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Paper 50
Entered: August 23, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC. and HULU, LLC,
Petitioner,

v.

DIVX, LLC,
Patent Owner.

IPR2020-00558
Patent 10,225,588 B2

Before KEVIN F. TURNER, BART A. GERSTENBLITH, and IFTIKHAR AHMED, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
Granting In Part, Denying In Part, and Dismissing In Part Petitioner's Motion to Exclude
35 U.S.C. § 318(a)

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, we determine that Petitioner has not shown, by a preponderance of the evidence, that claims 1–24 of U.S. Patent No. 10,225,588 B2 (Ex. 1001, "the '588 Patent") are unpatentable.

A. Procedural Background

Netflix, Inc. and Hulu, LLC (collectively, "Petitioner") filed a Petition (Paper 3, "Pet.") requesting institution of *inter partes* review of claims 1–24 of the '588 Patent. DivX, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). We additionally authorized the filing of a Reply by Petitioner (Paper 8) to Patent Owner's Preliminary Response and a Sur-reply by Patent Owner (Paper 9) to further consider the arguments of the parties with respect to the application of our discretion under 35 U.S.C. § 325(d).

Pursuant to 35 U.S.C. § 314(a), on August 26, 2020, we instituted *inter partes* review on the ground of:

Claims Challenged	35 U.S.C. §[1]	References
1–24	103(a)	Chen,[2] Lindahl,[3] Hurst[4]

See Pet. 12; Paper 10 ("Dec."). Petitioner relies upon a Declaration by Dr. Patrick D. McDaniel (Ex. 1003).

Patent Owner filed a Patent Owner Response (Paper 17, "PO Resp."), along with a Declaration of Dr. Seth Nielson (Ex. 2012) to support its positions. Petitioner filed a Reply (Paper 29, "Pet. Reply") to the Patent Owner Response, along with an additional Declaration of Dr. McDaniel (Ex. 1031). Patent Owner filed a Sur-reply to Petitioner's Reply (Paper 40, "PO Sur-reply"), along with a Declaration of Dr. Chandrajit Bajaj (Ex. 2027), that had been made of record in another proceeding. An oral hearing was held on May 25, 2021. A transcript of the hearing is included in the record. Paper 49.

Additionally, for the reasons explained herein, we grant, deny, and dismiss, in part, Petitioner's Motion to Exclude (Paper 42). *See* Section III.

B. Related Matters

Petitioner and Patent Owner identify the following related matters: *DivX, LLC v. Netflix, Inc.*, No. 2:19-cv-01602 (C.D. Cal.); *DivX, LLC v. Hulu, Inc.*, No. 2:19-cv-01606 (C.D. Cal.). Pet. 84; Paper 5, 1.

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[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the effective filing date of the challenged claims of the '558 Patent is before March 16, 2013 (the effective date of the relevant amendment), the pre-AIA version of § 103 applies. *See* Ex. 1001, codes (60), (63).

[2] U.S. Patent Application Publication No. US 2011/0096828 A1, published April 28, 2011 (Ex. 1006, "Chen").

[3] U.S. Patent Application Publication No. US 2007/0083467 A1, published April 12, 2007 (Ex. 1007, "Lindahl").

[4] U.S. Patent No. 8,683,066 B2, issued March 25, 2014 (Ex. 1008, "Hurst").

C. The '588 Patent

The '588 Patent is directed to "[s]ystems and methods for performing adaptive bitrate streaming using alternative streams of protected content." Ex. 1001, code (57). The Background section of the '588 Patent details that "content can be divided into audio, video, and subtitle streams and some streams can be encoded as alternative streams that are suitable for different network connection bandwidths or comply with specific geographic restrictions and/or other restrictions." *Id.* at 1:54–58. That same section also details that adaptive bit rate streaming involves "detecting the present streaming conditions . . . 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." *Id.* at 1:60–64. The Background section of the '588 Patent also details that "[i]n adaptive streaming systems, the source media is typically stored on a media server as a top level index file pointing to a number of alternate streams that contain the actual video and audio data. Each stream is typically stored in one or more container files." *Id.* at 2:12–16. The '588 Patent also confirms that it was known to protect content "using cryptographic information such as (but not limited to) one or more encryption keys to encrypt *some or all* of the content." *Id.* at 2:52–54 (emphasis added).

The '588 Patent describes, according to specific embodiments, that a system uses a top level index file identifying the alternative streams of protected video, with each including partially encrypted video frames encrypted using a set of common keys. Ex. 1001, 16:43–49, 23:24–28. A copy of the set of common keys is obtained and the streaming conditions for the playback device are detected. *Id.* at 23:46–51. A stream is selected,

based on those conditions, and a container index is used to determine the byte ranges for portions of those streams, which are then requested. *Id.* at 24:51–57, 25:6–10. Based on encryption information that identifies encrypted portions of the frames of video, the encrypted portions are decrypted using the set of common keys and the streamed video is played back. *Id.* at 25:10–21.

Challenged claims 1 and 12 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below, with Petitioner's bracketing added for reference:

> 1. [a] A playback device for playing protected content from a plurality of alternative streams, comprising:
>
> [b] 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:
>
> [c] obtaining a top level index file identifying a plurality of alternative streams of protected video, [d] wherein each of the alternative streams of protected video includes partially encrypted video frames [e] that are encrypted using a set of common keys comprising at least one key, [f] and wherein the partially encrypted video frames contain encrypted portions and unencrypted portions of data;
>
> [g] obtaining a copy of the set of common keys;
>
> [h] detecting streaming conditions for the playback device;
>
> [i] selecting a stream from the plurality of alternative streams of protected video based on the detected streaming conditions;
>
> [j] receiving a container index that provides byte ranges for portions of the selected stream of protected video within an associated container file;
>
> [k] requesting portions of the selected stream of protected video based on the provided byte ranges;

> [l] locating encryption information that identifies encrypted portions of frames of video within the requested portions of the selected stream of protected video;
>
> [m] decrypting each encrypted portion of the frames of video identified within the located encryption information using the set of common keys; and
>
> [n] playing back the decrypted frames of video obtained from the requested portions of the selected stream of protected video.

Ex. 1001, 27:30–63.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner, supported by Dr. McDaniel's testimony, proposes that a person of ordinary skill in the art at the time of the invention ("POSITA") would have had "a bachelor's degree in mechanical engineering, electrical engineering, computer science, or a similar field with at least two years of experience in video streaming and media security or . . . a master's degree in mechanical engineering, electrical engineering, computer science, or a similar field with a specialization in video streaming and media security." Pet. 14–15 (citing Ex. 1003 ¶¶ 65–67). Patent Owner does not refute Petitioner's assessment and appears to apply such a level of skill in its arguments against combining Chen, Lindahl, and Hurst to teach or suggest the elements of the challenged claims. *See generally* PO Resp.

As such, we continue to adopt and apply Petitioner's unopposed position as to the level of ordinary skill in the art for purposes of this decision. *See* Dec. 6.

