

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX INC. AND HULU, LLC,
Petitioners,

v.

DIVX, LLC,
Patent Owner.

Case IPR2020-00558
Patent 10,225,588

PATENT OWNER DIVX LLC'S BRIEF ON REMAND

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The CAFC faulted the FWD for characterizing Petitioner’s combination as implementing partial frame encryption in Chen’s “system.” Paper 55 [CAFC Op.] 9-10. Citing Petitioner’s description of its combination, the CAFC found that Petitioner’s combination included Chen’s “teachings” and “pointed to the portions in Chen describing pre-Chen art.” *Id.* (citing Pet., 17-19, 69-70)). The CAFC did *not* address, and in any event did not decide, *which* teachings in Chen Petitioner relies on for each claim limitation. On remand, the Board should find a POSITA would not have had either a reasonable expectation of success or a motivation to implement partial frame encryption with the specific Chen teachings upon which Petitioner relies for each limitation. The Board should also address Patent Owner’s other arguments that Petitioner’s grounds fail. *See* POR 24-37 (“locating encrypted information ... within requested portions”); 38-58 (“common keys”).

I. NO REASONABLE EXPECTATION OF SUCCESS OR MOTIVATION SHOWN IN IMPLEMENTING PARTIAL FRAME ENCRYPTION IN CHEN’S “TEACHINGS” FOR LIMITATION 1[K].

Petitioner relied on Chen’s prior art for certain limitations. *See* Pet., 26 (“alternative streams of video”). But, for limitation 1[k] (“requesting portions of the selected stream of protected video based on the provided byte ranges”), Petitioner relied on Chen’s fragments/blocks. *See* Section I.A. As the Board found, a POSITA would not have had a reasonable expectation of success in implementing partial frame encryption in Chen’s blocks. *See* Section I.B. To the

extent Petitioner relied on modifying Chen's blocks to remove scalability and FEC, it did not show a motivation to "jettison" those elements. *See* Section I.C.

A. For Limitation 1[K], Petitioner Relied Exclusively Upon Chen's Scalable Fragments/Blocks.

Limitation 1[k] requires portions of a file that are separately requestable based on byte ranges provided in a file index. For this, Petitioner relied, as it had to, on Chen's embodiments' teachings of fragments or blocks that are part of Chen's segment files and can be requested based on Chen's segment index. *Pet.*, 43-49. This limitation was not addressed by the CAFC. Paper 55 [CAFC Op.] 9-10 (citing *Pet.*, 17-19, 69-70). As the Board found, undisturbed by the CAFC, scalability is "integral" to Chen's blocks, *i.e.*, the blocks Petitioner relied upon for limitation 1[k]. *FWD*, 20-21. Thus, even accepting the combination was based on Chen's "teachings," it does not change the fact that Petitioner inextricably and entirely relied upon Chen's scalable blocks, not pre-Chen art, for limitation 1[k].

Claim 1 recites "receiving a container index that provides byte ranges for portions of the selected stream of protected video within an associated container file" (1[j]), and "requesting portions of the selected stream of protected video based on the provided byte ranges," (1[k]). *Ex.* 1001 ['588] cl. 1. Thus, limitation 1[k] requires portions of a file that are separately requestable based on the byte ranges provided in a file index. *Accord* Paper 49 [Hearing Tr.] 79:14-80:20. For "portions" within a file that meet limitation 1[k], Petitioner relied on Chen's

embodiments' fragments (also referred to as blocks), and had to do so. *See infra*.

Petitioner mapped Chen's segment files made up of fragments/blocks to the claimed "container file" containing separately requestable "portions," and mapped Chen's segment index to the claimed "container index." *See, e.g.,* Pet., 44-45 (*citing* Ex. 1006 [Chen] [0119] [0148] [0120] [0123] [0222] [0129], Fig. 27 for the disclosure of the "segment index"); Pet., 46 (*citing* Ex. 1006 [Chen] [0111] [0119] for the disclosure of requesting "a portion of a file"); Pet., 51 (*citing* Ex. 1006 [Chen] [0129] [0517] [0529] [0530] for the disclosure of "request for fragments of a segment [] based on byte ranges provided by a segment index."); Pet., 43 ("Chen teaches that the segments are files"); Pet., 49 ("Chen teaches that fragments are blocks and that both are portions of a segment (e.g., container file)").

