

IN THE 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 No. IPR2020-00558

U.S. Patent 10,225,588

PETITIONERS' REPLY

TABLE OF CONTENTS

I.	The Motivation to Combine	3
A.	DivX misrepresents the Petition’s motivation to combine.	3
B.	The Petition relies on Chen’s basic teachings of adaptive bitrate streaming—not its optional embodiments.	5
C.	Scalable layers, FEC, and fragment-level encryption are optional embodiments.	9
D.	DivX’s incompatibility arguments are incorrect.....	12
E.	A POSITA would have known how to modify standard file formats.....	15
II.	Ground 1 teaches limitation [11].....	20
A.	DivX is contradicted by the intrinsic record, including DivX’s prior representations to the USPTO.	20
B.	The patentee could have drafted the claims as DivX now desires, but did not.....	21
C.	Locating encryption information is not the focus of the ’588 patent.	23
III.	The combination teaches “a set of common keys.”.....	23
A.	A POSITA would have been motivated to apply Hurst’s teachings.....	24
B.	A POSITA would have been motivated to apply Lindahl’s teachings.....	27
IV.	Conclusion	29

Rather than address the combination of Ground 1, DivX attacks the references individually, relies on mischaracterizations, and attacks *optional embodiments* that were not relied upon by the Petition. The Federal Circuit has prohibited these lines of attack. The Board has rejected similar bodily incorporation arguments from DivX's counsel in prior IPR proceedings and should do so here. DivX contests limitation [1e] and [11], but DivX's arguments are wrong on the facts and contrary to law.

I. The Motivation to Combine

The Petition combines adaptive bitrate streaming ("ABS") with known encryption techniques, devoting over 10 pages to explain how and why the teachings would be combined. Pet., 17-22, 28, 31-35. For example, the encryption techniques taught by Lindahl and Hurst were commonly used with ABS and widely recognized as complementary aspects of streaming video.¹ Pet., 17, 21-22. All three references teach streaming media over the Internet, and the prior art provides express motivation for the combination. Pet., 18-20.

A. DivX misrepresents the Petition's motivation to combine.

The Petition provides ample motivation to combine, which DivX ignores, choosing to misrepresent the Petition rather than address its positions. According

¹ Dr. Nielson admitted ABS and partial encryption were known in the art. EX1029, 188:2-192:7, 192:17-194:21, 200:21-201:4.

to DivX, the Petition “proffers only a single sentence statement” of the benefits of combining Lindahl with Chen, quoting an explanation that it “address[es] piracy concerns and improve[s] efficiency.” POR, 4. But the Petition includes far more than a sentence—DivX omits the preceding and subsequent paragraphs.

The preceding paragraph explains how “Lindahl’s partial encryption teachings reduce computational load” by encrypting less data while “providing a balanced level of security that was well-suited for video streaming.” Pet., 18. Following the cited “single sentence,” the Petition explains how Chen’s adaptive streaming teachings optimize the bitrate/bandwidth (Pet., 18-19) and subsequent paragraphs explain express teachings for the combination. Pet., 19-20.²

DivX raises incorporation by reference, but its arguments rely on its “single sentence” mischaracterization. Moreover, DivX’s argument is gamesmanship. DivX complains that the Petition does not include enough explanation from Dr. McDaniel’s declaration, but in co-pending IPR2020-00511, DivX complained that the Petition included *too much* of Dr. McDaniel’s declaration. *See Netflix, Inc. v.*

² DivX has the combination backwards, arguing against modifying Lindahl to “create multiple alternative streams.” POR, 48; EX2012, ¶113. But the Petition starts with Chen’s alternative streams (for ABS), applying Lindahl’s partial encryption teachings to Chen. Pet., 17-22, 28-35.

DivX, LLC, IPR2020-00511, Paper 6 at 62-64 (PTAB Dec. 2, 2020). DivX shifts its positions to match its litigation convenience.

B. The Petition relies on Chen’s basic teachings of adaptive bitrate streaming—not its optional embodiments.

The Petition combines Chen’s teaching of adaptive streaming over HTTP—which the ’588 patent admits was prior art—with Lindahl and Hurst. Pet., 18; *see* EX1001, 2:5-7. DivX does not dispute that ABS was well-known, or that Chen teaches it.

The Petition does *not* rely on Chen’s *optional embodiments* that add scalable layers or Forward Error Correction (“FEC”). Chen expressly describes these embodiments as optional. *See infra* §I.C. Nonetheless, DivX argues they are “integral” to Chen and must be included in the combination. POR, 11.