B. Claim Construction

In this *inter partes* review, "claims are construed using the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. § 282(b)." *See* 37 C.F.R. § 42.100(b) (2019). The claim construction standard includes construing claims in accordance with their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

If the specification "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Another exception to the general rule that claims are given their ordinary and customary meaning is "when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1313 (Fed. Cir. 2013) (quoting *Thorner v. Sony Computer Entm't Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy"); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*,

868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

Petitioner does not present any specific claim terms for construction. Petitioner contends that "the challenged claims are invalid under their plain and ordinary meaning." Pet. 16 (citing Ex. 1003 ¶¶ 100–101). Patent Owner, likewise, does not proffer any specific constructions for claim terms. *See generally* PO Resp. As such, we apply the plain and ordinary meaning of each claim term in the analysis below.

We note that Patent Owner continues to advocate for a particular understanding of limitation [l] of claim 1, as it did in its Preliminary Response. *Compare* Prelim. Resp. 26–39, *with* PO Resp. 24–38, *and* PO Sur-reply 1–8. Although we continue to find Patent Owner's arguments about limitation [l] to be unpersuasive, we need not resolve the issue as we determine that Petitioner has not shown, by a preponderance of the evidence, that the challenged claims are unpatentable on another basis. *See* Dec. 27–31 (discussion of Patent Owner's arguments and our rejection of its implicit construction).

C. Legal Standards – Obviousness

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give

> light to the circumstances surrounding the origin of the subject matter sought to be patented.

As explained by the Supreme Court in *KSR International Co. v. Teleflex Inc.*,

> Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")).

"Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). "[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan 'would have had a reasonable expectation of success from doing so.'" *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

D. Alleged Obviousness of Claims 1–24 over Chen, Lindahl, and Hurst

Petitioner contends that claims 1–24 would have been obvious over the combination of Chen, Lindahl, and Hurst. Pet. 17–83. We begin with

brief discussions of the cited references, consider Petitioner's proffered motivation to combine those references, and then Patent Owner's arguments asserting that one of ordinary skill in the art would not have been motivated or able to modify Chen to implement the partial frame encryption of Lindahl.

1. Chen

Chen is directed to enhanced block-request streaming using scalable encoding, which provides for improvements in the user experience and bandwidth efficiency. Ex. 1006, codes (54), (57). Chen details that video may be "encoded at multiple bitrates to form different versions, or representations," and those representations are broken into smaller pieces, "perhaps on the order of a few seconds each, to form segments," with each segment stored as a separate file. *Id.* ¶ 63. As a client device requests segments, it "switch[es] to different data rates based on available bandwidth," such that the client device may request multiple representations, each presenting a different media component. *Id.* ¶ 64. Chen also discloses that a media presentation description ("MPD") is used, which "describe[s] a media presentation that is a structured collection of segments, each containing media components such that the client can present the included media in a synchronized manner and can provide advanced features, such as seeking, switching bitrates and joint presentation of media components in different representations." *Id.* ¶ 66. Figure 5 of Chen is reproduced below:

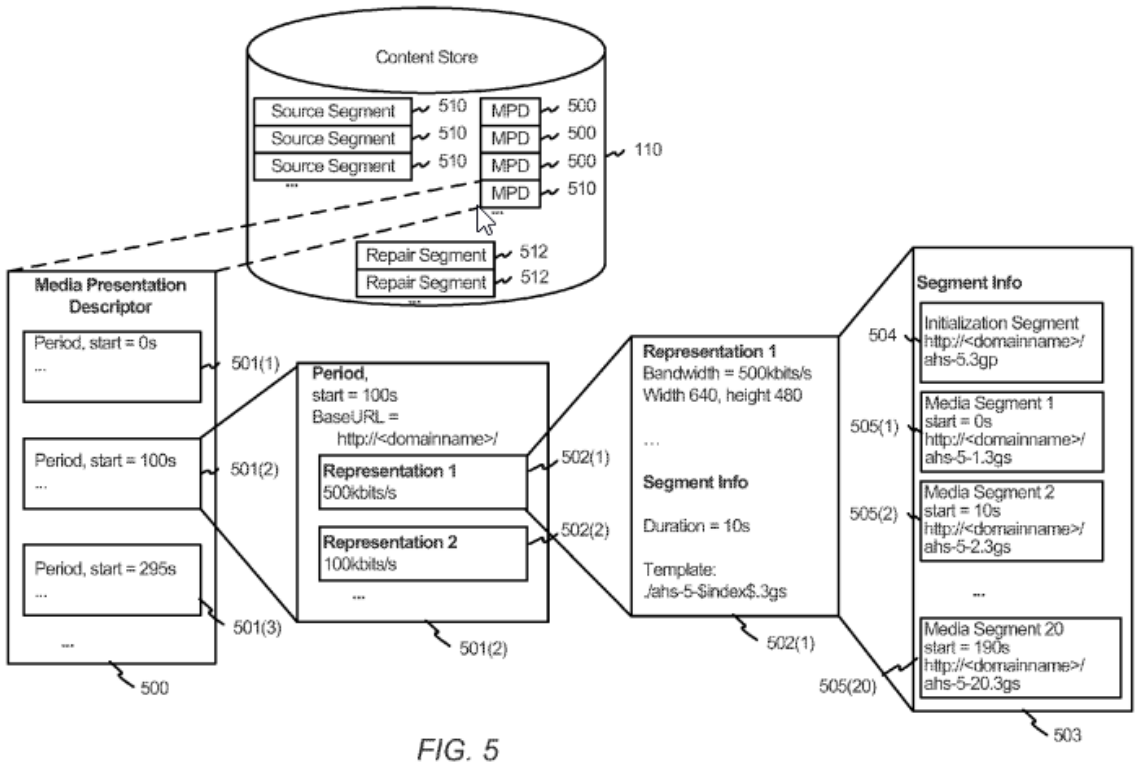

FIG. 5

Figure 5 of Chen provides possible structures of the content store with segments and MPD files, also illustrating a breakdown of segments, timing, and other structures in exemplary MPD file. *Id*. ¶ 216.

Chen also details that:

> The media presentation may be constructed to permit access by terminals with different capabilities, such as access to different access network types, different current network conditions, display sizes, access bitrates and codec support. The client may then extract the appropriate information to provide the streaming service to the user.

Ex. 1006 ¶ 68.

2. Lindahl

Lindahl is directed to partial encryption techniques for media data, providing that partially encrypted media files allow for decryption to be faster and less resource intensive. Ex. 1007, code (57), ¶ 95. Lindahl discloses that each block of a media file is encrypted in accordance with the

encryption parameters, and the process may utilize "one or more encryption keys when encrypting each block." *Id.* ¶ 54. Figures 5A–5C and 6A–6B of Lindahl are reproduced below:

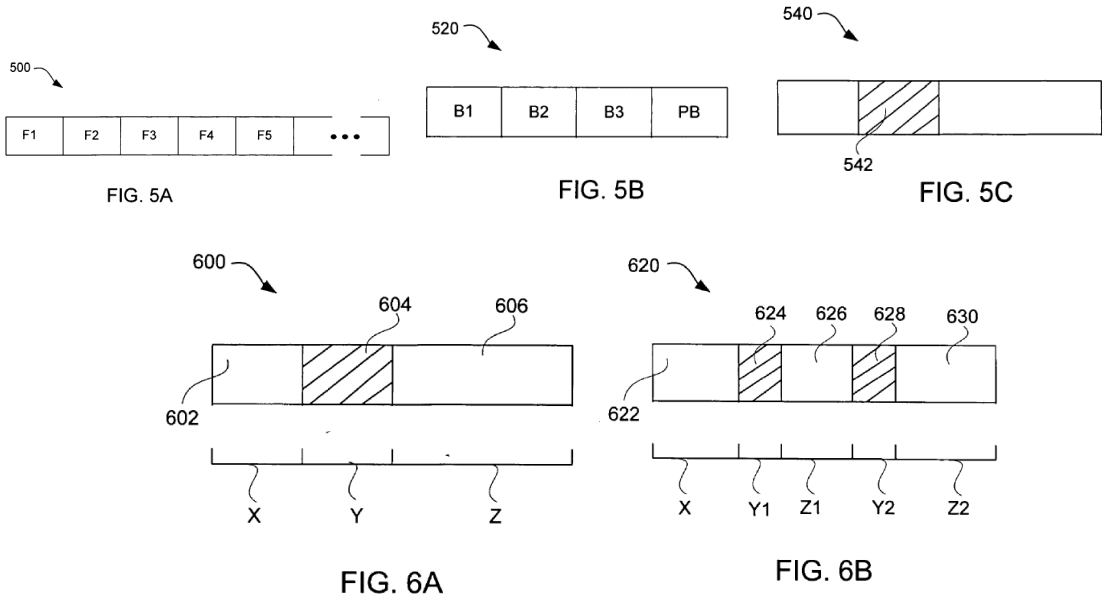

FIG. 5A FIG. 5B FIG. 5C

FIG. 6A FIG. 6B

Figures 5A–5C and 6A–6B of Lindahl illustrate examples of the media file encryption process. *Id.* ¶¶ 55–58.

Lindahl discloses that media file 500 includes frames F1, F2, etc., with each frame having header information and media data. Ex. 1007 ¶ 55. Representative media frame 520, shown in Figure 5B, is divided into blocks, B1, B2, B3, of the same size, as well as partial block PB. *Id.* In representative block 540, shown in Figure 5C, only portion 542 is encrypted, with the remainder being unencrypted. *Id.* Partially encrypted block 600 has initial unencrypted portion 602, followed by encrypted portion 604, and followed by unencrypted portion 606. *Id.* ¶ 57, Fig. 6A. In another embodiment, partially encrypted block 620 includes encrypted portions 624 and 628, and unencrypted portions 622, 626, and 630, with the portions having lengths X, Y1, Z1, Y2, and Z2, measured in a number of bits or bytes. *Id.* ¶ 58, Fig. 6B.

Lindahl's system allows for client machines to access a media server to browse, select, download, and play purchased media files, where encryption processes impose limitations on access to those files. Ex. 1007 ¶ 40. Lindahl also discloses that a user may "receive a global key or other cryptographic key when a media file is purchased." *Id.* ¶ 64. Lindahl further discloses that the download of the media file "can be performed by streaming the media file through the data network to the user." *Id.* ¶ 65. Lindahl also discloses that "[a]ny cryptographic keys being used with respect to the encrypted media file are also stored in the client machine." *Id.* ¶ 66.

3. Hurst

Hurst is directed to the maintenance of a programming lineup of adaptive-bitrate content streaming, using a timeline module and a plurality of streamlets. Ex. 1008, code (57). Figures 2b, 3a, and 3b of Hurst are reproduced below.

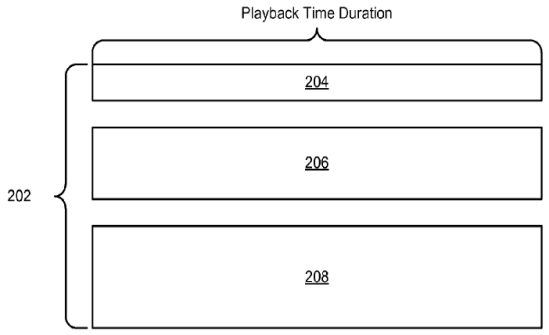

FIG. 2b

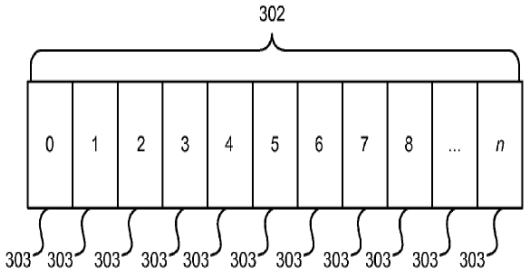

FIG. 3a

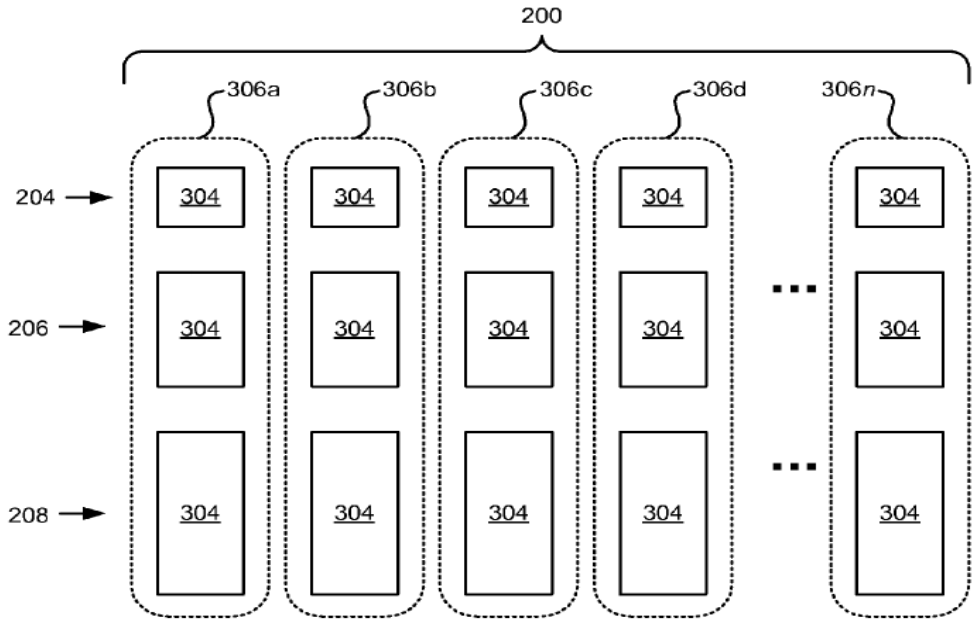

FIG. 3b

Figures 2b, 3a, and 3b of Hurst illustrates a plurality of streams divided into a plurality of source streamlets. *Id.* at 6:46–7:8, 7:9–20.