For limitation 1[k], Petitioner does not cite Chen's "background" art (Ex. 1006 [Chen] [0016]-[0026]). Nor can it. Chen's fragments/blocks that are "portions" of a segment "file" and that can be separately "requested" based on byte ranges in the segment index are **only** disclosed in Chen's embodiments as an improvement, **not** its discussion of the prior art. Specifically, Chen explains that in its prior art "standard HTTP," each segment was stored "as a separate file," and an HTTP request could be made "for individual segments ...," not for portions of a segment file such as fragments. Ex. 1006 [Chen] [0063]-[0064]. Chen then explains that in its "improved block-request streaming system," a user may request

portions of a segment file as fragments/blocks, the same fragments/blocks relied upon by Petitioner. *Id.*, [0071] (“In some embodiments ... [e]ach of these segments may contain multiple movie fragments ...”); [0074] (“Based on the available indexing, a client can request different portions of a fragment in different HTTP requests ...”); [0122] (describing the “overview” for its “improved block-request streaming”); [0101] (“One embodiment of the invention is described with reference to FIG. 1.”). Chen explains that it is in part because of its “segment indexing” (*id.*, [0123]) that “[a] receiver can use the byte offset to request data from fragments associated with particular time offsets without having to download all of the data associated with other fragments not associated with the time offset of interest.” *Id.*, [0124]; *see also id.*, [0199] (“In another embodiment, multiple consecutive blocks may be aggregated into a single file to form a segment. In this second embodiment, metadata for each version may be provided comprising the start time and duration of each block and the byte offset within the file”).

Chen repeatedly emphasizes the benefits of its “advancement” over the prior art, disclosing the fragments/blocks relied upon by Petitioner. *See, e.g.*, Ex. 1006 [Chen] [0140] (“In order to formulate partial GET request for Movie Fragments, the client may be informed of the byte offset and start time in decoding or presentation time of all media components contained in the fragments within the file or segment and also which fragments begin or contain a Random Access Points

(and so are suitable to be used as switch points between alternative representations)”); [0198] (“An enabling feature that allows the efficient use of variable duration between seek points, and thus variable duration GoPs, is the segment indexing or segment map ...”); [0202] (“If segment indexing were not available then the client might have to download all previous 157,034 bytes of data before downloading this data, leading to a much longer startup time, or channel zapping time, and to wasteful downloading of data that is not useful.”).

Moreover, for the reasons explained (POR, 11-13, Sur-Reply, 8-11), the Board correctly found scalability is “integral” to Chen’s fragments/blocks, which are only disclosed as scalable. FWD, 20-21. The Board found Patent Owner’s “unrebutted” expert testimony “persuasive,” and “note[d] that Petitioner filed a supplemental [declaration], but it did not address the nature of scalability layers in Chen.” FWD, 21. The CAFC did not disturb the finding that Chen’s fragments/blocks are scalable, nor did it issue a mandate to revisit that finding. Paper 55, 8.

Thus, for 1[k], Petitioner necessarily relied on Chen’s scalable blocks.

B. As The Board Found, Petitioner Did Not Show A Reasonable Expectation Of Success In Implementing Partial Frame Encryption In Chen’s Fragments/Blocks.

As explained, Petitioner relied on Chen’s scalable blocks for limitation 1[k]. Chen’s fragments/blocks contain 12-30 frames. Ex. 2012 [Nielson Decl.] ¶ 51; Ex. 2029 [Demonstratives] (Slide No. 40). These are the frames that Petitioner argued

would be partially encrypted in view of Lindahl. Pet., 29-30.

However, for the reasons explained (POR, 13-18, Sur-Reply, 11-16), the Board found that Petitioner failed to prove that a POSITA would have had a reasonable expectation of success in implementing partial frame encryption in Chen's scalable blocks. FWD, 25; *Eli Lilly & Co. v. Teva Pharms. Int'l GmbH*, 8 F.4th 1331, 1349 (Fed. Cir. 2021) (Petitioner failed to meet its burden to prove a reasonable expectation of success where "[t]he Board weighed the evidence supporting each side of the factual dispute and found that sufficient uncertainty and unpredictability remained—i.e., that Lilly's evidence failed to demonstrate enough certainty [...] to give a skilled artisan a reasonable expectation of success.").

The Board's finding was not disturbed by the CAFC. Paper 55 [CAFC Op.] 8 ("Petitioners ... do not argue that substantial evidence is lacking to support the Board's finding of no proven reasonable expectation of success of the combination with Chen's 'system.'"). Remand should maintain the result that the combination fails because a POSITA was not shown to have a reasonable expectation of success in implementing partial frame encryption in Chen's blocks (limitation 1[k]).