DivX’s argument (the entirety of the POR §II) contradicts Federal Circuit precedent and invites error. Even if optional features were integral to Chen’s invention (they are not), the Federal Circuit has held that “[a] reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *CRFD Research, Inc. v. Matal*, 876 F.3d 1330, 1348-49 (Fed. Cir. 2017); *In re Applied Materials*, 692 F.3d, 1289, 1298 (Fed. Cir. 2012); *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985). Here, the Petition relies on Chen’s teachings of ABS, not its optional embodiments. Even if those embodiments were improvements, the notion that a POSITA would no

longer be able to use known streaming techniques without Chen’s optional features is contrary to both law and fact.

DivX argues that Lindahl’s partial encryption cannot be incorporated into “Chen’s system” due to alleged incompatibilities with optional embodiments. POR, 3. But those optional embodiments are not relevant to the Grounds or challenged claims. DivX engages in textbook bodily incorporation, which the Federal Circuit has held to be “basically irrelevant” to obviousness. *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *Allied Erecting and Dismantling Co, Inc. v. Genesis Attachments, LLC*. 825 F.3d 1373, 1381. (Fed. Cir. 2016); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference....”).

Despite having raised the same type of bodily incorporation arguments in a previous IPR, where the Board explained it was improper, DivX’s lead counsel again asks the Board to apply bodily incorporation in this proceeding, contrary to Federal Circuit precedent. *See Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-00366, Paper 41 at 23-24, 31 (PTAB Apr. 9, 2019) (“Patent Owner attempts to defeat the teachings of Blake through bodily incorporation...”). Once again, those arguments should be rejected.

DivX contends the optional features—scalable layers and FEC—would be inoperable when combined with partial encryption. But even if this were true, the Federal Circuit has rejected similar arguments that “the resulting combination would be inoperable,” holding such arguments “misapprehend[] the nature of the obviousness inquiry.” *In re Chevalier*, 500 F. App’x 932, 934 (Fed. Cir. 2013). This is particularly true when the alleged implementation incompatibilities stem from features that are not required by the claims or the combination. *See Packers Plus Energy Services Inc. v. Baker Hughes Oilfield Operations, LLC*, F. App’x 1083, 1089 (Fed. Cir. 2019) (nonprecedential) (rejecting argument that one reference’s cup packers “would be unsuitable for” the combination, because “***the claims do not require a particular type of packer...***”)³; *Smith & Nephew, Inc. v. Rea*, 721 F.3d 1371, 1381 (Fed. Cir. 2013) (“[A]n unclaimed and undisclosed feature ... cannot be the basis for finding [a] patent to be non-obvious over the prior art.”).

DivX also argues that adding partial encryption to Chen would be less effective than Chen alone because omitting scalable layers and FEC would allegedly reduce performance. But the Federal Circuit holds that “it is irrelevant whether the prior art combination would be less effective than one reference

³ All emphasis added unless stated otherwise.

alone.” *Slot Speaker Technologies, Inc. v. Apple Inc.*, 680 F. App’x 932, 940 (Fed. Cir. 2017); *see also Allied Erecting*, 825 F.3d 1373 at 1381 (“Although modification... may impede the... functionality disclosed by [the reference], [a] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”). Even if Chen’s optional embodiments improved on some facet of streaming, removal of those features would not make the combination inapt for obviousness purposes. *See Mouttet*, 686 F.3d 1322 at 1334; *In re Inland Steel Co.*, 265 F.3d 1354 (Fed. Cir. 2001) (“Thus, Irie’s recitation of the benefits of the preferred procedure, which includes annealing, does not undercut Irie’s teaching that adding antimony is useful even in the absence of annealing.”).

DivX argues that Chen already teaches an encryption regime (it does not) and that Lindahl’s partial encryption has not been shown to be superior. POR, 3. But it would be improper under Federal Circuit case law to require proof that Lindahl’s partial encryption is superior to other known encryption techniques. *See Novartis Pharm. Corp. v. W.-Ward Pharm. Int’l Ltd.*, 923 F.3d 1051, 1059 (Fed. Cir. 2019) (“[O]ur case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.’ *It is thus improper to require [the*

defendant] to prove that a person of ordinary skill would have selected everolimus over other prior art treatment methods.”).

C. Scalable layers, FEC, and fragment-level encryption are optional embodiments.

DivX argues scalable layers are “integral” to Chen. But Chen states otherwise, explaining that they are used “[i]n some embodiments[.]” EX1006, ¶[0027]. The scalable layer embodiments modify “known techniques of a block request streaming system” EX1006, ¶[0386]. And Chen teaches known, basic ABS: its “simplest case” stores “*Alternative* Representation[s]” as separate streams. EX1006, ¶[0070]. Chen’s streams are *alternatives* to each other (*see id.*, Fig. 5), rather than enhancements of each other that are used together in scalable layers.

