

Filed on behalf of Intellectual Pixels Limited

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY INTERACTIVE ENTERTAINMENT LLC,
Petitioner,

v.

INTELLECTUAL PIXELS LIMITED,
Patent Owner.

Case No. IPR2021-00237
U.S. Patent No. 10,681,109

PATENT OWNER'S OPENING BRIEF ON REMAND

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OTHER AUTHORITIES

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TABLE OF EXHIBITS

Exhibit No.	Description
2001	Disclaimer of Claims 13-18 of U.S. Patent No. 10,681,109
2002	Excerpt from IEEE 1000: The Authoritative Dictionary of IEEE Standards Terms (“IEEE Dictionary”) (7th ed. 2000)
2003	Excerpt from Microsoft Computer Dictionary (5th ed. 2002)
2004	File History of U.S. Patent No. 10,681,109
2005	U.S. Patent No. 6,929,549 (“Yamada1”)
2006	U.S. Patent No. 6,266,930
2007	Excerpts from Shelly, Cashman, and Vermaat, Discovering Computers: Fundamentals (4th ed. 2008)
2008	Frameless Rendering: Double Buffering Considered Harmful (1994)
2009	Declaration of Dr. John Hart in Support of Patent Owner Response
2010	Transcript of Deposition of Dr. Henry Fuchs (Aug. 17, 2021)
2011	Excerpt from Random House Webster’s College Dictionary (1997)
2012	McVeigh et al., “A Software-Based Real-Time MPEG-2 Video Encoder,” IEEE Transactions on Circuits and Systems for Video Technology 10(7), Oct. 2000, pp. 1178-1184
2013	H.261 Standard, available at https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-H.261-198811-S!!PDF-E&type=items
2014	Fuchs, Henry, “Beyond the Desktop Metaphor: Toward More Effective Display, Interaction, and Telecollaboration in the Office of the Future via a Multitude of Sensors and Displays,” Proc. International Conference on Advanced Multimedia Content Processing, Nov. 9, 1998, pp. 30-43
2015	MPEG 2 Video standard, available at https://mpeg.chiariglione.org/standards/mpeg-2/video
2016	ITU-T Recommendation H.262, available at https://www.itu.int/rec/T-REC-H.262-199507-S/en

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Exhibit No.	Description
2017	Patent Owner's Demonstratives for Oral Hearing
2018	Brief for Appellant Sony Interactive Entertainment LLC, <i>Sony Interactive Ent. v. Intellectual Pixels</i> , No. 2022-2118, Dkt. No. 12 (Fed. Cir. Nov. 14, 2022)
2019	Brief for Appellee Intellectual Pixels Limited, <i>Sony Interactive Ent. v. Intellectual Pixels</i> , No. 2022-2118, Dkt. No. 14 (Fed. Cir. Dec. 27, 2022)
2020	Reply Brief for Appellant Sony Interactive Entertainment LLC, <i>Sony Interactive Ent. v. Intellectual Pixels</i> , No. 2022-2118, Dkt. No. 15 (Fed. Cir. Jan. 17, 2023)

I. INTRODUCTION

Marching back to the Board from its pyrrhic appeal, on remand Sony’s Petition is only further discredited since the first trial. The Federal Circuit’s decision was limited to the “generating” limitation, finding Wiltshire’s “Doom” embodiment to be the only (implicit) disclosure of “generating.” As explained during the IPR, however, the Petition failed to show that many other limitations were met including the “compressing” limitation and the claimed series of steps of “generating,” “compressing,” and “transmitting” an updated image. These issues are now even more problematic because the Petition further failed to show that these limitations were met by Wiltshire’s “Doom” embodiment, which is now required on remand.

The Petition also failed to show that the compressed “frame” limitation was obvious, much less that it was obvious over Wiltshire’s “Doom” embodiment. Finally, the Petition still did not prove that the ’109 Patent’s dependent claims were obvious.

II. THE FEDERAL CIRCUIT FOUND DOOM IS THE ONLY EXAMPLE OF “GENERATING” IN WILTSHIRE.

The Board correctly found that Wiltshire’s examples regarding casino games in Figures 4A-9D did not disclose “generating.” Paper 38 (“FWD”) at 26-30 (“Wiltshire’s example screens in Figures 4A–9D suggest that these could have simply been pre-existing images and would not necessarily need to be generated in real time.”); *see also* Paper 17 (“POR”) at 30; EX2009 (Hart Decl.) ¶¶66-67; Paper

37 (Hearing Tr.) at 45:7-46:14. Not only did the Federal Circuit not disturb the Board’s findings about these “more detailed examples” in Wiltshire, Opinion at 8, but the appellate court agreed with the Board by acknowledging the “existence” of “embodiments in Wiltshire where images are pre-loaded,” *id.* at 7; *see also id.* at 6 (acknowledging Dr. Hart’s testimony “that [Wiltshire’s] updating or modifying images could be through selecting pre-existing images” (emphasis removed)).

