, the primary reference on which the Petition is based, *see* Ex. 1002, 618.

Not only does the Petition point to no error in this thoughtful prosecution, but each of the three references on which the Petition relies is substantially the same as the art previously presented during prosecution, as shown below.

2. *Chen, Lindahl, And Hurst Are All Cumulative Of References Considered And Discussed At Length During Prosecution.*

Despite submitting much of the thousands of pages of past prosecution of this disclosure into the record, Exs. 1002, 1004, Petitioner almost entirely ignores the Office's long prosecution of this subject matter. Petitioner has a motive to do so, for the three references on which the Petition relies are much farther afield from the claims than the references that the Examiner and Applicant discussed at great length for years during prosecution—which, in fact, Examiner Getachew expressly found are “the closest prior art” and “the second closest prior art” to the claims.

- a. *Chen is cumulative of the art the Notice of Allowance identified as “the closest prior art” to these claims.*

In the December 8, 2018 Notice of Allowability, Examiner Getachew noted that Braness is “the closest prior art” to these claims. Ex. 1002, 571. That conclusion is not surprising, for Braness's disclosure is extremely similar in many respects, in many places word for word, to the disclosure of the '588 patent. Ex. 2009 [Braness]. As Examiner Getachew explained, Braness, like the '588 Patent, “provides [s]ystems and methods for performing adaptive bitrate streaming using top level index files automatically generated based upon the capabilities of a playback devices,” and includes other relevant teachings such as the top level index file describing “a plurality of streams accessible to the playback device.” Ex. 1002, 571.

The Petition ignores Braness's existence. This is significant, for Braness is substantially closer to the challenged claims than the Petition's primary reference, *Chen*. As noted above, *Chen* and Braness are both of record and were both considered by Examiner Getachew. Ex. 1002, 438, 618; Ex. 1001, face page. The Examiner only actually discussed Braness, but because *Chen* is cumulative of Braness in all material respects, that is irrelevant to § 325(d).

For the limitations as to which the Petition relies on *Chen*, Braness is at least as close, and nearly always closer, to the claims than *Chen*. *Chen*'s cumulateness in view of Braness (Ex. 2009) is tabulated below.

Limitation	Braness	<i>Chen</i>
[1a]: A playback device for playing protected content from a plurality of alternative streams, comprising:	8:58-9:3; <i>also</i> Fig. 2 '588- NOA, 10	¶¶[0061], [0203], [0366] Pet., 22
[1b]: a set of one or more processors; and a non-volatile storage containing an application for causing the set of one or more processors to perform the steps of:	<i>See</i> [1a] <i>supra</i>	¶¶[116]- [118]; Fig. 4 Pet., 23-24
[1c]: obtaining a top level index file identifying a plurality of alternative streams of protected video,	5:45-55 '588- NOA, 10	¶¶[63],[121] ,[219],[223] ,[225]-253]; Fig. 5 Pet., 26-28
[1d]: wherein each of the alternative streams of protected video includes partially encrypted video frames		
[1e]: that are encrypted using a set of common keys comprising at least one key,		

Limitation	Braness	Chen
[1f]: and wherein the partially encrypted video frames contain encrypted portions and unencrypted portions of data;		
[1g]: obtaining a copy of the set of common keys;		
[1h]: detecting streaming conditions for the playback device;	1:29-33 <i>See</i> '588-NOA, 10	¶¶[63]-[65], [81], [121] Pet., 39-40
[1i]: selecting a stream from the plurality of alternative streams of protected video based on the detected streaming conditions;	9:27-41 '588 NOA, 10	¶¶[63]-[65], [80]-[81]; Fig. 5 Pet., 40-41
[1j]: receiving a container index that provides byte ranges for portions of the selected stream of protected video within an associated container file;	1:45-50, 1:59-61, 2:5-7, 16:43-47 '588 NOA, 10	¶¶[63]-[64], [72], [86], [111], [119]-[123], [129], [147]-[150], [158]-[189], [201],[222]; Figs. 5, 6, 9(a), 27 Pet., 42-47
[1k]: requesting portions of the selected stream of protected video based on the provided byte ranges;	1:45-50, 1:59-61, 2:5-7 '588 NOA, 10	¶¶[70], [71], [74], [83], [129],[147], [517], [529]-[530]; Fig. 5, 6, 27 Pet., 48-52
[1l]: locating encryption information that identifies encrypted portions of frames of video within the requested portions of the selected stream of protected video;	8:41-53 <i>See</i> '588 NOA, 10	
[1m]: decrypting each encrypted portion of the frames of video identified within the located encryption information using the set of common keys; and	17:11-15 <i>See</i> '588 NOA, 10	

Limitation	Braness	Chen
[1n]: playing back the decrypted frames of video obtained from the requested portions of the selected stream of protected video.	8:41-53 '588 NOA, 10	¶¶[16]-[19], [61], [127] Pet., 57
[2a]: The playback device of claim 1, wherein the step of requesting portions of the selected stream further comprises the step of obtaining a container file containing protected video from at least one of the plurality of alternative streams,	See [1n] '588 NOA, 10	¶¶[63]-[64], [72] Pet., 58-59
[2b]: where the container file also includes encryption information that identifies portions of frames of video that are encrypted	See [1n] See '588 NOA, 10	
[2c]: a reference to at least one key from the set of common keys to utilize in accessing the encrypted portions of the frames of video.	See [1n] See '588 NOA, 10	
[3] The playback device of claim 1, wherein the located encryption information comprises a reference to the start of an encrypted block of data.		
[4] The playback device of claim 3, wherein the located encryption information further comprises the size of the encrypted block of data.		
[5] The playback device of claim 3, wherein the located encryption information further comprises cryptographic information that can be utilized to access the encrypted portion of the frame.	See [1n] See '588 NOA, 10	
[6] The playback device of claim 5, wherein the cryptographic information is a reference to at least one key from the set of common keys.		
[7a] ⁴ The playback device of claim 1, wherein the application is further for causing the set of processors to perform the steps of:		
[7b] detecting a change in the streaming conditions;	1:29-44 '588 NOA, 10	¶¶[63]-[65], [81],[121] Pet., 66

⁴ The Petition treats [7a] as not limiting. Pet., 66.

Limitation	Braness	Chen
[7c] identifying a second alternative stream of protected video based on the detected change;	<i>See</i> [7b]	¶¶[63]-[65] Pet., 67
[7d] receiving a container index that provides byte ranges for portions of the second alternative stream of protected video within a second associated container file; requesting portions of the second alternative stream of protected video based on the provided byte ranges;	<i>See</i> [1j]-[1k] <i>supra</i> '588 NOA, 10	<i>See</i> [1j]-[1k] <i>supra</i> Pet., 67-68
[7e] decrypting each encrypted portion of the frames of video from the requested portions of the second alternative stream of protected video using the set of common keys; and	17:11-15 <i>See</i> '588 NOA, 10	
[7f] playing back the decrypted frames of video from the requested portions of the second alternative stream of protected video.	<i>See</i> [1n] '588 NOA, 10	<i>See</i> [1n] Pet., 68
[8] The playback device of claim 1, wherein the application is further for causing the set of processors to perform the steps of: transmitting a request for content to a set of one or more content distribution servers; and receiving the content from the set of one or more content distribution servers.	6:30-33 '588 NOA, 10	¶¶[18], [23]-[24], [63], [72], [79], [452] Pet., 69-71
[9] The playback device of claim 8, wherein the application is further for causing the set of processors to perform the steps of: transmitting a request for cryptographic information including the set of common keys to a set of one or more DRM servers; and receiving the cryptographic information from the set of one or more DRM servers.	17:10-15, 17:41-44, 17:51-53, 18:63- 19:4 <i>See</i> '588 NOA, 10	
[10] The playback device of claim 1, wherein the application is further for causing the set of processors to perform the step of obtaining the container index from at least one file selected from the group consisting of: the associated container file containing the selected stream of protected content; and a separate file to the associated container file containing the selected stream of protected content.	1:59-61, 2:5-7, 16:43-47 <i>See</i> '588 NOA, 10	¶¶[0120], [0123] Pet., 73-74

Limitation	Braness	Chen
[11] The playback device of claim 1, wherein the common set of keys comprises a plurality of keys.		
[12] ⁵ ...using a decoder...	13:17-22, 19:19- 26 <i>See</i> '588 NOA, 10	¶[0106] Pet., 78
[23] The playback device of claim 1, wherein: the container index is part of a hierarchical index; and the application is further for causing the set of processors to perform the step of: obtaining a lower layer index that identifies the location of frames within a specific requested portion of the selected stream of protected video; and identify partially encrypted video frames from within the specific requested portion of the selected stream using the lower layer index.	1:59-61, 2:5-7, 16:43-47 '588 NOA, 10	¶¶[0148], [0164], [0197]; Fig. 7(b) Pet., 80-82
[24]	<i>See</i> [23]	<i>See</i> [23]

Gray shading means petitioned references are not asserted to disclose limitations.