Regarding FEC, DivX points to an exemplary embodiment involving cooperative HTTP/TCP requests (POR, 12 (citing EX1006, ¶¶[0529-0533])), which Chen describes as optional (EX1006, ¶[0527] (“A receiver *may* employ multiple concurrent cooperative HTTP/TCP requests”)) and explains using an example with 5 concurrent HTTP/TCP connections. *Id.*, ¶¶[0527-0533], Fig. 24:

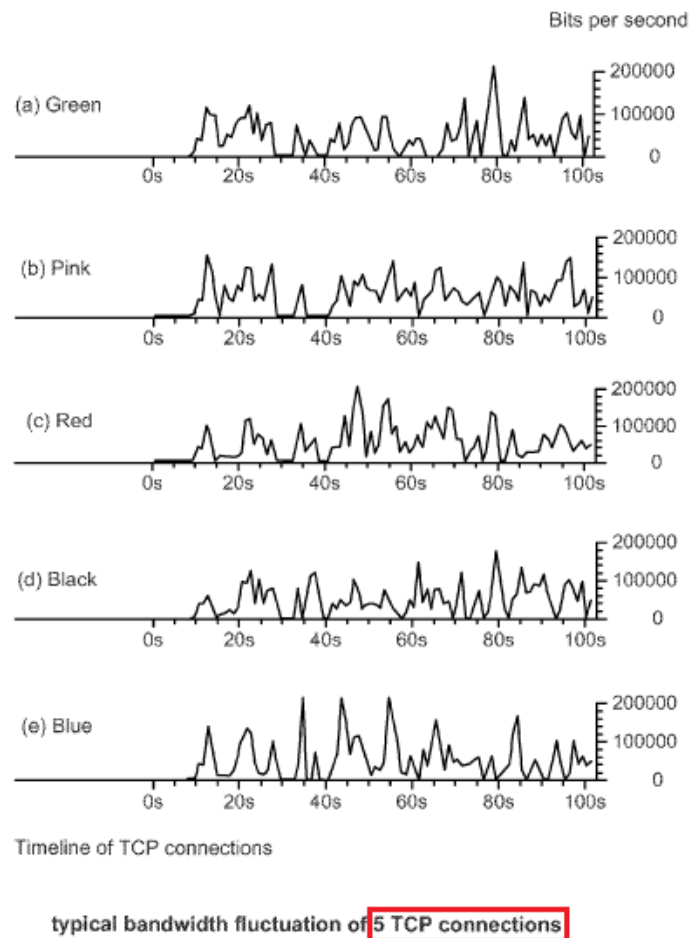


FIG. 24

DivX argues that FEC “improved performance by up to 70%” but fails to mention that improvement used 5 concurrent TCP connections (*see* POR, 20; EX1006, ¶[0533]) which can increase bandwidth consumption by 25%. EX1006, ¶[0532] (requiring 200 kb for no-FEC and 250 kb for FEC). Thus, Chen teaches benefits and drawbacks to FEC and, more importantly, *Chen explains that FEC is not required*. EX1006, ¶[0534] (“There are many variations of the No-FEC method and the FEC method.”).

For all its attempts to characterize scalable layers and FEC as somehow integral, DivX never cites an embodiment in Chen that includes both features. *See* POR, 13-18. That is because Chen teaches both as optional modifications to its base ABS teachings. Indeed, Chen teaches that “a viable system ***need not include all of the features described herein***, as some applications might provide a suitably satisfying experience with less than all of the features described herein.” EX1006, ¶[0062]. Additionally, Chen teaches that “[a] number of features can be used ***or not***, in a block-request streaming system...” based on application considerations. EX1006, ¶[0139].

DivX also misrepresents Chen’s encryption discussion, contending that “Chen discloses fragment-level encryption.” POR, 6 (citing EX1006, ¶[0522]). But this alleged disclosure is part of a hypothetical exercise that Chen uses “to simplify the discussion” for concurrent HTTP/TCP requests. EX1006, ¶[0522]. DivX cites a portion of a sentence as if it were fact (underlined below), while omitting the critical context that it is part of a hypothetical exercise:

However, ***to simplify this discussion***, suppose ideally that all connections are proceeding in parallel ***Suppose further*** that the media data structure is such that playout of a block can be done when the entire block is available ... ***e.g.***, due to the structure of the underlying video encoding, ***or because encryption is being employed to encrypt each fragment or block separately, and thus the entire fragment or block needs to be received before it can be decrypted.***

Thus, *to simplify the discussion below, we assume* that an entire block needs to be received before any of the block can be played out.

EX1006, ¶[0522]. Even within this hypothetical, fragment-level encryption is just one possibility—it is not required. *Id.*

DivX alters Chen’s teachings through selective quotation and omission. It would be improper to limit Chen to an embodiment, particularly a hypothetical or optional embodiment. *See Applied*, 692 F.3d at 1298; *supra* §I.B.