Figure 2b illustrates plurality of streams 202 having varying degrees of quality and bandwidth, with low quality, medium quality, and high quality streams 204, 206, and 208, respectively, containing encoded representations of a content file encoded and compressed to varying bitrates. Ex. 1008, 6:46–53. Figure 3a illustrates stream 302 divided into a plurality of source streamlets 303, each encapsulated as an independent media object. *Id.* at 6:59–64. Figure 3b illustrates sets of streamlets 304, having identical time indices and durations but varying bitrates, such that set 306a includes encoded streamlets 304 having low 204, medium 206, and high 208 bitrates. *Id.* at 7:9–16. Hurst also discloses that its system uses a digital rights management ("DRM") server that is configured to maintain keys used to decrypt content and determine whether a client device is allowed to access content. *Id.* at 18:62–64. Hurst further discloses that the streamlets may be

encrypted with the same key or may be configured to encrypt each bit rate with a different set of encryption keys. *Id.* at 18:66–19:2.

4. Petitioner's Proffered Motivation to Combine the References

Petitioner argues that a person of ordinary skill in the art would have been motivated to combine the teachings of Lindahl and Hurst with Chen, such that the DRM processes, including partial encryption and key management, of Lindahl and Hurst, would have been employed in Chen's adaptive streaming system. Pet. 17. Petitioner asserts that such technologies were commonly used together and were recognized as complementary, and would have been combined for their known and conventional purposes. *Id.* (citing Ex. 1003 ¶ 114). Petitioner also asserts that it was "widely known for video streaming to include these features to account for bandwidth variability over the Internet and address piracy." *Id.* (citing Ex. 1010, Abstract; Ex. 1006 ¶¶ 103–104; Ex. 1007 ¶¶ 36, 39; Ex. 1008, 3:12–23, 6:6–58).

Petitioner acknowledges that although Chen discloses DRM (Ex. 1006 ¶ 522), it does not disclose any particular implementation. Pet. 18. According to Petitioner, one of ordinary skill in the art would have used Lindahl and Hurst to supplement Chen's DRM requirements. *Id.* Petitioner asserts that Lindahl prevented unauthorized access to media while improving computational efficiency through its partial encryption teachings that would have been "well-suited for video streaming applications," and its key management teachings "provided security, simplicity and efficiency benefits." *Id.* (citing Ex. 1003 ¶¶ 115, 119–122; Ex. 1007 ¶ 95). Petitioner further asserts that Hurst discloses that alternative streams are encoded at different bitrates and encrypted as a group in the same manner, such as by

using the same key, and thus providing a natural and obvious approach to DRM for adaptive streaming. *Id.* at 19 (citing Ex. 1006 ¶¶ 63–64; Ex. 1003 ¶ 116). Petitioner argues that one of ordinary skill in the art would have been motivated to apply teachings of Lindahl and Hurst to Chen to address piracy concerns, improve the efficiency of adaptive streaming, optimize the balance between bitrate and bandwidth, and improve the end-user experience with fast startup and seek. *Id.* at 18–19. Petitioner also asserts that ordinarily skilled artisans would have had a reasonable expectation of success in combining the teachings of Chen, Lindahl, and Hurst 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 a [person of ordinary skill in the art] would have been familiar with." *Id.* at 21 (citing Ex. 1003 ¶ 126).

5. Patent Owner's Arguments Countering Motivation to Combine the References, Petitioner's Responses, and Our Analysis

Patent Owner asserts that Petitioner has failed to demonstrate that a person of ordinary skill in the art would have been motivated to combine the references as proposed by Petitioner because Petitioner's arguments are conclusory, not supported by sufficient evidence, and Petitioner has not demonstrated "that its proffered goals would be better achieved through its combination over Chen's existing system." PO Resp. 2–3. Patent Owner also argues that aspects of Chen's system are incompatible with partial frame encryption, or at least beyond the capability of ordinarily skilled artisans to ensure a reasonable likelihood of success, and that the proposed modifications of Chen would actually deteriorate the efficiency of its system, negating Petitioner's proffered goal in its stated reason to combine

the references. *Id.* at 3. We address Patent Owner's motivational arguments below and then address the compatibility arguments thereafter.

Patent Owner begins by arguing that Petitioner's purported motivation for combining the references "is not supported by any cognizable evidence," and the unexplained citations to its expert's declaration cannot be relied upon. PO Resp. 4 (citing Consolidated Trial Practice Guide (Nov. 2019), 35–36; *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 9–10 (PTAB Aug. 29, 2014) (informative)) (emphasis omitted). Patent Owner also argues that "[b]ecause Petitioner's motivation is not supported by any evidence, it fails as a matter of law." *Id.* at 5 (citing *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016)). Petitioner responds that the Petition provides "ample motivation to combine," and that Patent Owner is misrepresenting the Petition's analysis by ascribing it to a single sentence. Pet. Reply 3–4. On this point, we agree with Petitioner.

Reasonable expectation of success and motivation to combine are different legal concepts. *See, e.g.*, *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1365–69 (Fed. Cir. 2016). Although we continue to determine that Petitioner has sufficiently established that an ordinarily skilled artisan would have had some motivation to combine the teachings of Chen, Lindahl, and Hurst, *see* Dec. 16, we determine below that Petitioner's obviousness showing does not sufficiently demonstrate that one of ordinary skill in the art would have had a reasonable expectation of success, in view of all of the disclosure and teachings of Chen and Lindahl.

As Petitioner points out, beyond the exemplary sentence on which Patent Owner's argument focuses, the Petition provides preceding and subsequent paragraphs regarding the reason for combining Chen, Lindahl,

and Hurst, i.e., more than "to address privacy concerns and improve efficiency." *See* Pet. 17–22. Petitioner discusses express motivations in the secondary references, as well as benefits found in those secondary references, and applies those as a reason to combine elements of the systems. *Id.* Additionally, we are not persuaded that the Petition's citations to Dr. McDaniel's testimony (Ex. 1003 ¶¶ 114–116, 119–120, 126) in the Petition were "unexplained," and we find that testimony beneficial in considering the proffered motivation to combine Chen, Lindahl, and Hurst.

Patent Owner next argues that Petitioner's proffered motivation is made with the assumption that Chen "did not require any particular DRM implementation." PO Resp. 6 (quoting Pet. 18). Patent Owner counters that Chen discloses fragment-level encryption, such that a person of ordinary skill in the art would have understood that the entire fragment or block is encrypted as a singular unit. *Id.* (citing Ex. 1006 ¶ 522; Ex. 2012 ¶¶ 49–50). Patent Owner distinguishes such encryption from frame or partial-frame encryption, such as disclosed in Lindahl, with encrypted fragments in Chen encompassing between 12 and 30 frames. *Id.* at 6–8 (citing Ex. 2013, 108:5–9, 106:21–107:3; Ex. 1006 ¶ 66, Fig. 9(a); Ex. 2012 ¶¶ 52–53). Patent Owner argues that Petitioner does not identify any fault in Chen's existing system, or show that replacing those aspects with Lindahl's partial frame encryption method would address piracy or improve efficiency when compared to Chen's existing system. *Id.* at 8–9 (citing *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed. Cir. 2012); *Nichia Corp. v. Everlight Ams., Inc.*, 855 F.3d 1328, 1339 (Fed. Cir. 2017), *cert. denied*, 139 S. Ct. 183 (2018)).