- b. *Lindahl* and *Hurst* are cumulative of a reference that the Examiner has identified as “the second closest prior art.”

As for Petitioner’s secondary references, *Lindahl* and *Hurst*, they too are thoroughly cumulative of art previously presented and considered. Indeed, both *Lindahl* and *Hurst* are cumulative of another one of the most prominent art references to appear in the prosecution of this disclosure, which is far closer to the claims than *Lindahl* and *Hurst*, either separately or in combination.

⁵ The Petition asserts that claim 12 recites the same limitations as claim 1 except for “using a decoder.” Pet., 78.

Since the onset of Examiner Getachew's prosecution, one of the most prominently featured and most discussed art references has been Amini (U.S. Pat. App. 6,005,621). Amini appeared and was discussed for nearly thirty pages in Examiner Getachew's first substantive office action on November 27, 2013, during the prosecution of the original nonprovisional application based on the Patent's invention disclosure. Ex. 1004, 937-964. In response, the Applicant submitted a detailed discussion of Amini and explained that, *inter alia*,

The Amini publication describes three methods to overcome its stated problem, "Method 1: Each Stream has a Different Key," "Method 2: Each Stream Uses the Same Key," and "Method 3: One Stream may not have Index Gaps" (Amini publication, pages 4 and 5).

Ex. 1004, 915 (5/27/14 Response). *Lindahl* and *Hurst* add nothing material to Amini's teachings relating to keys, which, as will be seen, often greatly exceeds their own teachings on the subject.

That was hardly the end of the Office's years of consideration of Amini in relation to highly relevant limitations. Amini was considered in depth in PCT search reports appearing throughout the prosecution, which found, *inter alia*, that "Amini discloses a method of encoding source content as a plurality of protected streams using common cryptographic information" where the "same key is used for different streams," which the international examiner matched to the claimed "common cryptographic information." Ex. 1004, 107-129 (7/8/2013 PCT search report); *id.*,

110. In prosecution of the first continuation application in the chain, Amini was still the lead reference on which Examiner Getachew based his rejections. Ex. 2003 [003 CON FH], 106 (Response to 4/17/15 OA), 120-146 (4/17/15 OA). In prosecuting the third continuation (just before this one), Examiner Getachew turned to Amini again, and pronounced it “the second closest prior art” to the claims in that case. Ex. 2007 [340 CON FH], 38 (12/18/18 NOA).

After all this prior discussion of Amini, Examiner Getachew did not expressly discuss Amini again in the next continuation application, from whence these particular claims issued. He did not need to. It suffices to say that he was well aware of Amini. To show art or arguments were previously presented, one need not show a rejection based on them, but simply that the Examiner was aware of them. *See, e.g., Juniper Networks v. Mobile Telecomm’s Techs.*, IPR2017-00642, Paper 31, 13-16 (PTAB Mar. 14, 2018) (affirming denial under § 325(d), finding that “the Examiner was aware of the contents of [the reference] in material respects”); *Universal Imaging Indus. v. Lexmark Int’l*, IPR2019-01387, Paper 7, 15-16 (PTAB Feb. 27, 2020) (denying under § 325(d) where it was “reasonable to assume that the Examiner considered the substance of [art] when examining the...patent, despite the lack of an express claim rejection”); *cf. Regeneron Pharms. v. Kymab*, IPR2019-01580, Paper 9, 16-17 (PTAB Mar. 18, 2020) (“The fact that the Examiner in the [prior proceeding] cite[d] [the art] merely as further support for the teachings in [a

different reference] does not help Petitioner’s argument that [the art] is not cumulative. If anything, it tends to show that the opposite is true.”).

For the limitations on which the Petition relies on *Lindahl* and *Hurst*, Amini is at least as close, and generally closer, to the claims than *Lindahl* and *Hurst*, separately or in combination. This cumulative nature of *Lindahl* and *Hurst* in view of Amini (Ex. 2011) is tabulated below.

Limitation	Amini	<i>Lindahl</i>	<i>Hurst</i>
[1a]: A playback device for playing protected content from a plurality of alternative streams, comprising:	¶[0031] 11/27/13 OA, 4	¶[0011] Pet., 22	1:15-19, 6:13-17, 8:47-49 Pet., 26-28
[1b]: a set of one or more processors; and a non-volatile storage containing an application for causing the set of one or more processors to perform the steps of:	¶[0069] 11/27/13 OA, 4	¶[0088], Fig. 11 Pet., 24-25	4:64-65, 5:26-39 Pet., 25
[1c]: obtaining a top level index file identifying a plurality of alternative streams of protected video,	¶¶[0031], [0041] 11/27/13 OA, 4		
[1d]: wherein each of the alternative streams of protected video includes partially encrypted video frames	¶¶[0040]- [0041], [0060] 11/27/13 OA, 8	¶¶[55]- [56], [60], Fig. 5A-C Pet., 29-30	
[1e]: that are encrypted using a set of common keys comprising at least one key,	¶¶[0054], [0063], [0060], [0005]; <i>also</i> ¶¶ [0040], [0047] 11/27/13 OA, 4	¶¶[0048], [0064]- [0066] Pet., 30-32	Abstr., 1:6- 10, 6:32-48, :49-62, 7:9- 20, 8:16-18, 16:61-17:58, 18:40-19:14; Figs. 2b, 3a- b, 10 Pet., 32-25

Limitation	Amini	Lindahl	Hurst
[1f]: and wherein the partially encrypted video frames contain encrypted portions and unencrypted portions of data;	¶¶[0040]-[0041], [0047] <i>see</i> 11/27/13 OA, 8	¶¶[55]-[56], [60]-[61], Figs. 5C, 6A-B Pet., 36-37	
[1g]: obtaining a copy of the set of common keys;	¶¶[0005], [0040]-[0041], [0047] <i>see</i> 11/27/13 OA, 4	¶¶[08], [49], [60], [66], [69], [70], [79]; Pet., 38-39	18:53-55 Pet., 38
[1h]: detecting streaming conditions for the playback device; [1i]: selecting a stream from the plurality of alternative streams of protected video based on the detected streaming conditions; [1j]: receiving a container index that provides byte ranges for portions of the selected stream of protected video within an associated container file;	¶[0031] 11/27/13 OA, 11.		
[1k]: requesting portions of the selected stream of protected video based on the provided byte ranges;	¶¶[0031], [0041], [0047] 11/27/13 OA, 7		14:6-11, 15:10-14
[1l]: locating encryption information that identifies encrypted portions of frames of video within the requested portions of the selected stream of protected video;	<i>See</i> [1g] <i>supra</i> (especially ¶¶[0040]-[0041])	¶¶[0056]-[0061], [0072]; Fig. 6A-B Pet., 52-55	
[1m]: decrypting each encrypted portion of the frames of video identified within the located encryption information using the set of common keys; and	<i>See</i> [1g] <i>supra</i>	¶¶[0056]-[61], [66], [70], [72]; Fig. 6A-B Pet., 55-56	
[1n]: playing back the decrypted frames of video obtained from the	¶¶[0040]-[0041] 11/27/13 OA, 4	¶¶[0005], [0011] Pet., 57	1:15-19, 6:14-22 Pet., 57