Based on this one sentence, DivX argues that Chen should be limited to *fragment*-level encryption. POR, 8. However, Chen expressly teaches that it is not so limited. EX1006, ¶[0077] (“One skilled in the art can apply embodiments of the present invention to other types of source block structures, e.g., a source block may be a portion of a fragment, or encompass one or more fragments or portions of fragments.”). Nor is Chen limited to a passing reference to DRM in Fig. 9a. Rather, by teaching that DRM may be used without requiring any particular implementation, Chen provides express motivation to combine its teachings with known DRM techniques, such as those taught by Lindahl and Hurst. Pet., 18.

D. DivX’s incompatibility arguments are incorrect.

DivX argues that FEC compromises the security of partial encryption. However, DivX assumes, contrary to known best practices, that FEC was applied *before* encryption and thus reveals information about unencrypted data. EX1031, ¶10. This is not how FEC was used in the art. *Id.*, ¶¶11-12.

FEC was applied *after* encryption because “[a]pplying FEC to data which already has been partially encrypted ***does no harm*** with respect to the data security.” EX1023, 217. This was a well-known and well-established practice (EX1031, ¶12), which Dr. Nielson agreed “could potentially be fine.” EX1029, 154:13-21, 150:10-152:20.

Additionally, DivX speculates that scalable layers “***could*** compromise the encryption.” POR, 13. DivX relies exclusively on Dr. Nielson, who cites nothing for these opinions other than high-level discussions in Chen. *See* EX2012, ¶¶64-66. Therefore, Dr. Nielson relies on his memory⁴ for details of scalable video layers—a rather niche topic—even though he doesn’t recall ever working with it before (EX1029, 155:2-8) and does not consider video encoding to be one of his areas of expertise (he is more focused on security and networking). EX1024, 13:23-14:8, 17:22-18:10; EX2012, Exhibit A.

Dr. Nielson’s scalable layer opinions are based on principles of “motion compensation” including “B and P” frame types. EX2012, ¶¶59, 66. But he did not

⁴ Dr. Nielson testified that everything he reviewed is cited in his Declaration or materials considered (which he did not provide). EX1029, 13:17-25, 14:14-15:16. Contradicting this testimony, Dr. Nielson later admitted he may have looked up materials on layered video but does not remember what they were. EX1029, 155:13-156:5 (“Q. Are those reference materials cited in your Declaration or Materials Considered? A. No.”), 156:13-17.

know “[w]hat information is needed to perform motion compensation...” EX1029, 91:15-92:16. In H.264, motion compensation (e.g., prediction mode) is based on slices and macroblocks. *See* EX1025, ¶¶[0036-0037]. Dr. Nielson does not know what a slice is (EX1029, 81:2-11, 135:8-21) (“Even our expert... was at a loss about what those terms are... ‘slices.’”). On January 13, a month after he filed his declaration (December 7), Dr. Nielson could not remember (a) what a macroblock is, (b) the difference between B and P frames, or (c) other basic video encoding concepts. *See* EX1024, 49:2-15, 52:17-53:13, 55:16-56:7;⁵ EX1029, 72:18-24, 64:21-65:4, 67:8-16.

Dr. Nielson opined that temporal scalability includes “extra information” where “entire frames can be lost without significant drops in quality...” EX2012 ¶66. But he walked back this opinion (EX1029, 178:9-16 (“I don’t know what the results in the quality would be.”)) and could not identify any alleged “extra information.” EX1029, 161:18-162:16, 176:22-177:22, 180:5-181:19. He does not know how the layers are created. *Id.*, 186:24-187:24.

Citing nothing in support, Dr. Nielson opines that layered video “would generally need to be full encryption, not partial encryption.” EX2012 ¶67. However, the prior art contradicts his opinions by teaching partial encryption with

⁵ Dr. Nielson looked up these concepts after his January deposition—weeks *after* he filed his Declaration. EX1029, 72:3-16, 74:10-75:3.

layered video. EX1030, 3:35-42 (“Using layered compression, the base layer... can be used to encrypt a compressed layered movie stream. By using such a layered subset of the bits, the entire picture stream can be made unrecognizable...”), 21:24-29 (“The base layer is the key to decoding a viewable picture. Thus, only the temporal and spatial base layer need be encrypted... *The enhancement layers, both temporal and spatial, are of no value without the decrypted and decompressed base layer.*”), 23:36-24:18 (“Further, an entire frame need not be encrypted...”). Dr. Nielson does not know what base and enhancement layers are. EX1029, 181:21-182:8.