The only embodiment that the Federal Circuit found actually discloses the “generating” limitation is Wiltshire’s “disclosure of applying its system to video games like Doom, which require ‘generating’ new images under the Board’s construction.” Opinion at 9; *see also id.* at 7-8.

The Federal Circuit’s decision thus condemns Sony’s Petition to inevitable failure. To prevail based on Wiltshire’s Doom embodiment, the Petition would have had to show that all of the other limitations of the Challenged Claims allegedly disclosed by Wiltshire are disclosed in Wiltshire’s Doom embodiment. Petitioner cannot not simply mix and match disclosures from other Wiltshire embodiments, such as the casino game embodiments, as the Petition is utterly devoid of any express argument explaining why they would have been combined with Doom. *In re Stepan Co.*, 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2017) (when “combining multiple embodiments from a single reference ... there must be a motivation to make the combination and a reasonable expectation that such a combination would be

successful, otherwise a skilled artisan would not arrive at the claimed combination”); *Markforged, Inc. v. Continuous Composites, Inc.*, IPR2022-00679, Paper 24, at 16 (P.T.A.B. Sept. 26, 2023) (rejecting “Petitioner’s reliance on multiple embodiments”); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1343 (Fed. Cir. 2016).

Further, Petitioner must have demonstrated that a POSITA would have found it obvious to take the specific asserted combination of Wiltshire, Saha, Chen, and/or PC Magazine and apply it to the “Doom” game, which, as the Board recognized, is merely one of “a lengthy list of games” recited in Wiltshire. FWD at 27 (citing EX1004 at 1:26-44); *In re Stepan Co.*, 868 F.3d at 1346 n.1 (“there must be a motivation to make the combination and a reasonable expectation” of success for “selecting from large lists of elements in a single reference”).

The Petition cannot overcome this deficiency because it provided only a single mention of Doom among numerous other games. Paper 3 (“Pet.”) at 20. As the Board correctly recognized, “the *only* mention of Doom in Wiltshire appears in a lengthy list of games” in the “Related Art” section and does not describe how “Wiltshire’s system could possibly have supported that game in the manner proposed by Petitioner.” FWD at 27 (citing EX1004 at 1:26-44); *see also* Opinion at 8 (acknowledging this finding without disagreement).

It’s too late for Petitioner to fix these deficiencies now, as it was required to

meet its burden with arguments that were presented in the Petition. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016); 35 U.S.C. § 312(a)(3); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016); *Microsoft Corp. v. D3D Techs., Inc.*, IPR2021-01325, Paper 31, at 63 (P.T.A.B. Feb. 13, 2023) (petitioner’s “argument takes a new approach with respect to what was presented in the Petition, and thus is inappropriate and not entitled to consideration”).

III. WILTSHIRE DOES NOT DISCLOSE “COMPRESSING THE AT LEAST ONE UPDATED IMAGE” (ALL CLAIMS/GROUNDS).

Patent Owner previously explained that the Petition failed to show a series of connected limitations, including: (1) “generating at least one updated image,” (2) “compressing the at least one updated image,” and (3) “transmitting the compressed updated image.” EX1001 at 9:62-66, 10:35-40; POR at 24-32; Paper 26 (“Sur-Reply”) at 12-15.

The Federal Circuit limited its opinion to the “generating” limitation, finding that “generating” was disclosed by Wiltshire’s Doom embodiment. Opinion at 4 (“The sole issue on appeal is whether the Board properly determined that Wiltshire does not teach the ‘generating’ limitation.”), 7-9. Even if Wiltshire’s Doom embodiment inherently (but not expressly) discloses “generating,” the Petition failed to prove that Wiltshire discloses the “generating,” “compressing,” and

“transmitting” limitations in series. Indeed, Petitioner made no attempt to show that “compressing” and “transmitting” are taught by Wiltshire’s *Doom embodiment*.

