

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARASHI VISION (U.S.) LLC (D/B/A INSTA360)
Petitioner,

v.

GOPRO, INC.
Patent Owner.

Case No. IPR2024-01052
U.S. Patent No. 11,336,832

PATENT OWNER'S SURREPLY

PUBLIC VERSION

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EXHIBIT LIST

No.	Exhibit
2001	Declaration of Hassan Foroosh, Ph.D.
2002	<i>Curriculum vitae</i> of Hassan Foroosh, Ph.D.
2003	Chinese Pat. App. 112804444 B
2004	Certified Translation of Chinese Pat. App. 112804444 B
2005	“HERO9 Black – In-Camera Horizon Leveling,” produced as GOPRO_00059907 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2006	Complaint, <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2007	E-mail from Alex S. Yap on October 9, 2024
2008	[REDACTED] produced as GP_GOPRO_00050248_T1 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2009-2017	Intentionally Left Blank
2018	[REDACTED] produced as GOPRO_00019926 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2019	[REDACTED] produced as GOPRO_00063381 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2020	Declaration of Patrick T. Schmidt in Support of Patent Owner’s Motion for <i>Pro Hac Vice</i> Admission
2021	Supplemental Declaration of Hassan Foroosh Ph.D.

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2022	Transcript of the Deposition of Dr. Aggelos K. Katsaggelos, taken April 11, 2025
2023	“What is GoPro SuperView?”, available at https://actioncamphotographer.com/gopro-superview/
2024	Declaration of Pablo Lema
2025	Joint Stipulation Regarding Representative Domestic Industry Products, filed in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2026	Transcript of the Deposition of Dr. Aggelos K. Katsaggelos, taken March 28, 2025
2027	Respondents Insta360’s Proposed Claim Constructions from <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2028	“HERO12 Black: Video Settings and Resolutions,” found at https://community.gopro.com/s/article/HERO12-Black-Video-Settings-And-Resolutions?language=en_US
2029	Excerpts of source code produced as GOPRO_SC0633 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2030	Written Opinion of the International Searching Authority for PCT/US2015/031600
2031	“Horizon Lock,” entered as CX-1436 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2032	████████████████████ entered as CX-0845C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400, with certified translation
2033	████████████████████ entered as CX-0846C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400, with certified translation

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2034	entered as CX-1020C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400, with certified translation
2035	entered as CX-0892C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400, with certified translation
2036	entered as JX-0037C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2040	entered as CX-0590C in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400
2041	Transcript of the Deposition of Dr. Aggelos K. Katsaggelos, taken August 22, 2025

I. INTRODUCTION

Unable to identify clear disclosures in the references of claim limitations, Petitioner relies upon conclusory expert say-so and new arguments. This is not sufficient to meet Petitioner's burden.

II. CLAIM CONSTRUCTION

Petitioner's "Claim Construction" discussion is divorced from the prior art, and mischaracterizes the disputes. PO addresses these arguments in connection with its discussion of the prior art.

III. GROUND 1: THOMASON-PACURARIU

A. Thomason-Pacurariu Does Not Render Obvious Determining The Viewing Window Size Frame-By-Frame (Claims 7/17)

These claims require that the determination of the viewing window "includes determination of a size of the viewing window as the function of progress through the progress length." The Institution Decision found that a determination "as the function of progress" requires "determining a viewing window for different frames of the video" (*i.e.*, frame-by-frame). Paper 10, 16-17. A system that applies a one-time correction does not satisfy the claims.

The Petition advances a single theory for Claims 7 and 17: disclosure by Thomason. Pet., 37-39; Reply, 11-12. The Petition (and Reply) do not argue that a POSITA would modify Thomason to calculate the size of the viewing window frame-by-frame or that there is a reasonable expectation of

success for such a modification. Because Thomason does not disclose frame-by-frame horizon-leveling (POR, 29-30), let alone determining the size of the window frame-by-frame, Petitioner has not met its burden.

Thomason's disclosures teach a one-time correction (EX2021, ¶¶45-50, 85-90), not frame-by-frame horizon-leveling. PO challenged Petitioner to identify an express or inherent disclosure of frame-by-frame horizon-leveling in Thomason, but Petitioner was unable to do so because none exists.

First, Petitioner attempts to rely upon Thomason's disclosure that its camera may record "still image or moving images." Reply, 8-9. A camera that records still or moving images is consistent with a one-time correction.