E. A POSITA would have known how to modify standard file formats.

DivX argues that partial encryption in Chen would require changes to the MP4 or 3GPP file formats. POR, 22. The prior art provides express motivation to partially encrypt frames while *using the MP4 and 3GPP file formats* for “adaptive streaming.” See EX1010, 5:63-6:9 (“Selective encryption may further include selectively *encrypting at least a portion of an I-frame, P-frame, B-frame...*”), 4:14-15 (“A non-limiting and non-exhaustive list of examples of a container is: MPEG2-TS, FLV, H.264, MOV, *MP4, 3GP*, and ASF.”), 14:51-55 (“...adaptive streaming...”), 3:2-6; EX1031, ¶3.

Moreover, Lindahl teaches that its partial encryption can be applied to popular file formats, including the MPEG-4 format. EX1007, ¶[0067] (“The file

format is typically dependent on the type of media. ... Other suitable formats include ... *MPEG-4 format*.”). Therefore the prior art provides express motivation to combine. A POSITA would have had a reasonable expectation of success because it is taught by Lindahl and other references. *See* Pet., 17, 19-20; EX1031, ¶4; *see Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F. 3d 1376, 1385 (Fed. Cir. 2015) (“Here, because a person of skill in the art reading [the reference] would readily envisage the combination..., it would have been obvious to that person that these two could be combined with a reasonable expectation of success.”).

An express teaching, suggestion, and motivation is one of the classic rationales the Federal Circuit and Supreme Court have held to be sufficient for obviousness. *See Bayer Healthcare v. Watson Pharmaceuticals, Inc.*, 713 F. 3d 1369, 1376 (Fed. Cir. 2013) (“[T]he prior art’s direct recommendations... would have motivated one of ordinary skill in the art.”). Therefore, a POSITA would have been motivated and had a reasonable expectation of success in modifying standard file formats, if necessary. The Petition highlighted such teachings from Chen-924, which DivX chose to ignore. DivX cannot attempt to rebut this motivation for the first time on Sur-Reply.

A POSITA would have been able to use the MP4 and 3GPP file formats (EX1003, ¶68), which includes the ability to extend them because their architectures were extensible by design. EX1031, ¶5. This was a key feature—

3GPP and MP4 are both derived from the ISO base media file format. *See* EX1006 ¶¶[0119]; EX1003 ¶106. Chen explains that various specifications have been derived from the same ISO base file format. EX1006, ¶¶[0070]; EX1031, ¶5.

Multiple references teach modifying standard file formats for partial encryption, confirming a POSITA would have known how to do so. For example, Shi teaches modifying MPEG-1 to implement partial encryption on a modified video stream format. EX1017, 83. Shamoon teaches partially encrypting MPEG-4 files and modifying the MPEG-4 file format by adding a box containing keys and rules. EX1018, 22:7-45, 2:5-9 (“The digital bit stream includes content, which is encrypted at least in part...”); EX1031, ¶6.

Even DivX’s §102(b) prior art, published years before the ’588 patent, includes DRM information for the standard AVI file format⁶ for partial frame encryption. *See* EX1016, ¶¶[0169-0171] (“[T]he video chunks are only partially encrypted. Where partial encryption is used, the ‘DRM’ chunks contain a reference to the portion of a ‘video’ chunk that is encrypted...”); EX1029, 225:4-24, 226:19-25. This patent has been asserted by DivX, but its expert failed to consider it. *See* EX1029, 234:10-235:2. Applying an improper legal standard, Dr. Nielson failed to

⁶ Chen is not limited to a particular video codec or standard. EX1029, 43:18-44:3, 53:16-54:4.

presume that the POSITA is aware of all pertinent prior art. EX1029, 230:7-230:12.

Beyond encryption, various references teach modifying standard file formats, confirming that a POSITA would have known how to do so to suit their particular applications. For example, Frojdh teaches extending the 3GP video file format by adding a new box with a top-level file tree. *See* EX1020, 5:32-45, FIGS. 8, 9:

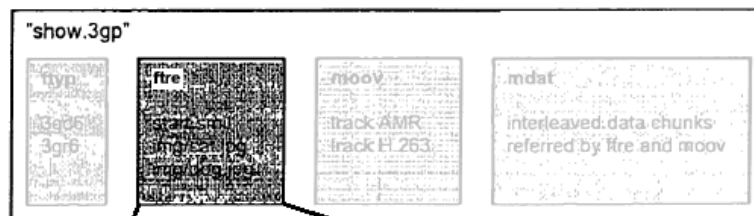


FIG. 8

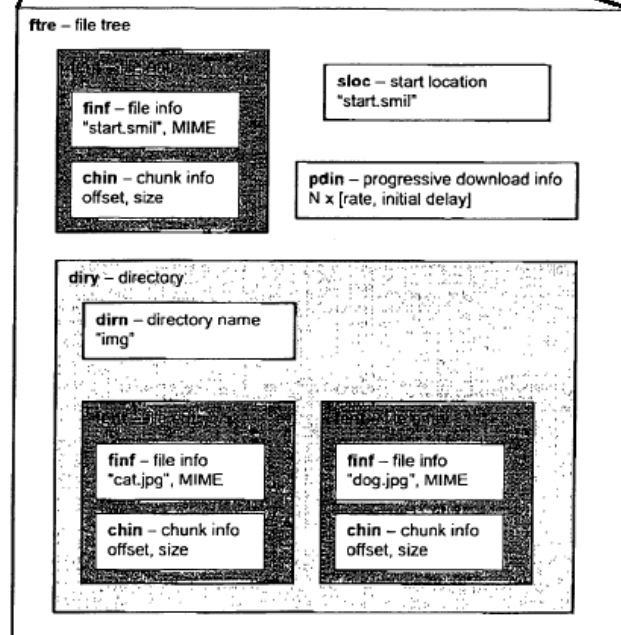


FIG. 9

For data security/watermarking, Xu taught modifying MPEG standards to embed “control information” in frames. *See* EX1021, Abstract. EX1031, ¶¶7-8.

DivX and Dr. Nielson argue that modifying file formats was beyond the skills of a POSITA but provide only a single argument in support: Dr. McDaniel’s declaration discussed the “use” of file formats without the word “modify.” POR, 23-24, EX2012, ¶¶78-82. DivX offers no other evidence or even argument in support of its allegations.

But as explained above, DivX’s reasoning misunderstands the extensible nature of file formats and Dr. McDaniel’s testimony. The 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. *See* EX2013, 27:9-20. For example, as Dr. McDaniel explains, modifying metadata or content data formats simply involved modifying encoding software (to write the data) and the playback software (to read it). A POSITA would have been capable of making such modifications. EX1031, ¶9. DivX’s argument—that a POSITA must only use existing file formats as they are—turns the POSITA into an automaton. *See KSR*

Intern. Co. v. Teleflex Inc., 550 US 398, 421 (2007) (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).⁷

II. Ground 1 teaches limitation [11].

DivX’s arguments for [11] depend on its proposed construction. DivX does not dispute that Ground 1 teaches limitation [11] under the Board’s construction at institution, which rejected DivX’s proposed construction. The POR reiterates that same proposed construction, which should once again be rejected.

The POR emphasizes embodiments that support its construction. However, as the Board noted, “although embodiments disclosed in the Specification of the ’588 Patent support Patent Owner’s more restrictive construction, *the same embodiments also support the more grammatically correct construction as well.*” ID, 30. DivX does not dispute or address this point.

A. DivX is contradicted by the intrinsic record, including DivX’s prior representations to the USPTO.

DivX argues that “every embodiment” of the specification requires “encryption information” to be *inside* the requested portions of the selected stream. POR, 27 (emphasis in original). This is not true. For the parent application of the ’588 patent, which shares an identical specification, DivX obtained claims where

⁷ In other contexts, Dr. Nielson acknowledged that Chen teaches modifying video standards for FEC. EX1029, 56:21-57:15 (“Chen ... suggests that it’s not going to stick with just the base implementation because it has to modify it.”).

the encryption (DRM) information is located in a top-level index file. *See* EX1026, 27:35-41 (“wherein *the top level index file* comprises ... a set of DRM information that identifies protected portions of the alternative streams of protected video.”); EX1029, 145:17-147:4. The top-level index file is separate from the requested portions of the selected stream (the video container files) and “contain[s] URIs for each of the Matroska container files.” EX1001, 9:38-43; EX1026, 9:30-37.

At institution, the Board held that the specification “suggests that information regarding ranges in the files need not come from the files themselves.” ID, 29. The intrinsic record reinforces the Board’s observation, confirming the claimed encryption information may come from the top-level index file, outside the video container files.

By obtaining claims directed to encryption information *outside* the requested portions of the selected stream, DivX represented to the USPTO that the ’588 specification encompasses such embodiments. Now, DivX takes the opposite position before the Board. DivX should not be allowed to contradict its prior representations to the USPTO, which undermine DivX’s proposed construction.

B. The patentee could have drafted the claims as DivX now desires, but did not.

DivX asks the Board to rewrite the claim, offering several examples how limitation [11] could be rewritten to require encryption information to be located inside the requested containers. POR, 32. Each example only illustrates how the

patentee could have made such a requirement clear but did not. DivX chose different language for the '588 patent where the natural reading includes no such requirement, reinforcing the fact that, during prosecution, DivX did not intend the convoluted interpretation it now advocates.

First, DivX inserts the verb “is” to connect a subject at the beginning with a clause at the end. POR, 32. Limitation [11] contains no such verb. Unlike DivX’s examples, the clause in question (“within the requested portions...”) does not begin with a verb that is performed by a subject earlier in the sentence. DivX could have used such a verb, as it now suggests, to make its new requirement clear: “locating encryption information that identifies encrypted portions of frames of video and is within the requested portions of the selected stream of protected video.” But DivX included no such language during prosecution.