Limitation	Amini	Lindhahl	Hurst
requested portions of the selected stream of protected video.			
[2a]:...obtaining a container file containing protected video from at least one of the plurality of alternative streams,	¶¶[0031], [0041], [0060] 11/27/13 OA, 7		
[2b]: where the container file also includes encryption information that identifies portions of frames of video that are encrypted, and	¶¶[0040]- [0041], [0060] 11/27/13 OA, 8	¶[0053] Pet., 59– 60	
[2c]: a reference to at least one key from the set of common keys to utilize in accessing the encrypted portions of the frames of video.	<i>See [1e] supra</i>	¶¶[0072], [0083] Pet., 60-62	
[3]...the located encryption information comprises a reference to the start of an encrypted block of data.	¶¶[0040], [0047] 11/27/13 OA, 8	¶¶[57]- [59]; Fig. 6A-B Pet., 62-63	
[4]...located encryption information further comprises the size of the encrypted block of data.	<i>See [3] supra</i> 11/27/13 OA, 8	¶[0057]; Fig. 6A-B Pet., 64	
[5] The playback device of claim 3, wherein the located encryption information further comprises cryptographic information that can be utilized to access the encrypted portion of the frame.	¶¶[0040]- [0041], [0060] 11/27/13 PA, 8	Pet., 64- 65, refers to [2b], [2c] <i>supra</i>	
[6] The playback device of claim 5, wherein the cryptographic information is a reference to at least one key from the set of common keys.	¶¶[0053], [0063]; <i>also</i> [0005], [0060] 11/27/13 OA, 11	Pet., 65, refers to [2c] <i>supra</i>	
[7a] ⁴			
[7b] detecting a change in the streaming conditions;	¶[0031]		
[7c] identifying a second alternative stream of protected	¶[0031] 11/27/13 OA, 11		

Limitation	Amini	<i>Lindahl</i>	<i>Hurst</i>
video based on the detected change;			
[7d] receiving a container index that provides byte ranges for portions of the second alternative stream of protected video within a second associated container file; requesting portions of the second alternative stream of protected video based on the provided byte ranges;	¶¶[0031], [0041], [0047] 11/27/13 OA, 7	Pet., 67-68, refers to [1j]-[1k] <i>supra</i>	14:6-11, 15:10-14 Pet., 67-68
[7e] decrypting each encrypted portion of the frames of video from the requested portions of the second alternative stream of protected video using the set of common keys; and	¶¶[0040]-[0041], [0054], [0060] 11/27/13 OA, 4		
[7f] playing back the decrypted frames of video from the requested portions of the second alternative stream of protected video.	¶¶[0031], [0040]-[0041] 11/27/13 OA, 4	Pet., 68, refers to [1n] <i>supra</i>	1:15-19, 6:14-22
[8] The playback device of claim 1, wherein the application is further for causing the set of processors to perform the steps of: transmitting a request for content to a set of one or more content distribution servers; and receiving the content from the set of one or more content distribution servers.	¶¶[0008], [0036] 1/10/2019 OA, 4-5		6:17-22, 8:53-57
[9] The playback device of claim 8, wherein the application is further for causing the set of processors to perform the steps of: transmitting a request for cryptographic information including the set of common keys to a set of one or more DRM servers; and receiving the cryptographic information from	¶¶[0005], [0053], [0063] 11/27/13 OA, 8, 11	¶¶[0039], [0044], [0062]-[0066] Pet., 72-73	18:51-55, 19:5-8

Limitation	Amini	Lindahl	Hurst
the set of one or more DRM servers.			
[10]			
[11] The playback device of claim 1, wherein the common set of keys comprises a plurality of keys.	¶¶[0005], [0048], [0053] 11/27/13 OA, 11	¶¶[54], [57]-[59], [72] Pet., 74-76	18:62-67 (<i>see also</i> 18:62-19:2) Pet., 76
[12] ⁵ ...using a decoder...	¶¶[0005], [0031] 11/27/13 OA, 4	¶[0091] Pet., 78	8:19-25, 16:3-5 Pet., 78
Claims 13-22	<i>See</i> claims 2-11 <i>supra</i>	<i>See</i> claims 2-11 <i>supra</i> Pet., 79	
[23], [24]			

c. *Chen*, The Petition's Primary Reference, Was Considered By The Examiner During Prosecution Of These Claims.

Not only is the Petition's primary reference, *Chen*, cumulative of Branness, the central reference in the prosecution history of these claims, but *Chen* itself was presented and considered by the Examiner while these claims were before him.

Examiner Getachew has conscientiously carried out his duties. The face page and following pages of the '588 Patent and its ancestors attest to his extensive consideration of art presented on IDS's during prosecution. Ex. 1001 ['588 Patent]. Petitioner concedes that for this patent, that art included *Chen*. Pet., 12.

As noted above, Examiner Getachew expressly stated that he considered and found compliant the references submitted in the November 19, 2018 IDSs in this Track One prosecution, and reviewed and initialed them over the course of multiple days. *Supra* § II.A.1. Among those references was *Chen*. *Id.*, Ex. 1002, 618.

In view of all of the above, since the three references of the Petition are the same or substantially the same as art already of record and considered, part one of the *Advanced Bionics* framework is satisfied.

B. Petitioner has not demonstrated that the Office erred in a manner material to patentability.

In cases where the first part of the *Advanced Bionics* framework has been satisfied, “the Board’s decisions generally have required a showing that the Office erred in evaluating the art.” *Advanced Bionics*, 8 & n.9. Here, for example, Petitioner was free to argue that Examiner Getachew “misapprehend[ed] or overlook[ed] specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims,” or committed “an error of law, such as misconstruing a claim term, where the construction impacts patentability of the challenged claims.” *Id.*, 8 n.9. Or Petitioner was free to attempt to show that this exhaustive prosecution was “not...exhaustive,” or had “clear errors,” or that the relevant prior art “was only cursorily considered,” or that there should be “changed claim constructions.” *Kayak Software Corp. v. IBM Corp.*, CBM2016-00075, Paper 16, 11 (PTAB Dec. 15, 2016) (informative). As in those cases, “Petitioner, however, has not articulated such circumstances in this case.” *Id.*, 11. The analysis of this part of the *Advanced Bionics* framework in this case is, therefore, trivial. Petitioner has offered *no* argument that the Examiner erred in the prior examination of this subject matter. Because “Petitioner fails to present *any* argument the Examiner’s

prior consideration of” the substantially similar art of record “or to provide a compelling reason why [the Board] should readjudicate substantially the same prior art and arguments as those presented during prosecution and considered by the Examiner,” it “would not be an efficient use of Board resources” to institute review in this case. *Unified Patents Inc. v. Berman*, IPR2016-01571, Paper 10, 12 (PTAB Dec. 14, 2016) (informative). Under *Advanced Bionics* and the Board’s other § 325(d) precedents, institution should be denied.

Even if discretionary denial were not appropriate, the Petition would fail to meet the substantive threshold for institution, as shown in the following sections.

III. THE PETITION FAILS TO SHOW THAT *CHEN* IN VIEW OF *LINDAHL* AND *HURST* RENDER OBVIOUS “LOCATING ENCRYPTION INFORMATION...WITHIN THE REQUESTED PORTIONS OF THE SELECTED STREAM OF PROTECTED VIDEO” (ALL CLAIMS).

The challenged independent claims, Claims 1 and 12, each require, *inter alia*, “requesting portions of the selected stream of protected video” and “*locating encryption information* that identifies encrypted portions of frames of video *within the requested portions of the selected stream of protected video.*” Patent, 27:52-27:57 (cl. 1), 29:13-29:17 (cl. 12). All other claims depend from either claim 1 or claim 12. Therefore, if the proposed combination of *Chen* in view of *Lindahl* and

Hurst fails to render this limitation of every claim obvious, then the sole Ground of the Petition fails.⁶ It fails.