The Petition’s only argument that Wiltshire discloses “compressing” the updated image was that “Wiltshire explains that ... the server may compress the updated images as ‘a compressed video MPEG Stream.’” Pet. at 27-28 (citing EX1004 at 7:15-18, 7:62-64). Petitioner did not argue that “compressing” the updated image was obvious over Wiltshire. *Id.*

As discussed in the POR, however, Wiltshire does not disclose compressing updated images as an MPEG stream, only that “the image” sent to the client “may include ... a JPEG file, a TIFF file or even an encoded audio/video stream such as a compressed video MPEG stream.” EX1004 at 7:12-18; POR at 27-29. In other words, Wiltshire does not disclose on-the-fly creation and compression of an MPEG stream, but instead could have used a pre-existing MPEG stream. As Dr. Hart explained: “A POSITA would have understood Wiltshire to disclose that the ‘image [] generated by the game computer program’ could include the contents of a pre-existing compressed image file.” EX2009 ¶62 (quoting EX1004 at 7:18-19). Thus, Wiltshire does not disclose an “MPEG stream” resulting from newly-generated images (in response to user input) that are compressed before being sent to the client.

Indeed, the Board’s Final Written Decision correctly found that “Wiltshire’s disclosure [is] completely silent as to the content or origin of that ‘compressed video

MPEG stream.” FWD at 30 (quoting POR at 27-28); *see also id.* (“Petitioner imparts to Wiltshire something Wiltshire never discloses”); Ex. 2009 ¶¶60–68. This finding was not rejected or contradicted by the Federal Circuit. *See generally* Opinion. Nor did Petitioner challenge this finding by the Board on appeal. *See generally* EX2018; EX2020. Aside from being correct, this finding is now binding, and Petitioner is precluded from challenging it moving forward. *See Amado Corp. v. Microsoft*, 517 F.3d 1353, 1360 (Fed. Cir. 2008) (“The mandate rule provides that ‘issues actually decided [on appeal]—those within the scope of the judgment appealed from, minus those explicitly reserved or remanded by the court—are foreclosed from further consideration.’” (quoting *Engel Indus., Inc. v. Lockformer Co.*, 166 F.3d 1379, 1383 (Fed. Cir. 1999))); *see also Engel Indus.*, 166 F.3d at 1383 (“An issue that falls within the scope of the judgment appealed from but is not raised by the appellant in its opening brief on appeal is necessarily waived.”); *Williamsburg Wax Museum, Inc. v. Historic Figures, Inc.*, 810 F.2d 243, 250 (D.C. Cir. 1987) (“[A] legal decision made at one stage of litigation, unchallenged in a subsequent appeal when the opportunity to do so existed, becomes the law of the case for future stages of the same litigation, and the parties are deemed to have waived the right to challenge that decision at a later time.”).

Finally, Wiltshire’s generic statement that bandwidth “can be further reduced using data compression techniques to about 100 KB/sec,” EX1004 at 7:62-64 (cited

at Pet. at 28), does not explain how that compression would work, much less that any newly-generated image would be compressed in real time using MPEG. POR at 30-31. Indeed, Petitioner never responded to Dr. Hart’s explanation that “the ’109 has a specific component... that compresses the image data, that’s component number 66” and “[t]hat component is missing from the design... of Wiltshire.” EX1025 at 144:12-15; EX2009 ¶82.

Therefore, even if Wiltshire inherently discloses “generating” an updated image via Doom, Wiltshire does not disclose “compressing” an updated image for the reasons expressed during the IPR. POR at 24-32; Sur-Reply at 12-15.

Additionally, Petitioner’s “compressing” argument is even weaker on remand, given that the Federal Circuit only found “‘generating’ new images” disclosed in Wiltshire “applying its system to video games like Doom.” Opinion at 9. Even if Wiltshire discloses compressing MPEG streams on the fly, and it did not, nothing in Wiltshire discloses that it would necessarily do so with Doom. *See generally* EX1004; Sur-Reply at 13. Moreover, the Petition did not even mention the Doom embodiment for this limitation. *See* Pet. at 27-34.

Petitioner never argued that Doom, or any other video game for that matter, required MPEG streams, much less MPEG streams that were compressed in real-time. Nor is there any evidence in the record to support any such argument. Indeed, the only evidence in the record is to the contrary. EX2009 ¶63 (“[A] POSITA would

not have understood Wiltshire to disclose the on-the-fly compression of the image generated by the game computer program, because Wiltshire specifically refers to a file.” (emphasis removed)); *see also id.*, ¶¶61-62; Sur-Reply at 12-15.