Petitioner counters that Patent Owner has misrepresented Chen's encryption discussion, arguing that paragraph 522 of Chen concerns a "hypothetical exercise that Chen uses 'to simplify the discussion' for concurrent HTTP/TCP requests." Pet. Reply 11. Petitioner argues that it would be improper to limit Chen to an embodiment, especially one that is a hypothetical or optional embodiment. *Id.* at 12. Petitioner also argues that "it would be improper under Federal Circuit case law to require proof that Lindahl's partial encryption is superior to other known encryption techniques." *Id.* at 8 (citing *Novartis Pharm. Corp. v. W.-Ward Pharm. Int'l Ltd.*, 923 F.3d 1051, 1059 (Fed. Cir. 2019)). We agree with Patent Owner on this issue.

As Patent Owner notes, the Petition states that Chen "did not require any particular DRM implementation." PO Resp. 6 (quoting Pet. 18). Although factually true, with respect to requirements, Petitioner's statement suggests that Chen is agnostic with respect to encryption, such that it would "leav[e] particulars to the POSITA's knowledge and preferences." Pet. 18 (citing Ex. 1003 ¶ 115). As Patent Owner points out, however, Chen does discuss at least one type of encryption regime, so that a particular type of encryption, i.e., fragment-level encryption, would presumably have relevance to ordinarily skilled artisans reviewing Chen. "The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332–33 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009 (CCPA 1968)). Given that Chen discusses at least one particular type of encryption, we are not persuaded that one of ordinary skill in the art

would forget its disclosure and consider *any* type of DRM, without evidence of something more in Chen or the prior art that would counsel DRM generally. As such, the fragment-level encryption discussed in Chen would inform ordinarily skilled artisans about the types of techniques that Chen would deem to be applicable to implement. Thus, although discussed with respect to a single embodiment, the types of DRM envisioned by the inventors in Chen would have had a bearing on the types of encryption or protection that one of ordinary skill in the art would have sought to incorporate into Chen. Therefore, while Chen cannot be said to be incompatible to frame or partial-frame encryption, the types of protection identified by Chen have relevance.

Patent Owner also argues that Chen improves its latency, user experience, and efficiency through features that are incompatible with partial frame encryption. PO Resp. 9–13. Patent Owner continues that those features in Chen are "integral parts of its system," with independent scalability layers and Forward Error Correction ("FEC") being necessary to allow for Chen's performance, to minimize latency and to improve efficiency. *Id.* at 11–12 (citing Ex. 2012 ¶¶ 55–61).

Petitioner responds that the aspects of scalability and FEC in Chen are "optional" and not integral to its system. Pet. Reply 5, 7. Petitioner argues that Chen provides that "scalable layers" are used "[i]n some embodiments," and that Chen provides for the simplest case where "alternative representations" are stored as separate streams, rather than enhancements of each other used together as scalable layers. *Id.* at 9 (citing Ex. 1006 ¶¶ 27, 70). Patent Owner responds that the title of Chen is "Enhanced Block-Request Streaming Using Scalable Encoding" and that "scalable blocks" are

"necessary." PO Sur-reply 8–9 (citing Ex. 1006 ¶¶ 27, 375, 379, code (54); Ex. 2012 ¶¶ 55–62) (emphasis omitted). We agree with Patent Owner in this regard.

As Patent Owner points out, in Chen, the sentence that precedes the phrase quoted in Petitioner's Reply about scalable layers being only in some embodiments is: "Chen's 'system is configured to provide and consume scalable blocks.'" PO Sur-reply 9 (quoting Ex. 1006 ¶ 27) (emphasis omitted). We also find the testimony of Dr. Nielson on this point to be persuasive, i.e., that scalability layers are an integral part of Chen's system, and, as Patent Owner indicates, that testimony is unrebutted by testimony from Dr. McDaniel.[5] *Id.* We further agree with Patent Owner that Petitioner has not pointed to a single embodiment of Chen that does not utilize scalability. *Id.* at 10. We, therefore, do not agree with Petitioner that scalable layers are an optional "feature" of Chen.

Even if we accept Petitioner's assertion that Chen's statement that "a viable system need not include all of the features described herein" (Pet. Reply 11 (citing Ex. 1006 ¶¶ 62, 139) (emphasis omitted)), and that one of ordinary skill in the art could have relied on Chen's "simplest case," such artisans would have still been informed about the use of scalable blocks and their benefits. And even if Petitioner is correct that ordinarily skilled artisans could have implemented aspects of Chen without its central features, Petitioner has not demonstrated *why* they would jettison features that are disclosed as useful.

[5] We note that Petitioner filed a supplemental Declaration by Dr. McDaniel (Ex. 1031), but it did not address the nature of scalability layers in Chen.

Similarly, Petitioner argues that the FEC aspects of Chen are also optional and that the embodiment highlighted by Patent Owner is exemplary but not required, as Chen provides that "[t]here are many variations of the [n]o-FEC method and the FEC method." Pet. Reply 9–10 (quoting Ex. 1006 ¶ 534; citing Ex. 1006 ¶¶ 529–533). In response, Patent Owner argues that Chen discloses the non-FEC method to show why Chen believed its FEC method is superior. PO Sur-reply 10[6] (citing Ex. 1006 ¶ 530). Additionally, Petitioner argues that even if the "optional features were integral to Chen's invention (they are not)," the Petition relies on Chen's more general teachings, such that one of ordinary skill in the art would have been able to use Chen's known streaming techniques without the "optional embodiments." Pet. Reply 5.

We need not determine whether FEC processes are "integral" to Chen's system. Both parties acknowledge the disclosure of such FEC processes in Chen, and one of ordinary skill in the art would have considered them in the context of Chen's overall disclosure. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Labs.*, 874 F.2d 804 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 975 (1989).

Persons of ordinary skill in the art would have considered all of Chen; Petitioner's assertions that the Petition need consider only the very basic adaptive bitrate streaming aspects do not divorce the additionally disclosed aspects from influencing whether ordinarily skilled artisans would have

[6] We have not considered Patent Owner's Sur-reply arguments (on page 10) that rely on Exhibit 2025, which we discuss below with respect to Petitioner's Motion to Exclude.

adopted aspects of a secondary reference, like Lindahl. Contrary to Petitioner's assertions, we do not find that one of ordinary skill in the art "would no longer be able to use known streaming techniques without Chen's optional features" (Pet. Reply 5–6), but rather determine that those additional embodiments or features cannot be ignored in considering whether one of ordinary skill in the art would have had a reasonable expectation of success in the combination.

Petitioner also alleges that Patent Owner's argument that Lindahl's partial encryption cannot be incorporated into Chen's system due to incompatibilities with optional embodiments "engages in textbook bodily incorporation," which is irrelevant to obviousness. Pet. Reply 6. Again, however, it does not require bodily incorporation to consider all aspects of a reference's disclosure. Even a purely optional aspect of Chen could retard the likelihood that one of ordinary skill in the art would incorporate other aspects from Lindahl, where it is Petitioner's burden to argue and supply evidence that the combination would have had a reasonable expectation of success, even in view of the optional aspect. *See Intelligent Bio-Sys.*, 821 F.3d at 1367 ("It was [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." (citations and quotations omitted)).