The Petition relies solely on *Lindahl* for the disclosure of the “locating” step. Pet., 52-55. However, to the extent *Lindahl* does locate any encryption information, it does not locate the information “within the requested portions of the selected stream of protected video,” as the claims require. In fact, *Lindahl* cannot teach this limitation, because it does not relate to a system in which content is partially streamed for playback. Instead, *Lindahl* teaches a system where media files are downloaded in their entirety, **not** requested or downloaded only partially. The concept of storing encryption information in requested portions of media content does not exist within *Lindahl*’s system because there is no requested partial media content in it in the first place. Notably, the Petition does not even argue otherwise. Pet., 54-55. Thus, the size variables in *Lindahl* on which Petitioner relies are simply

⁶ The Petition takes the position that “Claim 12 recites the same limitations as claim 1 except for ‘using a decoder’ and is obvious for the same reasons” as claim 1. Pet., 78-79. Because this Response need not address “using a decoder,” it treats claims 1 and 12 as materially identical for purposes of the decision whether to institute. Moreover, this Response’s discussion of the Petition’s deficiencies with respect to claim 1 applies equally to claim 12 and all other claims.

not located within requested portions of selected streams of video, because there are no streams of video, selected streams of video, portions of selected streams of video, or requested portions of selected streams of video in *Lindahl*.

The Petition therefore fails to meet its burden to show that the “*locating encryption information...within the requested portions of the selected stream of protected video*” limitation is met at the institution stage.

A. The Invention Improves Partial Encryption Of Requested Portions Of Video Streams By Including Information Identifying The Encrypted Portions Of Frames Of Video Within The Requested Video Stream Portions Themselves.

The '588 Patent discloses and claims systems and methods to perform “adaptive bitrate streaming using alternative streams of protected content.” *Patent*, 2:67-3:1. When streaming media is continuously sent to the playback device for adaptive streaming playback, it is important to prevent disruption of that playback, and for the playback device to be able to efficiently and effectively switch between different bitrate streams of the protected content depending on the current conditions of the network. *Id.*, 1:45-1:67. The claimed inventions accomplish this goal in novel ways. For example, an aspect of the claimed inventions for adaptive bitrate streaming disclosed by the Patent involves “Digital Rights Management (DRM),” a term “utilized to describe access control technologies that are used to control access to and/or copying of digital content.” *Id.*, 2:47-2:49. As discussed further below, one of the features of the Patent’s digital rights management (DRM), *id.*, 2:47-2:49,

is that the encryption information, which is utilized to access the encrypted portion of requested content, is included “within the requested portions of the selected stream of protected video.” *Id.*, 16:21-52; 27:54-27:57 (claim 1); 29:15-29:17 (claim 12).

In an exemplary embodiment, the invention’s playback device can locate encryption information within the requested Cluster element that contains encrypted video, and use that information to decrypt the Cluster element before playing back the video. For example, the Patent discloses that in one of its many embodiments,

[w]hen the Cluster elements are received, the playback device can extract encoded media from the ***BlockGroup elements within the Cluster element***, and can decode and playback the media within the BlockGroup elements in accordance with their associated Time coded attributes. Prior to decoding the encoded media, the playback device can check for the ***presence of a DRMInfo element within each BlockGroup*** of a video stream to identify whether the encoded media is protected. The playback device can ***use the information within the DRMInfo element to decrypt encrypted portions of the video*** prior to decoding.

’588 Patent, 25:10-21; *see also id.*, 16:21-39.⁷

The Patent discloses detailed ways that this inclusion of encryption information identifying encrypted portions of frames of video within the requested

⁷ All emphasis herein is added unless otherwise noted.

portions of the selected stream of protected video can be accomplished. For example, in an embodiment referenced above, the Patent discloses that the ability to include the encryption information within the requested Cluster may be achieved through, for example, the use of a “specialized” novel file format:

In several embodiments, the Matroska container file is *further specialized in that additional [Digital Rights Management] elements (i.e., elements that are not specified as part of the Matroska container format) can be included within the file to facilitate the distribution of protected media during adaptive bitrate streaming.* In a number of embodiments, common cryptographic information is included within a DRM header element in each of the Matroska container files and references to the common cryptographic information are made using DRMInfo elements *within a BlockGroup element corresponding to a specific frame of encrypted video.*

Id., 9:18-29.

Reflecting this disclosure in the written description, claim 1 recites that “encryption information that identifies encrypted portions of frames of video” must be “located...within the requested portions of the selected stream of protected video.” *Lindahl*, the sole reference relied upon by the Petition for this limitation, does not disclose that any encryption information is located “within the requested portions of the selected stream of protected video,” as discussed below in Section III.B.

B. *Lindahl*, The Reference Relied Upon For This Limitation, Does Not Teach Locating Encryption Information Within Requested Portions Of The Selected Stream As Claimed.

The Petition argues that *Lindahl*'s variables X, Y, and Z teach the claimed "encryption information." Pet., 54. But, even if variables X, Y, and Z were such "encryption information," there is no possibility of *Lindahl* teaching locating said information "within the requested portions of the selected stream of protected video" as claimed. *Lindahl* does not concern a streaming system where files can be requested in portions. *Lindahl* concerns a system that downloads entire media files for later playback by the user. *Lindahl*, ¶¶ 40, 64-66. In *Lindahl*'s system, the user never requests—and so far as *Lindahl* teaches, **cannot** request—partial media files for purchase or download; so *Lindahl* cannot disclose encryption information located "within the requested portions of the selected stream of protected video" as claimed, for the concept of where to store encryption information for protected content that can be partially requested through streaming is not found in *Lindahl*. Nor does Petitioner even attempt to suggest any reason why the POSITA would modify *Lindahl* to disclose the claims—or how there could have been a reasonable expectation of success in making this change in *Lindahl* (let alone in *Lindahl* somehow integrated into the streaming system of *Chen*), since *Lindahl* only teaches how to deliver this information in a separate file, and does not explain how it could be delivered in combination with media during streaming playback.

These points are discussed below.

1. *The Petition Merely Argues That Lindahl's "Encryption Information" Is "Retrieved" From An Undisclosed Location.*

Lindahl teaches decryption of video once the entire video has been downloaded. *Lindahl*, ¶ 66 (“Once the media file is downloaded 708, the media file can then be decrypted 710 at the user’s local machine using the cryptographic key.”). These teachings have nothing to do with including encryption information identifying encrypted portions of that video—let alone portions of frames of the video—within requested portions of that video. The Petition simply disregards the claim language of “locating...within the requested portions of the selected stream of protected video” and does not even offer a theory that there was an obvious mechanism for storing such data in *Lindahl* so that it could be found afterward during streaming when needed.

The Petition argues merely that *Lindahl* “retrieve[s]” its X-Y-Z variables (the putative “encryption information”), but does not point to any disclosure of them at any location, or any disclosure of from whence they are “retrieved”:

Lindahl teaches that the encryption parameters are “retrieved” to decrypt the media. *See* Ex. 1007, ¶[0072] (“After a media file to be decrypted has been identified 902, encryption parameters associated with the media file are retrieved 904....”); Ex. 1003, ¶187. It would have been obvious to retrieve the encryption parameters to identify the

encrypted portions of the content so that they may be decrypted efficiently. *Id.*

Pet., 54-55. Thus, the Petition simply equates “retriev[ing]” with “locating...within the requested portion of the selected stream of protected video.” In the context of the ’588 Patent, however, “retrieving” is presumptively distinct from “locating” as claimed. The specification of the Patent uses the word “retrieving,” but it never uses it as synonymous with “locating...within the requested portion of the selected stream of protected video” disclosed and claimed. *See, e.g., ’588 Patent*, 25:26-28 (“In other embodiments, the playback device continuously **retrieves** index information as media is played back.”); 26:32 (“...Cluster element **retrieved** by the playback device.”); 24:58-60 (“In many embodiments, the playback device does not **retrieve** the headers for all of the Matroska container files indexed in the top level index file.”). Similarly, while Claim 1 does not recite the word “retrieving,” it does utilize the similar words “obtaining” and “receiving.” *Id.*, cl. 1 (“obtaining a copy of the set of common keys,” and “receiving a container index.”). Yet, although the Patent elsewhere utilizes the term “retrieve” (and “obtaining” and “receiving”), it does not use that word in Claim 1 for this limitation. Instead, it recites that the playback device must “locat[e] encryption information...within the requested portions of the selected stream of protected video.” *Id.* The fact that the Patent uses the term “retrieve” elsewhere, but not for this limitation, counsels against equating this

disclosure of “retriev[ing]” in *Lindahl* with “locating...within the requested portions of the selected video.” *Cf. Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) (“Our precedent instructs that different claim terms are presumed to have different meanings.... If Brocar had intended to use these terms to describe the platform top surface, it should have.”).