C. As The Board Found, Petitioner Did Not Show A Motivation To Remove Chen's Scalability/FEC To Implement Partial Encryption.

Even if Petitioner had argued that a POSITA would have modified Chen's blocks to remove scalability and FEC to implement partial frame encryption, its argument still fails for want of a motivation. The Petition's proffered motivation

for the combination is to “address piracy concerns and improve efficiency.” Pet., 18. However, removing scalability and FEC from Chen’s embodiments would diminish Chen’s “efficiency” by destroying integral aspects of Chen that Chen teaches are necessary for its latency, user experience, and efficiency. POR, 19-22. Thus, the FWD correctly found that “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.” FWD, 21 (emphasis in original).

II. EVEN IF, COUNTERFACTUALLY, PETITIONER HAD RELIED ON “BASIC ADAPTIVE BITRATE STREAMING” WITHOUT SCALABILITY, IT STILL FAILED TO SHOW A MOTIVATION.

The CAFC explained that, in assessing a motivation to make Petitioner’s combination, “the Board also should address any properly raised argument about the standards for assessing whether a relevant artisan would, in the first place, have selected a particular disclosure in one reference (here, Chen, a patent application) for combination with another reference.” Paper 55, 12 (citing *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998); *In re Sang Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002)). As explained below, the Board correctly found that a POSITA motivated by “efficiency” would not have selected “basic adaptive bitrate streaming” out of Chen for partial frame encryption, after considering the entirety of Chen’s discussion on scalability and

FEC, the challenges of modifying the standard file formats, loss of interoperability with other devices, and the alternatives that existed for changing Chen’s fragment-level encryption to partial encryption but that were not partial *frame* encryption and that did not have the obstacles of Petitioner’s combination.

Petitioner’s proffered motivation for combining Chen’s teachings with Lindahl was to “address piracy concerns and improve efficiency.” Pet., 18. With regards to “piracy concerns,” the Board “agree[d]” with Patent Owner that Petitioner has not shown only partially encrypting has any security benefit over Chen’s own full encryption. FWD, 26. With regards to “improv[ing]” efficiency,” as the Board found, even if Petitioner’s combination exclusively relied on “basic adaptive bitrate streaming” without scalability, Petitioner still failed to show a motivation to select only those aspects after reviewing the entirety of Chen:

[A POSITA] would have considered all of Chen; Petitioner’s assertion 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 adopted aspects of a secondary reference, like Lindahl*. ... 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

FWD, 22-23; *see also* FWD, 21 (“Petitioner has not demonstrated *why* they would jettison features that are disclosed as useful.”); FWD, 26 (“agree[ing]” with Patent

Owner’s motivation arguments); Paper 49 [Hearing Tr.] 67:20-68:4 (Judge Turner:

“...maybe it would have been better to find a different reference than Chen.

Because then you don’t have to all—everything that Chen is saying as desirable, you don’t have to sort of exclude that in order to make your combination.”);

Paper 49 [Hearing Tr.] 45:5-46:4; 50:18-51:2.

The Board’s conclusion is supported by both fact and law. Even if, counterfactually, Chen disclosed “basic adaptive bitrate streaming” without scalability that also taught other claimed elements, *e.g.*, 1[k], that disclosure “must be considered in the context of the teaching of the entire reference,” and *“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”* *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000); *see also In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (similar).

Petitioner’s proffered motivation was, again, “efficiency.” But, as discussed below, its hindsight-driven combination would **reduce** efficiency, would go against Chen’s use of full, rather than partial, encryption, would require modifying the standard file formats, would have lost device interoperability, and would ignore alternative, better, partial encryption solutions that did not have these obstacles.

First, disregarding Chen’s scalability would substantially reduce efficiency, with a “necessarily much lower” media quality and “poor” user experience. Ex.

1006 [Chen] [0379]; POR, 18-22; Sur-Reply, 16-20. Moreover, Chen’s “temporal scalability” avoids interruption by using currently received blocks to predict future lost blocks, thereby improving efficiency by reducing the required bandwidth for a given quality of video. Ex. 2012 [Nielson Decl.] ¶ 59. Across *two expert declarations*, Petitioner provided *no evidence or analysis* of why a POSITA would choose a “necessarily much lower” video quality or “a poor user experience” just to implement partial frame encryption, or why that would “improve efficiency.”