Patent Owner also argues that implementing partial frame encryption together with independent scalable layers and forward error correction would have presented potentially insurmountable challenges beyond the skills of ordinary artisans. PO Resp. 13–18. Patent Owner cites to

testimony of Dr. Nielson, which details that the use of multiple scalable layers could compromise the encryption, in that it could allow a client with no encryption key to consume the encrypted portions of a media file. *Id.* at 13–15 (citing Ex. 2012 ¶¶ 64–66). Patent Owner also cites to additional testimony of Dr. Nielson, which details that implementing partial frame encryption in connection with FEC in Chen could allow for unencrypted portions being used to decrypt encrypted portions. *Id.* at 15–17 (citing Ex. 2012 ¶¶ 68–70).

Petitioner replies that Patent Owner's argument "assumes, contrary to known best practices, that FEC was applied *before* encryption and thus reveals information about unencrypted data," which was not how FEC was used in the art. Pet. Reply 12 (citing Ex. 1031 ¶¶ 10–12). Petitioner also casts doubt on Dr. Nielson's testimony that scalable layers could compromise the encryption, and other aspects related to scalability and full and partial encryption. *Id.* at 13–15 (citing Ex. 1024, 13:23–14:8, 17:22–18:10, 49:2–15, 52:17–53:13, 55:16–56:7; Ex. 1029, 64:21–65:4, 67:8–16, 72:18–24, 81:2–11, 91:15–92:16, 135:8–21, 155:2–8, 161:18–162:16, 176:22–177:22, 178:9–16, 180:5–181:19, 181:21–182:8, 186:24–187:24). Petitioner also cites to an additional prior art reference (Ex. 1030) for its teaching that partial frame encryption with layered video is possible. *Id.* at 14–15 (citing Ex. 1030, 3:35–42, 21:24–29, 23:36–24:18).

Patent Owner replies that Petitioner's new evidence is untimely and is unaccompanied by any expert testimony. PO Sur-reply 11. Patent Owner also argues that "Dr. Nielson's testimony that implementing partial frame encryption with Scalable Video Coding (SVC) would have been beyond a POSITA's skills" is unrebutted. *Id.* at 12 (citing Ex. 2012 ¶¶ 63–67). With

respect to the additional prior art reference, Patent Owner argues that it does not disclose that the use of layers and partial frame encryption occur in the same embodiments, that the same implementations could occur in Chen's different system, and that it does not demonstrate that one of ordinary skill in the art would have had a reasonable expectation of success in view of the challenges established. *Id.* at 12–13 (citing Ex. 2012 ¶ 67; Ex. 1030, 23:9–10; 23:37–38). With respect to Petitioner's assertions about Dr. Nielson's testimony, Patent Owner cites to Dr. Nielson's decades of expertise and experience in encryption and security as an industry consultant and professor at The University of Texas at Austin. *Id.* at 13–14 (citing Ex. 2012 ¶¶ 7–30; Ex. 1029, 24:4–27:22, 30:19–33:22).

Dr. McDaniel's new testimony (Ex. 1031) on use of FEC with partial frame encryption raises many issues, but ultimately is not persuasive. His testimony points out several potential issues with Dr. Nielson's arguments and conclusions (Ex. 1031 ¶¶ 10–12), but ultimately demonstrates the unpredictability of combining FEC with partial frame encryption. Both experts make credible arguments, but we need not resolve every argument to understand that there would have been a significant level of uncertainty in applying partial frame encryption to Chen's system with its disclosed scalable layers and FEC processes. Taking the testimony of both experts, we determine that there would have been significant doubt, by one of ordinary skill in the art, that Lindahl's partial frame encryption could be incorporated into Chen's disclosed system. That doubt directly contributes to our determination that Petitioner has not established that an ordinarily skilled artisan would have had a reasonable expectation of success in combining the cited aspects of Lindahl into Chen's system.

Further to that latter point, Patent Owner also argues that a person of ordinary skill in the art would not have been motivated to combine Chen and Lindahl without many of the disclosed features of Chen because that would have reduced efficiency, rather than improve it, per Petitioner's proffered rationale. PO Resp. 18–22. Patent Owner additionally argues that Petitioner has not demonstrated partial frame encryption, per Lindahl, would provide better protection than Chen's disclosed fragment level encryption. *Id.* at 19. Patent Owner also argues that eliminating independent scalable layers and FEC, in order to utilize partial frame encryption, would deteriorate Chen's performance and reduce its efficiency. *Id.* at 19–22 (citing Ex. 2012 ¶¶ 73–76). We agree with Patent Owner that these additional factors weigh against one of ordinary skill in the art making the combination with a reasonable expectation of success, as laid out in the Petition, namely integrating partial frame encryption aspects of Lindahl, into Chen's system that may utilize scalable layers and FEC processes.

Lastly, Patent Owner argues that the need to modify standard file formats would further counsel one of ordinary skill in the art against combining the references or doing so with a reasonable expectation of success. PO Resp. 22–24. Patent Owner argues that it is undisputed that to even attempt implementing partial frame encryption in Chen, it was required to implement modifications to the standard file formats utilized by Chen, citing deposition testimony of Dr. McDaniel. *Id.* at 23 (citing Ex. 2013, 35:25–36:12, 25:7–18, 34:11–14). Patent Owner argues that "it was beyond the skills of a POSITA to modify the standard file formats to implement partial frame encryption information within the file." *Id.* at 24 (citing Ex. 2012 ¶¶ 78–82, 71).

On this last point, Petitioner argues that a person of ordinary skill in the art would have had a reasonable expectation of success because Lindahl expressly discloses that partial encryption can be applied to popular file formats, such as the MPEG-4 format. Pet. Reply 15–16 (citing Ex. 1010, 3:2–6, 4:14–15, 5:63–6:9; Ex. 1007 ¶ 67; Ex. 1031 ¶¶ 3–4). Petitioner also argues that a person of ordinary skill in the art would have been able to use the MP4 and 3GPP file formats, where those formats include the ability to extend them because their architectures were extensible by design. *Id.* at 16 (citing Ex. 1031 ¶ 5). Petitioner also argues that "[t]he prior art is replete with explicit teachings to extend the 3GP, MP4, and other standard file formats, and a POSITA would not have found it technically challenging to do so." *Id.* at 19 (citing Ex. 2013, 27:9–20; Ex. 1031 ¶ 9).

We determine that we need not decide whether persons of ordinary skill in the art could and would have modified existing file formats to accomplish the goal of partial frame encryption. Both parties acknowledge that some types of modifications would be necessary to standard file formats in any resulting system of Chen and Lindahl. As Patent Owner points out, the stipulated person of ordinary skill in the art would know how to *use* standard file formats, but not necessarily be able to modify standard file formats. PO Sur-reply 22; *see* Section II.A. The requirement to modify standard file formats casts significant doubt on the efficacy of combining aspects of Lindahl into Chen's system, also considering the potential loss of interoperability with other devices, as pointed out by Patent Owner. PO Sur-reply 22. That doubt further contributes to our determination that Petitioner has not established an ordinarily skilled artisan would have had a reasonable

expectation of success in combining the cited aspects of Lindahl into Chen's system.

Overall, taking into account the disclosed DRM methods in Chen, the aspects of independent scalability layers and FEC disclosed by Chen, the challenges of incorporating Lindahl's partial frame encryption into a system like Chen's with its preferred structures for efficiency, and the need to modify standard file formats, we are not persuaded that one of ordinary skill in the art would have had a reasonable expectation of success in combining Chen, Lindahl, and Hurst to arrive at a system that renders claims 1–24 obvious.