Next, DivX suggests there is no way to make its new requirement clear. Ironically, DivX’s examples do just that—by adding “is” or by reversing the second and third clauses of [11]. *See* POR, 31. Therefore DivX is aware of multiple approaches but chose neither when drafting the claim.

Lastly, other patents in the '588 family include express limitations requiring the encryption (DRM) information to be *inside* the video container files. Claim 1 of a parent recites “write DRM information to each separate container file that identifies the encrypted portions of several encoded video frames...” EX1027,

26:59-65. Claim 1 of another parent recites “wherein each of the container files containing the alternative streams of protected video comprises... a set of DRM information that identifies encrypted portions of the video frames.” EX1028, 26:52-58. In other patents, DivX drafted claims with the limitation it now seeks to insert, but DivX omitted those limitations from the ’588 Patent. It would be improper to import them under the guise of claim construction.

C. Locating encryption information is not the focus of the ’588 patent.

DivX alleges that “locating encryption information within the requested portions of the stream is one of the central aspects of the ’588’s inventive system.” POR, 29. But DivX told a different story in district court, characterizing the alleged invention by the use of “common frame encryption keys” without discussing the location of encryption information. *See* EX1015, ¶224; Pet., 11; EX1003, ¶96.

III. The combination teaches “a set of common keys.”

The combination teaches this limitation two independent ways. Hurst teaches using the same key to encrypt alternative streams. Pet., 19. Lindahl teaches a global key that would have been obvious to use for low-security applications. Pet., 31.

A. A POSITA would have been motivated to apply Hurst's teachings.

Hurst teaches two options for encrypting alternative streams: use the same key for all streams, or different keys. EX1008, 18:66-19:8. The Petition explained several motivations for using the same key. First, it was one of two known approaches for ABS. *See* Pet., 35; *KSR Intern. Co. v. Teleflex Inc.*, 550 US 398, 421 (2007); *Google, LLC v. Koninklijke Philips N.V.*, Appeal No. 2019-1234 (Fed. Cir. January 6, 2020). Second, Chen teaches that, for ABS, access was often granted to alternate streams as a group, to switch between based on bandwidth conditions. EX1006, ¶¶[0063-0064]; EX1003, ¶116; Pet., 19. Hurst's teaching, of using the same key, aligned with the ABS usage model and allowed access to be granted to the alternate streams, as a group, by providing a single key. EX1006, ¶¶[0063-0064]; EX1003, ¶116; Pet., 19. This simplified DRM while making the system more portable to diverse network environments. EX1031, ¶16.

DivX admits that Hurst teaches the limitation (*see* POR, 52; ID, 23) but argues that Hurst teaches away by explaining a benefit to using different keys. As the Board noted, this does not amount to teaching away. ID, 23 (citing *Moultet*, 686 F.3d 1322 at 1333-34). Even if using different keys were better for some

applications,⁸ that does not make the first option—using the same key—inapt for obviousness. *See Mouttet*, 686 F.3d 1322 at 1334; *Bayer Pharma AG v. Watson Laboratories, Inc.*, 874 F. 3d 1316, 1327 (Fed. Cir. 2017) (“***When there are only two possible formulations and both are known in the art at the time***, the fact that there may be reasons a skilled artisan would prefer one over the other does not amount to a teaching away from the lesser preferred but still workable option.”); *In re Gurley*, 27 F.3d 551, 552–53 (Fed. Cir. 1994) (“A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product...”). Hurst itself teaches that “features, advantages, or similar language does not imply that all of the features and advantages that may be realized with the present invention should be or are in any single embodiment of the invention.” EX1008, 3:24-28.

DivX speculates that “using the same key and partial encryption ***could*** negatively impact security.” POR 54. Neither DivX nor its expert provide any further explanation or evidence. *Id.*; EX2012 ¶118. EX1031, ¶¶13-14. Based on

⁸ Hurst describes using different keys as an “alternative” implementation to support “standard” and “premium” user tiers. *See* EX1008 18:66-19:6. The Petition stated it is not relying on the embodiment with standard/premium tiers (*see* EX1008, 18:64-19:6; Pet., 20; EX1003, ¶125), and thus it was obvious to use the normal approach of using the same key.

this unexplained specter, DivX argues the Petition is “legally insufficient” because it gives “no explanation... how any benefits may outweigh the reduced security of using a single key...” relative to using different keys. POR, 55-56.

The Federal Circuit says otherwise. “A given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Allied Erecting*, 825 F.3d 1373 at 1381; *see also Mouttet*, 686 F.3d at 1334. The Board has recently rejected similar arguments from other patent owners that the benefits of a combination must outweigh alleged tradeoffs. *See Netflix, Inc. v. Realtime Adaptive Streaming, LLC*, IPR2018-01189, Paper 42 at 23-24 (PTAB Jan. 15, 2020).