Second, disregarding Chen’s FEC to implement partial frame encryption would substantially reduce Chen’s efficiency. POR, 18-22; Sur-Reply, 16-20. FEC can be “especially important,” and improves performance by up to 70%. Ex. 2012 [Nielson Decl.] ¶ 75 (citing [Ex. 1006, Chen] [0528]-[0533]). The Board correctly found that a POSITA would not have had a reasonable expectation of success implementing partial frame encryption with FEC. FWD, 25. Petitioner provided no explanation for why a POSITA would have been motivated to disregard FEC and, *e.g.*, reduce Chen’s timing performance by up to 70% just to implement partial frame encryption, or why that would “improve efficiency.”

Third, the undisputed necessity to modify the standard file formats and the loss of interoperability with other devices further weighs against Petitioner’s combination. FWD, 27; *see also* POR, 22-24; Sur-Reply, 20-22.

Fourth, Chen used full fragment level encryption, as opposed to partial

frame encryption, which further counsels against the combination for reasons already raised and established in the record. FWD, 19-20; POR, 6-9.

Fifth, Patent Owner’s un rebutted testimony explained that even if a POSITA were interested in avoiding full encryption, it “would have likely implemented the much more routine and much simpler process of encrypting some, but not all, fragments, on a periodic basis,” such as every other fragment in its entirety. Ex. 2012 [Nielson Decl.] ¶ 76. Such an approach would not require eliminating scalability and FEC or modifying the standard file formats.

Quite simply, a POSITA would not be motivated to proceed with Petitioner’s combination after considering all of these facts, as “[e]vidence suggesting reasons to combine cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine.” *See Arctic Cat Inc. v. Bombardier Rec. Prods.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) (“The potential problems” with petitioner’s combination coupled with “an alternative approach [that] might reduce those same problems,” supported the finding that “a skilled artisan would not have been motivated” to make petitioner’s combination.”); *United States v. Adams*, 383 U.S. 39, 51-52 (1966) (“Despite the fact that” the claimed elements were known, to combine them would have “required” a POSITA “to ignore” various problems). Petitioner’s summary reliance on Ex. 1010 [Chen-924] (Pet., 19-20) does not help Petitioner because it does not eliminate the teachings of Ex. 1006 [Chen] which is

actually a part of Petitioner's combination, and also fails to show why a POSITA would implement partial frame encryption in an adaptive bitrate streaming system that meets the other claimed limitations.

III. PETITIONER FAILS TO SHOW A REASONABLE EXPECTATION OF SUCCESS TO MODIFY STANDARD FILE FORMATS.

Petitioner's combination additionally fails to show a reasonable expectation of success in modifying the standard file formats to meet the claims, regardless of which part of Chen Petitioner relies on for its combination. It is undisputed that to even attempt implementing partial frame encryption, Chen's disclosed standard file formats must be modified. Ex. 2013 [McDaniel Depo.] 35:25-36:12; 25:7-18, 34:11-14; POR, 22-25; Sur-Reply, 22. As the Board noted, a POSITA's qualifications, per Petitioner's expert, was to merely "*us[e]* known video container file formats for streaming ...," not to modify them. FWD, 27 (citing Ex. 1003 [McDaniel Decl.] ¶ 68). Therefore, as discussed (POR, 22-24, Sur-Reply, 20-23), it was beyond a POSITA's skill to make the necessary file format modifications, and therefore Petitioner did not show a reasonable expectation of success for this additional reason. In contrast, the '588 describes in detail how, for example, to modify the standard Matroska file format so as to implement partial frame encryption as claimed. POR, 27-30; Ex. 1001 ['588] 11:45-50; 16:21-52; Fig. 4e.

IV. CONCLUSION

Petitioner fails show unpatentability of any challenged claim.

Date: May 12, 2023

Respectfully submitted,

/ Kenneth J. Weatherwax /

Kenneth J. Weatherwax, Reg. No. 54,528
Nathan Lowenstein (*admitted pro hac vice*)
Parham Hendifar, Reg. No. 71,470

Lowenstein & Weatherwax LLP

CERTIFICATE OF SERVICE

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

PATENT OWNER DIVX LLC'S BRIEF ON REMAND

The names and address of the parties being served are as follows:

HBatts@sheppardmullin.com,
CPonder@sheppardmullin.com,
JLiang@sheppardmullin.com,
LegalTm-DivX-IPR@sheppardmullin.com

Respectfully submitted,

/ Parham Hendifar /

Date: May 12, 2023