6. Summary

We determine that Petitioner has not shown by a preponderance of evidence that claims 1–24 would have been obvious over Chen, Lindahl, and Hurst.

III. PETITIONER'S MOTION TO EXCLUDE

Petitioner filed a motion (Paper 42, "Mot.") to exclude Exhibits 2016–2021 and 2025, as well as paragraphs 54–82 of Exhibit 2012. Mot. 1. Patent Owner filed an Opposition to Petitioner's Motion (Paper 44, "Opp."), and Petitioner filed a Reply in support of its Motion (Paper 45, "Reply"). Petitioner, as the "moving party," "has the burden of proof to establish that it is entitled to the requested relief." 37 C.F.R. § 42.20.

A. Exhibit 2012

With respect to Exhibit 2012, Dr. Nielson's declaration, Petitioner asserts that paragraphs 54–82 should be excluded because they are conclusory and apply the wrong legal standard. Mot. 2–4. The cited paragraphs of Dr. Nielson's declaration discuss how Chen improves its

latency, user experience and efficiency through features that are incompatible, or beyond the skills of a person of ordinary skill in the art to implement, with partial frame encryption. See Ex. 2012 ¶¶ 54–82. Petitioner asserts that Dr. Nielson did not consider the prior art and did not apply a presumption that a person of ordinary skill in the art is presumed to be aware of all pertinent prior art. *Id.* Also with respect to Exhibit 2012, Petitioner asserts that paragraphs 54–77 should be excluded because Dr. Nielson's testimony lacks a sufficient factual basis and he failed to disclose the underlying facts and data used to form his opinions. *Id.* at 4–7. Petitioner asserts that Dr. Nielson does not consider video encoding to be one of his areas of expertise and indicated that he may have looked up materials to provide his opinions, but was unable to identify the materials that form the basis for his opinions. *Id.*

Patent Owner responds, with respect to Exhibit 2012, that the motion to exclude should be rejected "because it relates to the weight of the evidence, not its admissibility." Opp. 1. Patent Owner also argues that Petitioner's argument that Dr. Nielson did not consider Exhibit 1016 is unavailing because "the AVI file format is not one of the file formats disclosed as compatible with" Chen. *Id.* Additionally, Patent Owner argues that "video encoding" is not included in the stipulated-to definition of a person of ordinary skill in the art, and that Petitioner failed to query Dr. Nielson about his areas of expertise. *Id.* at 2–3.

In reply, Petitioner contends that "[t]he problem is that Dr. Nielson formed his opinions on file formats – a subject in which he does not consider himself an expert – without looking to *any* prior art on file formats." Reply 1. As such, Petitioner asserts that Dr. Nielson "applied the wrong

legal standard for his opinions on file formats." *Id.* Petitioner also argues that Dr. Nielson "cites no factual basis for his scalable video opinions but relied on materials that he could not identify." *Id.* at 2.

With respect to Exhibit 2012, we agree with Patent Owner that the objection to the specific portions of Dr. Nielson's declaration, namely paragraphs 54–82, relate to the proper weight to give to his testimony and not to its admissibility. Expert witnesses may testify as to hypothetical scenarios and may base opinion on information from others, with any flaws in data or factual assumptions going to the weight of the evidence, not admissibility. *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1298 (Fed. Cir. 2015); *see also Corning Inc. v. DSM IP Assets B.V.*, IPR2013-00053, Paper 66 at 19 (PTAB May 1, 2014) ("[T]he Board, sitting as a non-jury tribunal . . . is well-positioned to determine and assign appropriate weight to the evidence presented in this trial."). In this case, the fact that Dr. Nielson may have applied a different presumption of what one of ordinary skill in the art would have considered would affect the proper weight to give his testimony, not its admissibility. We agree with Patent Owner to the extent that Dr. Nielson explained as follows: "[M]y analysis of the POSITA in my Declaration is correct based on my knowledge of POSITA at that time. I don't think that [Ex. 1016], even if they were aware of it, would necessarily change my opinion." Opp. 2 (second alteration in original) (quoting Ex. 1029, 229:4–9). Assuming, as Petitioner argues, that this is the wrong standard to be applied, it would still go to the weight that should be accorded such testimony and not whether it should be excluded. For these reasons, we deny Petitioner's motion to exclude paragraphs 54–82 of Exhibit 2012.

B. Exhibits 2016–2021

With respect to Exhibits 2016–2021, Petitioner asserts that Exhibits 2016–2020 have not been authenticated, that several are webpages that may be unreliable, and that a declaration by Patent Owner's counsel (Ex. 2021) attempting to authenticate these exhibits is not based on first-hand knowledge and relies on hearsay statements. Mot. 7–10. Petitioner also asserts that Exhibits 2016–2020 contain inadmissible hearsay and lack relevance. *Id.* at 10–11. Petitioner further asserts that statements in Exhibits 2016–2021 "contain impermissible opinion testimony that is not rationally based on the witness's perception or personal knowledge of the matter and instead is based on scientific, technical, or other specialized knowledge." *Id.* at 11–12.

Patent Owner responds, with respect to Exhibits 2016–2020, that the exhibits are admissible as evidence relied upon by Patent Owner's expert, irrespective of objections to the exhibits themselves. Opp. 4. Patent Owner notes that "Petitioner does not attempt to exclude Dr. Nielson's testimony relying on these exhibits," and thus "has forfeited any argument that he is relying improperly on these [e]xhibits." *Id.* (citing Mot. 2–7). Patent Owner also argues that these exhibits are authenticated and are self-authenticating, are not inadmissible hearsay, and are not offered as opinion testimony. *Id.* at 5–12. In reply, Petitioner contends that those exhibits have not been authenticated, are not self-authenticating, and are hearsay. Reply 2–3.

As noted by Patent Owner, Petitioner does not challenge Dr. Nielson's testimony based on these exhibits. Nor does Petitioner argue that it was unreasonable for Dr. Nielson to rely upon these exhibits, even if the exhibits are inadmissible. Thus, even if we were to exclude the exhibits,

Dr. Nielson's testimony thereon is still before us for consideration. *See Wi-Lan Inc. v. Sharp Elecs. Corp.*, 992 F.3d 1366, 1375–76 (Fed. Cir. 2021) (discussing admissibility of expert testimony based on inadmissible evidence). Although we do not explicitly rely on each of the challenged exhibits, we do rely upon Dr. Nielson's testimony. Therefore, for our purposes, there is no substantive difference whether we exclude these exhibits and consider Dr. Nielson's testimony as compared to whether we do not exclude these exhibits while considering Dr. Nielson's testimony. Accordingly, because Dr. Nielson's testimony relying on Exhibits 2016–2020 is unchallenged, Petitioner's motion to exclude these exhibits is dismissed as moot. We, therefore, also determine that Petitioner's motion to exclude Exhibit 2021, a declaration by Patent Owner's counsel regarding these exhibits, is moot and thus, dismissed.