Second, Petitioner attempts to rely upon Figure 3, but that Figure depicts a correction to a single still image. EX2041, 81:17-82:8. Petitioner argues that when Thomason's camera records moving images ("a sequence of items of image data 8"), Thomason would use "frame-specific rotation information" to level each image frame-by-frame. Reply, 9-10. Petitioner's assertion, however, is not backed by any citation to Thomason.

Third, Petitioner claims that Thomason's disclosure that "[a] playback device 20" can "process the recorded image data 8 and rotation angle" somehow teaches "frame-specific rotation information." Reply, 9-10 (citing

EX1004, ¶32).¹ But this disclosure refers to a *single* rotation angle—Petitioner’s expert admitted at deposition that paragraph 32 of Thomason only explicitly describes a correction to a single frame. EX2041, 75:10-80:2. Petitioner and its expert have not even attempted to establish this feature is inherent in Thomason. Nor do they contend it would be obvious to modify Thomason to include this feature. Because Petitioner’s entire theory hinges on an actual disclosure of the limitation by Thomason, a disclosure that is not present, the theory fails. *See Eli Lilly and Company, v. Teva Parenteral Medicines, Inc.*, 845 F.3d 1357, 1374 (Fed. Cir. 2017) (affirming finding of non-obviousness where “nothing in the literature as of the critical date described” the limitation); *In re Assett Guard Products, Inc.*, 2022 WL 1097363, *5-*6 (Fed. Cir. 2022) (claim were non-obvious where “there is no disclosure, in any of the references” of the limitation); *University of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 160-62 (Fed. Cir. 2021). At best, Thomason’s disclosures are ambiguous as to frame-by-frame

¹ Petitioner claims that PO “incorrectly altered” paragraph 32 of Thomason by suggesting that “image data 8” was part of a captured video. Reply, 9, *quoting* POR, 29. But, PO’s alteration was assuming (for the sake of argument) the correctness of Petitioner’s theory that image data 8 was referring to a video. If Petitioner now contends that “image data 8” is *not* referring to a video, then that defeats Petitioner’s entire argument that Figure 3 somehow discloses any frame-by-frame determination.

horizon-leveling such that they fail as a matter of law. *Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017) (citing cases).

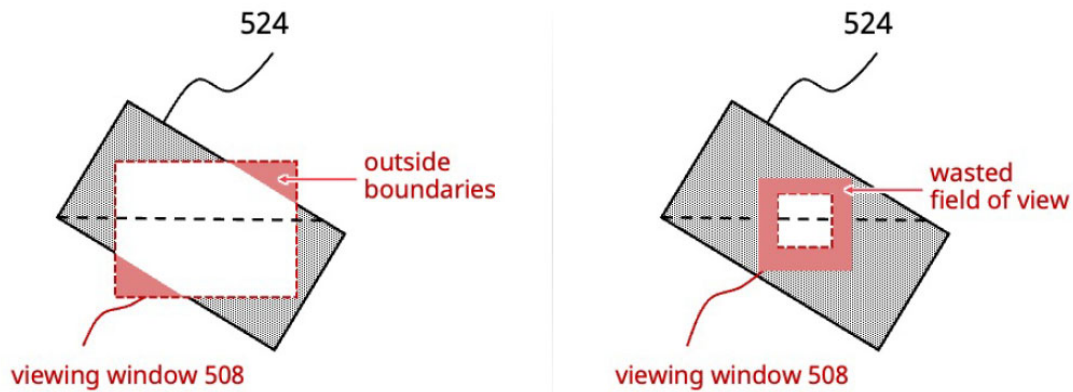
Fourth, Petitioner’s expert ignores aspects of Thomason that are inconsistent with his position. For instance, the correction in the relied-upon Figure 3 embodiment is achieved using a rotation sensor that is a single accelerometer (EX1004, ¶29), and PO’s expert explained why a POSITA would understand the disclosure to teach a one-time correction—not frame-by-frame leveling (Ex. 2021, ¶89).² Despite submitting a Reply declaration, neither Petitioner, nor its expert dispute that a POSITA would understand a camera with a single accelerometer uses a one-time correction. *See* Reply, 10-11. And Petitioner’s expert admitted that he “did not consider” whether you can “do horizon-leveling frame-by-frame” with “an accelerometer.” EX2022, 10:19-13:20. The ***unrebutted*** evidence establishes that a camera with an accelerometer teaches a one-time correction.