In sum, Petitioner offers no reason why disclosure of “retrieve” in *Lindahl* discloses the claimed “locating...within the requested portions of the selected video.” And it does not, as discussed below.

2. *Lindahl Is Not Shown To Teach From Where It “Retrieve[s]” Its Encryption Parameters.*

Lindahl’s sole description that “[a]fter a media file to be decrypted has been identified, encryption parameters associated with the media file are retrieved,” *Lindahl*, ¶ 72 (feature number omitted), does not teach or render obvious the claimed “locating” limitation. *Lindahl* contains no teachings as to where the encryption parameters are retrieved from. Nor does Petitioner seriously allege it contains such a teaching.

As noted above, Petitioner relies on *Lindahl*’s retrieval of variables X, Y and Z as allegedly teaching the claimed “encryption information” that the claim requires be “locat[ed]...within the requested portions of the selected stream of protected video.” Pet., 54. *Lindahl* teaches that its variables X, Y, and Z identify the size(s) of the encrypted and unencrypted portions of the block within the video frame.

Lindahl, ¶ 57 (cited by Pet., 54). However, *Lindahl* nowhere teaches where variables X, Y and Z are, or even could be, stored “within the requested portions of the selected stream of protected video” as claimed. *Lindahl*, ¶¶ 57, 72.

Even generously assuming that *Lindahl*’s use of the word “retrieve” actually means that variables X, Y and Z are already specifically stored somewhere, the Petition does not point to any teaching whatsoever in *Lindahl* about *where* they are stored. In other words, even if *Lindahl* were “locating” this information, it is locating it from an undisclosed location. *Lindahl* simply does not have any teachings of where encryption parameters used for decryption would, or could, be stored. It offers no teachings to the PHOSITA on the matter. It is silent.

This silence is unsurprising. *Lindahl* does not address the question of where to store encryption information for content that can be partially requested and received in a streaming system, because *Lindahl*’s media files are always downloaded in their entirety for later playback. That is unlike the claimed invention, which requires that the encryption information be located “within the requested portions of the selected stream of protected video,” just like claim 1 says, and explains at length how this can be accomplished, such as through the use of “specialized” files within the portions of the selected stream. *Patent*, 9:18-29.

Petitioner cannot show that this critical limitation is obvious by simply pointing to a black hole in the art where it is supposed to be.

3. *Lindahl Is Not Even Shown To Store Its Encryption Parameters Before “Retriev[ing]” Them.*

Although it should be unnecessary to reach the issue, it is noted that given the absence of any teachings in *Lindahl* where its alleged “encryption information” is located, *see supra* § II.B.2, *Lindahl* and the Petition are even further afield from the invention than their silence on this limitation already suggests. The Petition fails to even show that, when *Lindahl* “retrieve[s]” its encryption parameters (the putative claimed “encryption information”), it is retrieving their values from some stored location, rather than simply regenerating them from analysis of the stored video’s characteristics. In other words, the Petition fails to show what *Lindahl* even means by “retrieve,” let alone that it inherently means accessing stored parameter values.

It is well-known that the “retrieval” of information can have many meanings. *See* Ex. 2010 [Manning *et al.*, INTRODUCTION TO INFORMATION RETRIEVAL (2008)]

1. It most certainly need not refer to “retrieval” of a value stored in advance. One textbook example—literally—of “retriev[ing]” information is, simply, “to read through” the collected works of William Shakespeare “to determine which plays of Shakespeare contain the words Brutus AND Caesar AND NOT Calpurnia.” *Id.*, 3. Thus, when *Lindahl* teaches that it “retrieve[s]” its encryption parameters, it does not necessarily even teach that its “retrieved” parameters are stored somewhere before being retrieved. For all that the Petition shows, *Lindahl* simply analyzes the

stored video to determine what these parameters are when it needs to know what they are.

The Petition does not point to any teaching that *Lindahl* needed to store this information in advance. And this is unsurprising. Unlike the claimed invention, which involves adaptive streaming of video upon request and requires specifically including additional information in stored media (such as identifiers associated with a container index) that identifies encrypted portions of frames of video within the requested portions of the selected stream of protected video, '588 *Patent*, 9:18-29, 16:21-39, 25:10-21, 27:54-57, *Lindahl* simply discloses downloading entire video files to be played back later at leisure. *Lindahl*, ¶¶ 63-66; 69-70.

This limitation is therefore missing. And The Petition also fails to show why *Lindahl* should be modified or why it would otherwise be obvious to add this missing limitation, as discussed next.

C. Petitioner Offers No Basis To Add This Missing Limitation.

The Petition fails to assert that *Lindahl* somehow inherently discloses locating variables X, Y and Z “within the requested portions of the selected stream of protected video” as claimed, and also never provides a cognizable argument that it would be obvious to add it. To be sure, the Petition asserts that “[i]t **would have been obvious to** retrieve the encryption parameters to identify the encrypted portions of the content....” Pet., 55. But for that to, *arguendo*, have been obvious, *id.*, there

would need to be some reason or motivation for the POSITA to modify *Lindahl* to add it. The Petition offers no argument that there was any motivation to add this limitation, except the conclusory assertion that “[i]t would have be obvious to” add it “so that [the encrypted portions of the content] may be decrypted efficiently.” *Id.*

The Petition points to nothing supporting this statement except the teachings of *Lindahl* itself and an unexplained citation to one paragraph of its accompanying opinion declaration. Pet., 55 (citing *Lindahl*, ¶ [0072] and Ex. 1003 [declaration of McDaniel] ¶ 187). A mere citation without any explanation to the very paragraph of *Lindahl* that discusses the “retriev[ing]” cannot be sufficient to support modifying *Lindahl* to add this missing limitation. *See, e.g., Microsoft Corp. v. IpLearn-Focus LLC*, IPR2015-00095, Paper 33, 29 (PTAB Apr. 11, 2016) (rejecting obviousness argument because “Petitioner has not presented an analysis sufficient to support modifying [the single reference] beyond the teachings of [the reference] itself.”); *see also Hulu LLC v. Sound View Innovations LLC*, IPR2018-00582, Paper 34 at 20-21 (PTAB Aug. 5, 2019) (informative) (rejecting Petitioner’s proposed combination because Petitioner had not “adequately supported” why it would have been “good idea” to modify references as proposed).

And since the Petition contains no explanation of what is said in this paragraph of Dr. McDaniel’s declaration, these arguments, whatever they are, cannot form a basis for institution. *See, e.g., Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-

00454, Paper 12, 9-10 (PTAB Aug. 29, 2014) (informative) (“we will not consider arguments that are not made in the Petition, but instead are incorporated by reference to the cited paragraphs...of [an expert] Declaration” “to support conclusory statements that are not otherwise supported in the Petition”).

For all these reasons, the Petition fails to meet its burden to show a likelihood of success in showing its Ground meets the claimed “locating” step.

IV. THE PETITION FAILS TO SHOW THAT *CHEN* IN VIEW OF *LINDAHL* AND *HURST* RENDERS OBVIOUS VIDEO FRAMES IN ALTERNATIVE STREAMS “THAT ARE ENCRYPTED USING A SET OF COMMON KEYS” (ALL CLAIMS).

The Petition’s sole Ground fails to meet the minimum threshold for institution for another reason. Each challenged independent claim, and therefore each claim of the Patent, requires, *inter alia*, that video frames of the alternative streams of the protected content be “encrypted using a set of common keys comprising at least one key.” ’588 Patent, cls. 1, 12. *Chen* in view of *Lindahl* and *Hurst* fails to render this limitation obvious too.

One of the features of this DRM in the disclosed and claimed invention is that the alternative streams of a given protected content utilize “a set of common keys.” *Id.*, 24:51-24:57; 27:40 (claim 1); 29:1 (claim 12). With this feature, “the engine utilized to decrypt the content on the client...does not require reconfiguration using different cryptographic information with each stream switch.” *Id.* The Petition relies only on its secondary references for the limitation requiring “a set of common

keys,” arguing that “*Lindahl* and *Hurst* both teach or suggests [*sic*] this limitation, and either is sufficient by itself to render the limitation obvious.” Pet., 30-35.