C. Exhibit 2025

With respect to Exhibit 2025, Petitioner asserts that it constitutes new evidence prohibited for Sur-reply under 37 C.F.R. § 42.23(b). Mot. 12–13. Petitioner also requests that portions of the Sur-reply that rely on the improper new evidence be stricken. *Id.* at 13. We note that Patent Owner's Sur-reply explicitly cites to Exhibit 2025 only on pages 10 and 15 thereof. Additionally, Petitioner argues that Exhibit 2025 should be excluded because it has not been authenticated, contains inadmissible hearsay, lacks relevance, and contains improper opinion. *Id.* at 13–15.

Patent Owner responds that Exhibit 2025 "was introduced and used during deposition of Petitioner's expert." Opp. 12 (citing Ex. 2026, 21:9–26:14). Patent Owner contends that "'transcripts' include exhibits to the deposition." *Id.* (citing Federal Rule of Civil Procedure ("Fed. R. of Civ.

P.") 30(f)(2)). Patent Owner also contends that Petitioner incorrectly claims that "it was deprived of the opportunity to 'present competing evidence, direct testimony,'" because Petitioner was able to present testimony during the deposition of Petitioner's own expert, but chose not to do so. *Id.* at 13 (quoting Mot. 13). Patent Owner also contends that Exhibit 2025 is authenticated, is not inadmissible hearsay, and is not offered as opinion testimony. *Id.* at 13–15.

In reply, Petitioner contends that Fed. R. of Civ. P. 30(f)(2), upon which Patent Owner relies, "only applies 'on a party's request'" to have documents attached, and no such request was made. Reply 3. Petitioner also contends that the Federal Rules of Evidence and not Civil Procedure apply to PTAB proceedings and that Exhibit 2025 was filed as a separate exhibit from the transcript (Ex. 2026). *Id.* Petitioner reiterates that 37 C.F.R. § 42.23(b) "prohibit[s] new evidence on Sur-reply, other than the deposition transcript itself," and is prejudicial because Petitioner had no opportunity to address Patent Owner's mischaracterizations. *Id.* at 3–4. Petitioner also asserts that Exhibit 2025 was not served before the deposition itself, such that on-the-fly redirect does not satisfy the need for an opportunity to properly evaluate the exhibit. *Id.* at 4–5. Petitioner also asserts that it objected during the deposition and subsequently upon service. *Id.* at 5 (citing Ex. 2026, 22:8–10; Paper 41).

We note that 37 C.F.R. § 42.23(b) specifies, in relevant part, that "[a] Sur-reply may only respond to arguments raised in the corresponding reply and may not be accompanied by new evidence other than deposition transcripts of the cross-examination of any reply witness." 37 C.F.R.

§ 42.23(b). The Consolidated TPG repeats the above-quoted language of the rule and also explains that

> [s]ur-replies should only respond to arguments made in reply briefs, comment on reply declaration testimony, or point to cross-examination testimony. As noted above, a sur-reply may address the institution decision if necessary to respond to the petitioner's reply. This sur-reply practice essentially replaces the previous practice of filing observations on cross-examination testimony.

Consolidated TPG at 73–74. Accordingly, Rule 42.23(b) provides a blanket prohibition on a patentee filing exhibits with a Sur-reply, as Patent Owner has done here.

The next question for us, as presented by Patent Owner's arguments, is whether Petitioner was required to object to the exhibits under 37 C.F.R. § 42.64(a) during Dr. McDaniel's second deposition. Rule 42.64 delineates between two types of evidence—"Deposition evidence" and "Other evidence." Objections to the admissibility of deposition evidence must be made during the deposition. 37 C.F.R. § 42.64(a). Notably, the Rule further states that "[e]vidence to cure the objection must be provided during the deposition, unless the parties to the deposition stipulate otherwise on the deposition record." *Id.* Objections to the admissibility of other evidence (i.e., evidence other than deposition evidence) after trial has been instituted must be filed within five business days of service of the evidence to which the objection is directed. 37 C.F.R. § 42.64(b)(1). And, the Rule provides that "[a] party relying on evidence to which an objection is timely served may respond to the objection by serving supplemental evidence." 37 C.F.R. § 42.64(b)(2).

In light of the procedures set forth above and the facts presented here, it would not make sense to require Petitioner to raise an objection under

Rule 42.23(b) during Dr. McDaniel's second deposition. Specifically, this portion of Rule 42.23(b) specifies what evidence may and may not accompany a Sur-reply. Dr. McDaniel's second deposition was held on April 5, 2021 (Ex. 2026, 1), and Patent Owner filed Exhibit 2025 with its Sur-reply on April 21, 2021. To find as Patent Owner requests, Petitioner would be required to object to Patent Owner filing the exhibit before Patent Owner actually filed the exhibit. That would not make sense. Accordingly, we determine that Petitioner was not required to object to Patent Owner's filing *before* Patent Owner filed. Thus, the objection was not waived.

Additionally, we do not find it in the interests of justice to maintain Exhibit 2025 in the case file. We disagree that the exhibit provides context for Dr. McDaniel's deposition testimony because Dr. McDaniel testified that he had not prepared for the deposition using the document. *See, e.g.*, Ex. 2026, 22:14–21 (testifying that he had probably seen Exhibit 2025 before but "it's probably been decades"). Even though Petitioner filed additional exhibits with its Reply along with a declaration from Dr. McDaniel, Patent Owner had an opportunity to respond (with its Sur-reply) and depose Dr. McDaniel (which Patent Owner did). In contrast, Petitioner does not have an opportunity to respond to new evidence provided with Patent Owner's Sur-reply.

Further, we have not considered the portions of Patent Owner's Sur-reply on pages 10 and 15 that rely upon Exhibit 2025, as identified in Paper 41 (Petitioner's Objections to Patent Owner's Evidence).

Accordingly, we grant Petitioner's Motion to Exclude with respect to Exhibit 2025 pursuant to 37 C.F.R. § 42.23(b).[7]

IV. CONCLUSION

For the reasons discussed above, Petitioner has not demonstrated, by a preponderance of the evidence, that claims 1–24 are unpatentable. Additionally, we grant in part Petitioner's Motion to Exclude and exclude Exhibit 2025, as described above; deny Petitioner's Motion to Exclude with respect to Exhibit 2012; and dismiss as moot Petitioner's Motion to Exclude with respect to Exhibits 2016–2021.

Our conclusions regarding the Challenged Claims are summarized below:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–24	103	Chen, Lindahl, Hurst		1–24
Overall Outcome				1–24

V. ORDER

For the reasons given, it is:

ORDERED that Petitioner has failed to establish based on a preponderance of evidence that claims 1–24 of U.S. Patent No. 10,225,588 B2 are unpatentable as obvious under 35 U.S.C. § 103;

[7] In light of our determination, we need not also decide whether this exhibit (a) is properly authenticated, (b) contains inadmissible hearsay, or (c) contains improper judicial opinions. *See* Mot. 13–15.

FURTHER ORDERED that Petitioner's Motion to Exclude (Paper 42) is granted in part with respect to Exhibit 2025, denied in part with respect to Exhibit 2012, and dismissed in part with respect to Exhibits 2016–2021;

FURTHER ORDERED that Exhibit 2025 is excluded from the record; and

FURTHER ORDERED that because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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