Moreover, the Federal Circuit, while finding that Wiltshire discloses applying its system to Doom, also acknowledged Wiltshire’s lack of disclosure of *how* Wiltshire’s system would apply to Doom. Opinion at 8 (distinguishing “Doom” from the “more detailed examples” in Wiltshire); *id.* (noting the Board’s “finding that a person of ordinary skill in the art would not be enabled to practice Wiltshire with a game like Doom”); *id.* (noting the Board found “nothing in Wiltshire to suggest that a person of ordinary skill in the art would have understood that Wiltshire’s system could possibly have supported that game in the manner proposed by” Petitioner (quoting FWD at 27)).

Thus, the Board should again find the claims patentable, as Petitioner failed to prove that Wiltshire discloses “compressing the at least one updated image.”

IV. WILTSHIRE AND SAHA DO NOT DISCLOSE THE COMPRESSED “FRAME” LIMITATION (ALL CLAIMS/GROUNDS).

During the IPR, Patent Owner pointed out that Wiltshire and Saha do not disclose that a “server transmits the updated image as a [compressed] frame,” as required by every Challenged Claim. POR at 11-18, 32-39; Sur-Reply at 2-8, 15-17. Because the Federal Circuit’s opinion was limited to the “generating” limitation,

it does not foreclose or detract from this argument. In fact, the Federal Circuit’s holding Wiltshire “applying its system to video games like Doom” was the only disclosure of “generating” further undermines the Petition. Opinion at 9.

Patent Owner previously explained that the term “frame” should be construed as “a single instance of the display,” not merely a “picture.” POR at 11-18; Sur-Reply at 2-8. Patent Owner then explained that Wiltshire merely describes using an “image” and does not disclose using an image that is a single instance of the display. POR at 33-36; Sur-Reply at 15-16. As with the “compressing” limitation, Wiltshire is silent as to this “frame” limitation, particularly with its casual mention of Doom. Sur-Reply at 15-16; *Snap Inc. v. Vaporstream, Inc.*, IPR2018-00455, 2019 WL 3470763, at *7 (P.T.A.B. July 31, 2019). Indeed, Petitioner has presented no evidence from which the Board could conclude that Wiltshire’s Doom example satisfied this limitation.

Saha did not cure this deficiency in Wiltshire. As explained, Petitioner failed to demonstrate that Saha’s MPEG teachings disclose using a “frame” as claimed in the ’109 Patent. POR at 36-39; Sur-Reply at 16-17. Moreover, Saha only teaches the use of MPEG for offline encoding. POR at 31; Sur-Reply at 14-15; EX2009 ¶74.

On remand, the Petition’s argument that Wiltshire and Saha disclose a compressed “frame” cannot be sustained. Petitioner cannot now argue that Wiltshire in view of Saha would use compressed frames while playing Doom because the

Petitioner never pointed to Doom for this limitation and instead expressly relied on Wiltshire's *casino* examples to show "frames." Paper 22 (Reply) at 19-20.

On this basis, the Board can confirm patentability of all claims again.

V. DEPENDENT CLAIMS

As explained in prior briefing, Wiltshire in view of Saha does not disclose a "mobile device" (Claims 6, 11, 12), which should be construed to mean a "handheld computing device," not a laptop. POR at 18-21, 39; Sur-Reply at 8-11.

Similarly, PC Magazine does not disclose a "mobile device" under the correct construction, and instead discloses a laptop. POR at 18-21, 45; Sur-Reply at 8-11, 19-20. Moreover, Petitioner did not demonstrate a reason to combine PC Magazine with Wiltshire and Saha. POR at 46-52; Sur-Reply at 20-22.

Petitioner also failed to establish that Wiltshire in view of Saha and Chen renders obvious Claim 2's "first" and "second bandwidth" limitation because it did not demonstrate a sufficient motivation to combine Chen's ADSL for ordinary residential telephones with Wiltshire's system. POR at 53-63; Sur-Reply at 22-26.

These pending arguments were not impacted by the Federal Circuit's decision.

VI. CONCLUSION

For at least the foregoing reasons, Patent Owner respectfully requests the Board find that Petitioner has failed to show invalidity of the Challenged Claims.

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a true copy of the foregoing **PATENT OWNER’S OPENING BRIEF ON REMAND** and **EXHIBITS 2018-2020** are being served electronically on January 18, 2024 to the following lead and back-up counsel for Petitioner to the following email addresses:

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