The Petition is incorrect. *Lindahl* does not address the question of encrypting alternative streams with “a set of common keys.” In fact, its system does not relate to, or disclose an embodiment with, alternative streams. See § III.A, *infra*. At most, *Lindahl* discloses that comparatively unimportant meta data within a file, ***not*** streams of video frames, can be encrypted using a global key. *Id.* As for *Hurst*, it discloses the possibility of using a common key, but solely in a single brief paragraph on key encryption, and does so solely as a point of contrast to explain why to use a different approach. Thus, to the meager extent *Hurst* discusses using common keys at all, it leads the PHOSITA in the opposite direction from using a set of common keys, because it only touts the benefits of ***not*** doing so. *Infra* § III.B. Even if, *arguendo*, *Lindahl* and *Hurst* did suggest the use of “a set of common keys” to encrypt video frames in alternative streams, the Petition fails to present any motivation to combine *Lindahl* and *Hurst* with *Chen* based on “objective teachings in the prior art or knowledge generally available to one of ordinary skill in the art” as required. *Celltrion, Inc. v. Biogen, Inc.*, IPR2016-01614, Paper 65 at 22-23 (PTAB Feb. 21, 2018). Rather, the Petition’s only discernible motivations to combine merely restate disclosures in ***the Patent’s own specification*** on why it is beneficial to utilize a set of common keys. See § III.C, *infra*. As Board and Federal

Circuit decisions uniformly hold, using the Patent itself as the roadmap for arriving at the patented claims is “the essence of hindsight.” *Id.*

These points are discussed in further detail below.

A. *Lindahl* Does Not Encrypt “Video Frames” Of Alternative Streams Using “A Set Of Common Keys.”

The Petition first seeks to rely on *Lindahl* for the disclosure of encrypting video frames in alternative streams of content using “a set of common keys.” Pet., 31-32. However, *Lindahl* does not address the situation of encrypting video frames in a plurality of alternative streams of content, whether using the same key or different keys. To the extent that *Lindahl* does provide any relevant disclosure, it teaches *against* utilizing a set of common keys for different media files.

Lindahl utilizes a system that downloads media files onto the user device, which can then access the content at any time for playback. *Lindahl*, ¶¶ 40, 68. In one embodiment, *Lindahl* discloses that the user purchases and downloads a media files to its local device. *Id.*, ¶ 66. “Following the decryption/encryption 710 [of the downloaded media file], the encrypted media file is stored 712 to the local data storage.” *Id.* Because *Lindahl* addresses a system where files are downloaded, as opposed to adaptively streamed for playback, it has no occasion to address, and so does *not* address, any situation where alternative streams of the same video content are presented for selection by the user, as occurs in the streaming to which the ’588 Patent and this particular limitation is directed.

The '588 Patent discloses that the issue of adaptive bitrate streaming, where the user selects and switches between various alternative streams encoded at different bitrates, arises specifically in the context of adaptive streaming media, because of fluctuation in network conditions that affect user experience:

Adaptive bit rate streaming or adaptive streaming involves detecting the present streaming conditions (e.g., the user's network bandwidth and CPU capacity) ***in real time and adjusting the quality of the streamed media accordingly*** by selecting between different streams encoded for use at different network connection data rates. Typically, the source media is encoded at multiple bitrates and the playback device or client switches between streaming the different encodings depending on available resources.

'588 Patent, 1:59-67; accord, e.g., Hurst, 1:31-38 ("Alternatively [to streaming], media files may be downloaded and stored on persistent storage devices, such as hard drives or optical storage, for later presentation.... Media files prepared for downloading and storing usually are encoded with a higher quality audio/video than can be delivered in real time.").

Because *Lindahl* does not address adaptive media streaming, *Lindahl* has no occasion to teach anything connected with encryption of adaptive alternative streams

of the same content. Such alternative streams do not exist in *Lindahl*'s system.⁸ The Petition argues that *Lindahl* nevertheless teaches this limitation. Its arguments fall flat.

First, the Petition argues that “*Lindahl* teaches or suggests that media files may be encrypted...with a global key.” Pet., 31. However, *Lindahl* never discloses that media files may be encrypted with a global key. Rather, *Lindahl* only teaches,

⁸ *Lindahl*'s statement that “[t]he remote media source 106 can transmit or stream media files to the media server 102,” *Lindahl*, ¶ 39, does not alter this. That reference to “stream[ing]” is neither real-time nor adaptive streaming, in which media is continuously sent over the network and consumed by the user in real time, which is the kind of streaming of media that requires adaptive bitrates and, accordingly, alternative streams of the same video content. See *'588 Patent*, 1:45-49. *Lindahl* is simply using this term in the older sense of transmitting files to its server for storage and later download. *Lindahl*, ¶ 39 (“The media files that are received at the media server 102 from the media sources 104, 106 can be processed and then stored to a media storage 110.”). This section of *Lindahl* relates not to user consumption of content, but to the backend network where data is transferred from content producer to server for storage, and where there is no reason for adaptive streaming because a server is not an end-user consumer of content. See *id.*

at most, that metadata associated with a media file, but *not* the media data within the file, may be encrypted with a global key—and even then only for certain metadata that “is not that sensitive” so that “stronger encryption” is not needed:

The media file is construed such that it includes media data and may further include metadata. The metadata describes characteristics of the data. For example, metadata can indicate characteristics, such as name, artist, copyright information, title, etc. The metadata of the media file is optionally encrypted, such as with a global key. In one embodiment, *the global key is used to encrypt the metadata* for all the media files at the media server. In another embodiment, if desired, different global keys can be used with different media servers. Typically, the metadata is not that sensitive so the use of a common global key to encrypt such is adequate. However, *if stronger encryption is desired, then more specialized keys can be used to increase the level of security.*

Lindahl, ¶ 48. In short, *Lindahl* never suggests encrypting an entire file, and particularly never suggests encrypting the sensitive and valuable video data within a file, with a global key. Indeed, *Lindahl* discloses that while comparatively unimportant metadata may be encrypted with a “global key,” doing so is not appropriate if strong encryption is needed. *Id.*⁹

⁹ The Petition also cites to *Lindahl*’s alleged teaching of “symmetric encryption algorithms meaning the same key was used for encryption and

This distinction between using the common encryption key for the encryption of media data itself, as opposed to using a common key for just meta data associated with a file, is significant because the Claims do not require encryption of metadata. Rather, the claims expressly require encryption of video frames of the alternative streams using a set of common keys—just the sort of more sensitive content that *Lindahl* teaches needs “stronger encryption” than a global key. See ’588 Patent, cl. 1, 23:43-53; *Lindahl*, ¶ 48.

The Petition next argues that *Lindahl*’s disclosure of encrypting just metadata within a file with a global key renders it obvious to modify its teachings to instead encrypting the entirety of all media files and all alternative streams of media files with a global key, because supposedly the PHOSITA

would have been motivated to apply this teaching to encrypt all media files, including all alternative representations, using a global key to simplify key management particularly for content that is not

decryption,” but the concept of using the same key to *encrypt and decrypt the same data* has nothing to do with the claimed concept of using the same key to *encrypt and decrypt multiple alternative versions of the same content*. Pet., 31 (citing *Lindahl*, ¶ 8. And even if it did, which it does not, *Lindahl* still never discloses, or even suggests, encrypting sensitive data, or even ever encrypting the *any* file in its entirety, with a global key.

particularly sensitive. *Lindahl* teaches that when data “is not that sensitive...the use of a common global key to encrypt such is adequate.”