Even if using the same key was less secure than the alternative, the Federal Circuit has held it is error to require proof that a POSITA would have selected the combination over other options in the prior art. “The proper inquiry is whether a person of ordinary skill would have been motivated to modify the prior art,” which is “answered affirmatively” when “a person of ordinary skill would have been motivated to pursue [an option] as *one of several potential ... options*.” *Novartis*, 923 F.3d at 1059-1060; *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004).

It is *undisputed* that using the same key was one of two known approaches for ABS, and Hurst expressly teaches it. Using the same key aligns with the known usage model for ABS where users are typically granted access to alternative

streams of a video as a group. Even if using the same key reduced security, it still would have been sufficient for many partial encryption applications, which often had lower security requirements. *See* EX1003 ¶¶84, 121-122; EX1031, ¶¶14-17; EX1017, 83.

B. A POSITA would have been motivated to apply Lindahl’s teachings.

Lindahl teaches that “the *media file* can then be decrypted” using the cryptographic key or “*the global key*.” EX1007, ¶[0066].⁹ A global key would be adequate for data that is “not that sensitive” (EX1007, ¶[0048]), for example, when some level of content protection is desired but piracy is less of a concern. EX1003, ¶145. When combined with Chen, it would have been obvious to encrypt/decrypt Chen’s media (the alternative streams) with Lindahl’s global key for less-sensitive content, including marketing or promotional videos, non-profit materials, and academic materials. *Id.*; Pet, 31.¹⁰

⁹ DivX argues “common knowledge” cannot be used to add missing claim limitations. POR, 51. That does not apply here because Lindahl expressly teaches using the global key.

¹⁰ DivX argues that Lindahl alone does not teach alternative video streams. But the combination relies on Chen for alternative streams. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (“A conclusion of obviousness cannot be overcome by

Contradicting Lindahl’s express teachings, DivX contends that “Lindahl never discloses that *media files* may be encrypted with a global key. Rather, Lindahl only teaches that *metadata* ... may be encrypted with a global key...” POR, 44. This is not true. Lindahl states that the global key may be used to decrypt the media file before explaining that “the metadata can *also* be decrypted using the global key.” EX1007, ¶[0066]. At institution, the Board explained the flaws in DivX’s arguments, which DivX has ignored. *See* ID, 20-21.

DivX suggests the global key is used to decrypt, but a different key might be used to encrypt, a technique called “asymmetric encryption.” POR, 46.¹¹ Both experts agree it would not make sense to use asymmetric encryption for media content. EX1031, ¶20; EX1029, 210:16-211:9 (“Well, all of the asymmetric algorithms I can think of right at this moment, none of them are meant for bulk encryption.”), 212:19-214:17, 210:16-211:9, 212:19-213:23, 213:24-214:17; EX1023, 209. It would have been obvious Lindahl teaches encrypting/decrypting media using a symmetric global key. EX1003, ¶¶144-145; EX1031, ¶¶19-20.

attacking references individually where the rejection is based upon the teachings of a combination of references.”).

¹¹ DivX argues against anticipation (e.g., what is “inherent” or “must” be used), but the Petition sets forth obviousness grounds. POR, 46.

DivX speculates other options might be preferred over a global key. POR, 48. But this contradicts controlling Federal Circuit precedent. *See supra* §III.A. Lindahl teaches using a global key for less-sensitive data. EX1003, ¶145. Dr. Nielson admitted that “what makes something secure depends, at least in part on what your objectives are.” EX1029, 201:17-202:12, 205:2-5 (“Q... the security requirements for an application depend on its content? A. That’s one way of saying it.”), 203:13-203:18. Even if a global key is less secure, the combination explained its use for applications such as academic or public access videos, where piracy is less of a concern. Pet., 31-32; EX1031, ¶21; EX1017, 83 (“For multimedia data, we only need to provide sufficient security level such that the cost to break the security system is much more expensive than to buy the program.”), 86-87.

IV. Conclusion

Ground 1 teaches limitations [1e] and [11]—the only two limitations DivX disputes—and renders the challenged claims obvious.

Date: March 10, 2021

Respectfully,

/Harper Batts/

Harper Batts (Reg. No. 56,160)

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Corrected Reply to Patent Owner's Response contains 5,567 words and therefore complies with the 5,600 word type-volume limit specified by 37 C.F.R.

§ 42.24(c)(1). The word count does not include those portions excepted by 37 C.F.R. § 42.24(a)(1) and was calculated by Microsoft Word 365.

Date: March 10, 2021

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on March 10, 2021, a complete copy of the Petitioners' Corrected Reply was filed electronically and served via email to all parties to this proceeding at the addresses indicated:

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