Pet., 31 (citations omitted). This statement is unsupported and wrong for many reasons. **First**, as discussed above, *Lindahl* does not teach that “data” in general can be encrypted with a global key when it is not sensitive; rather, *Lindahl* only teaches that “*metadata*” in a media file should ever be encrypted using a global key, and only in certain circumstances where it is “not that sensitive” metadata. *Lindahl*, ¶ 48. As discussed above, *Lindahl* never even suggests utilizing a global key to encrypt *media* data such as video frames. **Second**, even if *Lindahl* did suggest that an entire media file may be encrypted with a global key, which it does not, it still does not disclose that different alternative streams of the same media content should all be encrypted with a set of common keys. This is because, as also discussed above, *Lindahl*’s system is not an adaptive streaming media system and simply does not relate to encrypting different alternative streams. **Third**, even if it were conceivable that *Lindahl*’s teachings might be extendable to adaptive streaming of media to end-users, the Petition does not explain why, if media content were so unimportant that it would be consistent with *Lindahl*’s teachings to encrypt it using a single global key, the content producer or server would invest the substantial effort of encoding that very “not that sensitive” content with multiple alternative bitrates to create multiple alternative streams for it to be viewed by end-users, as opposed to simply

utilizing the lowest bitrate for low-priority free content. *Lindahl*, ¶ 48; compare Pet. 31; accord, e.g., *Hurst* 19:1-6 (“Encrypt[ing] each bitrate with a different set of encryption keys ... beneficially allows for a publisher to allow a ‘standard’ user to view the movie at a lower resolution while a ‘premium’ user is allowed to watch the movie at a higher resolution or bitrate”). Petitioner’s attempt to extend *Lindahl* beyond its disclosure of encrypting only “not that sensitive” metadata of stored files with a global key, to the encryption of entire multiple adaptive streams of media content from beginning to end with a global key, is supported by nothing but thin air.

Moreover, that expansion of *Lindahl*’s teachings would be particularly inappropriate for this critical limitation. The Petition concedes that using common frame encryption keys to encode alternative video streams goes to the heart of the claimed invention. See Pet., 11 (“According to PO, the ’558 patent is directed to using ‘common frame encryption keys to encode alternative video streams.’”) (internal citation omitted). Petitioner may not use the “common knowledge” of artisans as a “gap-filler” to simply add a claim limitation that is missing from an obviousness combination—especially where the missing limitation goes to the heart of the invention. *DSS Tech. Mgmt. v. Apple Inc.*, 885 F.3d 1367, 1374 (Fed. Cir. 2018); see also *infra* § IV.C.

For these reasons, *Lindahl* does not disclose or suggest encrypting video frames in the alternative streams of content using “a set of common keys.” And even if *Lindahl* did have such a disclosure, the Petition has not met its burden to show why the PHOSITA would combine this alleged suggestion from *Lindahl* in the system of *Chen* as proposed. *Infra* § III.C.¹⁰

B. *Hurst* Does Not Provide Motivation To Encrypt “Video Frames” Of Alternative Streams Using “A Set Of Common Keys.”

The Petition alternatively relies on *Hurst* for the disclosure of encrypting video frames in alternative streams of content using “a set of common keys.” Pet.,

¹⁰ Moreover, the Petition’s discussion of “Motivation to Combine,” Pet., 17-22, does not appear to allege any motivation to import any alleged use of global key from *Lindahl* to *Chen*. Rather, its alleged motivation appears to be exclusively based on importing the concept of common key from *Hurst* into *Chen*. See, e.g., Pet., 21 (“For example, a video streaming system would encode multiple representations of a video at different bitrates, as taught by *Chen*, with the representation partially encrypted as taught by *Lindahl*, using common keys, as taught by *Hurst*.”); *id.* (“A POSITA would have recognized that *Lindahl*’s partial encryption teachings were fully compatible with *Hurst*’s DRM teachings because the former was directed to which portions of the video stream are encrypted, while the latter was directed to the separate issue of which key to use for encryption.”).

32-33.¹¹ However, *Hurst* only references in passing the fact that the same key **can** be used for all streams, a point that was not in dispute. The question is whether *Hurst* teaches doing so for alternative streams of protected content, and *Hurst* teaches against doing such a thing—for *Hurst* follows its entirely noncommittal mention that it is possible to use a single key with a prolonged discussion of why it is better to **not** use a single key and to use a specialized key instead. Thus, *Hurst* does not provide any reason for a POSITA to use the same key to encrypt alternative streams of protected content to meet the claimed invention.

Hurst comes very close to not disclosing anything at all about the use of keys, let alone the use of a common key or different keys. *Hurst*'s entire discussion regarding the use of keys is just one short paragraph. That paragraph reads as follows:

Content may be encrypted when the content is processed by the encoder module 406, for example. The streamlets 304 of different bitrates may be encrypted with the same key. Alternatively, the encoder module 406 may be configured to encrypt each bit rate with a different set of encryption keys. ***This, beneficially, allows for a publisher to allow a "standard" user to view the movie at a lower resolution while a***

¹¹ The Petition makes no argument that the combination of *Lindahl* and *Hurst* renders this limitation obvious if *Lindahl* and *Hurst* both individually do not.

***“premium” user is allowed to watch the movie at a higher resolution
bitrate.***

Hurst, 18:64-19:6.

Conspicuously absent from *Hurst*’s disclosure above is any mention of any benefit to using the same key, as opposed to using different sets of encryption keys. Instead *Hurst* unambiguously touts the latter as superior. Since prior art teaches away when “a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant,” *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015), this single paragraph in *Hurst* cannot motivate the PHOSITA to modify *Chen* to encrypt alternative streams of protected content with the same key.

“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016). It is not sufficient that *Hurst* simply discloses the possibility of using a common key. An invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Corp. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). Rather, it is Petitioner’s burden to demonstrate both that a skilled artisan would have been motivated to combine the teachings of the

prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so. No such motivation is present here. “Thus, the Petition fails to connect the alleged rationale to combine the prior art with the specific limitations of the claims and claim mapping.” *See Paypal, Inc. v. IOENGINE, LLC*, IPR2019-00906, Paper 16 at 22 (PTAB Oct. 29, 2019).

Moreover, the Petition fails to offer any cognizable evidence, or even argument, that *Hurst* would furnish the PHOSITA with a reasonable expectation of success in using a set of common keys to achieve the claimed invention. “Obviousness is a question of law based on multiple underlying factual determinations, including whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention ***and whether there would have been a reasonable expectation of success in doing so.***” *TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352 (Fed. Cir. 2019) (reversing Board IPR obviousness determinations). The Petition’s sole mention of reasonable expectation of success is a single conclusory paragraph, which merely asserts as a bald conclusion that the PHOSITA “would have had a reasonable expectation of success in combining the combined teachings” because they were widely known in the art and widely recognized as complementary and compatible techniques that were intended to be used together, and which [the PHOSITA] would have been

familiar with.” Pet., 21. The only support the Petition identifies for this is a single paragraph in its technical declaration, which just parrots its attorneys’ argument. *Id.* (citing Ex. 1003 ¶ 126). Not only does this argument amount to a simple conclusory assertion that all the limitations were known and used in the art and could at least sometimes be combined in at least some contexts, it also entirely ignores the fact that, as shown above, *Hurst* actually leads the PHOSITA directly away from using a set of common keys in the direction of a more advantageous avoidance of such a set. This leading away from using a set of common keys “counts significantly against finding a motivation to take the claimed steps with a reasonable expectation of success.” *Institut Pasteur v. Focarino*, 738 F.3d 1337, 1345 (Fed. Cir. 2013).

For these reasons, the Petition fails to establish a reasonable probability that the PHOSITA would be motivated to combine *Chen* with *Hurst* to utilize a set of common keys for the claimed alternative streams. Even if *Hurst* did disclose the possibility of utilizing the same key to encrypt all streams, the Petition has not met its burden to show why the PHOSITA would combine this alleged suggestion from *Hurst* in the system of *Chen* as proposed, as discussed *infra* § III.C.

C. The Petition’s Reliance On The Patent Itself As The Motivation To Modify *Chen* In View Of *Lindahl* Or *Hurst* To Add This Limitation Must Be Rejected.

“[A] showing of a suggestion, teaching, or motivation to combine the prior art references is an ‘essential component of an obviousness holding.’” *Brown &*

Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25 (Fed. Cir. 2000) (quoting *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998)). Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, “would have selected these components for combination in the manner claimed.” *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 n.4 (Fed. Cir. 2018), (quoting *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000)). As the Board has explained, the motivation to combine must be based on “some objective teachings in the prior art or knowledge generally available to one of ordinary skill in the art”:

Because Petitioners have not explained with adequate specificity how ***some objective teachings in the prior art***, or knowledge generally available to one of ordinary skill in the art, would have led that individual to combine the relevant teachings to arrive at the claimed invention [based on the references], we conclude that Petitioners have not shown by a preponderance of the evidence that the challenged claims would have been obvious over the combination of those references.

Celltrion, IPR2016-01614, Paper 65 at 22-23. Here, Petitioner relies on the alleged teachings in the *Lindahl* and *Hurst* references, Pet., 30-35, but its reliance on them is misplaced. As discussed *supra* §§ III.A-B, neither *Lindahl* nor *Hurst* provide any “objective teaching” as to why a POSITA should modify *Chen* to utilize a set of common keys to encrypt alternative streams. *Lindahl* does not address encryption

of alternative streams since it is directed at systems that download media files for later use, *supra* § III.A, and *Hurst* merely points out that use of both common and different keys is possible, but teaches only benefits of **avoiding** use of a common or global key, *supra* § III.B.

The prior art provides no “objective teaching” as to why a PHOSITA would be motivated to modify *Chen* in view of *Lindahl* and *Hurst* to use a set of common keys to encrypt alternative streams to arrive at the claimed invention. As a result, the Petition cites and relies upon the benefits of utilizing a set of common keys that was actually disclosed by the inventors in the ’588 Patent specification. Pet., 19.

For example, tabulated below is a side by side comparison of Petition’s alleged motivation to combine *Hurst*’s use of a single key with *Chen*’s system, on the right hand side, alongside exemplary discussions from the Patent’s specification on the benefits of using a common key, on the left hand side. The table below demonstrates that these benefits of using a common key are all lifted bodily from *the inventors’ own disclosures* in the ’588 Patent:

Patent’s Specification On Benefits Of “A Set Of Common Keys”	Petition’s Purported Motivation To Modify <i>Chen</i>
“By encrypting each of the alternative streams using the same set of cryptographic information, a playback device can <i>switch between streams without the need to maintain or acquire multiple sets of cryptographic information</i> in memory or to reinitialize the decryption engine of the	“For example, a playback device adaptively streaming a movie is typically granted access to its alternative streams for the movie because <i>it is expected to switch between them depending on channel bandwidth</i> . Ex. 1003, ¶116. Since the alternative streams are accessed as a

playback device with a different set of cryptographic information.”

Patent, 8:55-61.

“The playback device need not perform the computationally intensive process of accessing the encrypted cryptographic information in the header of the new stream, because each of the alternative streams uses common cryptographic information.”

Patent, 10:27-31.

“As is discussed further below, the alternative streams of protected content utilized to perform adaptive bitrate streaming are protected using common cryptographic information. Once the client application 20d has obtained the common cryptographic information, which can be a time consuming and/or computationally intensive process, ***the playback device can use the same cryptographic information to access content in any of the alternative streams of protected content within a single instance of the title.***”

Patent, 13:11-21

“When the media from each of the streams is protected using common cryptographic information and inserted into the Matroska container files in the manner outlined above, ***transitions between streams can occur upon the completion of playback of media within a Cluster element without the need to retrieve additional cryptographic information.***”

Patent, 23:46-51

group, it would have been obvious to encrypt them as a group, using the same set of keys, ***so that the alternative streams can be accessed as a group using that set of keys.*** See *id.* Thus, Hurst teaches the natural and obvious approach to DRM for adaptive streaming, which a POSITA would have been motivated to apply. *Id.*”
Pet., 19

The fact that Petitioner’s alleged reasons that it would have been obvious to combine prior art elements to arrive at the invention are so similar to the Patent’s own inventors’ description of the reasons they realized it was beneficial to combine elements to make the invention is strong evidence that these putative “obvious” reasons to combine are nothing more than the hindsight that the Federal Circuit and the Board have both rejected in many cases. It is impermissible, in arguing obviousness, to “use that which the inventor taught against its teacher.” *In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002) (alteration marks omitted, quoting *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)). This disclosure is part of the Patent’s “detailed disclosure” of the inventors’ invention. *Patent*, 8:35. Petitioner has identified no suggestion that these benefits were already widely known, or known at all, before their disclosure in the ’588 Patent. “The inventor’s own path itself never leads to a conclusion of obviousness; that is hindsight.” *Otsuka Pharm. Co. v. Sandoz, Inc.*, 678 F.3d 1280 (Fed. Cir. 2012); *accord, e.g., Dembiczak*, 175 F.3d at 999 (“tak[ing] the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability” in this manner is “the essence of hindsight.”); *IBG LLC v. Trading Techs. Int’l, Inc.*, CBM 2016-00032, Paper 16 at 26 (PTAB Aug. 16, 2016) (“Obviousness cannot be established by hindsight combination to produce the claimed invention.”) (alterations omitted, *quoting In re*

Dance, 160 F.3d 1339, 1343 (Fed. Cir. 1998)).¹² To be sure, Petitioner purports to support these alleged motivations with citations to Dr. McDaniel’s opinion declaration, but obviousness arguments may not be supported by expert testimony that “relied on the...patent itself as [its] roadmap for putting...pieces of a ‘jigsaw puzzle’ together.” *In Touch Techs., Inc. v. VGo Communs., Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (reversing invalidity finding).

The Petition’s failure to provide any objective teaching as to why a POSITA would have modified *Chen* to use a common key is especially significant here because the claimed “set of common keys” is, as the Petition tacitly concedes, one of the most critical features of the invention. Pet., 11 (“According to PO, the ’558 patent is directed to using ‘common frame encryption keys to encode alternative video streams.’”) (internal citation omitted). As the Federal Circuit has repeatedly made clear, petitioners may not use the “‘common knowledge’” of artisans, or any other such “gap-filler” like “ordinary creativity,” “common sense,” or the like, to simply add a claim limitation that is missing from an obviousness combination—

¹² The same goes for reasonable expectation of success. “Both the suggestion and the reasonable expectation of success ‘must be founded in the prior art, not in the applicant’s disclosure.’” *Noelle v. Lederman*, 355 F.3d 1343, 1352 (Fed. Cir. 2004) (quoting *In re Dow Chem.*, 837 F.2d 469, 473 (Fed. Cir. 1988)).

especially where, as here, the missing limitation goes to the heart of the invention. *DSS*, 885 F.3d at 1374. The Federal Circuit has “repeatedly warn[ed]” that reliance on such “gap-filler[s],” “whether to supply a motivation to combine or a missing limitation—cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, *especially when dealing with a limitation missing from the prior art references specified.*” *Id.* (internal citations and quotations omitted); *see Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1363 (Fed. Cir. 2016) (“In cases in which ‘common sense’ is used to supply a missing limitation, as distinct from a motivation to combine, moreover, our search for a reasoned basis for resort to common sense must be searching. *And, this is particularly true where the missing limitation goes to the heart of an invention.*”)

For these reasons, the Petition has failed to meet its burden to show why a POSITA would modify *Chen* to use a common key either in view of *Lindahl* or as disclosed in passing by *Hurst*.

V. CONCLUSION

The Petition ignores the Office’s thoughtful prosecution of art much closer to the challenged claims than these references, as well as the tide of recent discretionary non-institution decisions involving similarly flawed petitions. Petitioner ignores that the claimed encryption information must be located “within the requested portion of the protected video,” which its relied-upon reference *Lindahl* cannot

disclose because it does not involve a system where media files can be either requested or received in “portions.” And Petitioner also fails to identify any motivation to modify *Chen* to encrypt alternative streams using “a set of common keys,” except for the benefits of doing so set forth in the Patent itself—literally using the Patent itself as its roadmap to the claimed invention. Because each of these flaws is sufficient to reject the Petition, institution should be denied.

Respectfully submitted,

/ Kenneth J. Weatherwax /

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Date: May 28, 2020

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Preliminary Response (the “POPR”) consists of 13,996 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POPR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/ Parham Hendifar /

Date: May 28, 2020

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following documents were served by electronic service, by consent between the parties (Pet. at 85), on the date signed below:

**PATENT OWNER'S PRELIMINARY RESPONSE
TO PETITION FOR INTER PARTES REVIEW
OF UNITED STATES PATENT NO. 10,225,588
PURSUANT TO 35 U.S.C. § 313, 37 C.F.R. § 42.107**

EXHIBITS 2002 THRU 2011

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