Petitioner attempts to pivot to a new embodiment where Thomason states that a rotation sensor with a “plurality of accelerometers” may be used to create “panoramic images.” Reply, 10-11 (citing EX1004, ¶¶15, 41). This

² This is further confirmed by Thomason’s disclosures that the camera “measures the angle of the camera to the vertical,” and that “this angle” (note, singular) is “recorded in the memory.” EX1004, ¶29.

is an untimely new argument. *See Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1366-1367 (Fed. Cir. 2023). In any event, Thomason’s multi-accelerometer disclosure is not applied in a horizon-leveling application, but rather is used to create a “panoramic” image, as both experts have testified. EX1018, 116:5-117:11, 121:16-123:7; EX2041, 92:15-93:5. That Thomason describes a plurality of sensors *only* in the context of creating panoramic images but not horizon-leveling supports PO’s argument.

Fifth, Petitioner’s claim that Thomason would be understood to teach determining the size of the viewing window frame-by-frame is contradicted by Petitioner’s own later-in-time patent application that describes the state of the art. In that application, Petitioner described “existing technical solutions” as using one of two options. One option was to select a “large” viewing window size which allowed the camera to display more content during gentle motion or when there is minimal tilt, but that resulted in the viewing window exceeding the boundaries of the camera’s image sensor during certain camera movements such that it could not horizon-level. EX2004, ¶¶3-5. The other option was to utilize a “small” viewing window size that could compensate for any rotation and movement, which required sacrificing the field-of-view (“FoV”) displayed to the user. These options are shown below:



They are also described in the '832 patent. EX1001, 11:37-41, 18:15-8.

Finally, neither the Petition nor the Reply include any mention of Pacurariu for this limitation.³ This is because Pacurariu does not disclose determining the size of the viewing window as function of progress. Rather, Pacurariu discloses the opposite: selecting a window size that it is small enough to compensate for “any rotation” that may occur across the video without changing size. EX1005, ¶¶44, 42; EX2021, ¶90. Thus, to the extent a POSITA were to combine Thomason-Pacurariu, the system would select a

³ Petitioner attempts to sneak into its expert’s reply declaration an argument that “Pacurariu also discloses this limitation.” EX1019, ¶49. Petitioner’s citation to the “declaration[], without discussion [in the Reply] constitute[s] improper incorporation by reference.” *Medivis*, IPR2023-00042, Paper 37 at 5 (PTAB April 23, 2024). And because the Petition and Reply do not include any discussion of Pacurariu for these claims (Pet., 37-39; Reply, 11-12) it is an improper new argument. *See Yita*, 69 F.4th at 1366-1367. The newly cited disclosure also fails on its own merits because it refers to the ability to accept a user selection (which is not frame-by-frame) that changes the window size. EX1005, ¶40.

fixed viewing window that is small enough to allow for “any rotation” without needing to re-size the viewing window frame-by-frame, as disclosed in Pacurariu and the state of the art as characterized by Petitioner’s own patent application.

B. Thomason-Pacurariu Does Not Render Obvious “Simulate Changes In Zoom” (8/18)

Petitioner argues disclosure by Thomason for these claims. As discussed above, Thomason does not disclose frame-by-frame horizon-leveling, let alone changing the viewing window size across frames.

Moreover, Thomason also fails for the independent reason that it does not disclose “simulate changes in zoom.” POR, 32-34. The ’832 patent’s approach of determining a viewing window frame-by-frame was a new approach that yielded unpredictable results which the inventors had to overcome. Changing the viewing window frame-by-frame changes the output FoV which a user can experience as rapid zooming-in and zooming-out of the image. EX1001, 18:33-38; EX2021, ¶¶36, 94. The ’832 patent thus describes a technique for managing this pumping problem: “the viewing window may be *artificially* made smaller and/or larger....” EX1001, 19:38-42; *see also id.*, 19:55-20:7 (describing various embodiments of artificial zoom curves). Petitioner’s expert does not dispute that re-sizing the viewing window can result in this pumping effect and was unable to say whether it was a recognized

problem in the field. EX2024, 31:5-35:4. And Thomason does not discuss the pumping effect or any disclosure as to how to address it.

Petitioner argues that GoPro seeks to limit the claims to “implementing a ‘smoothed zoom curve.’” Reply, 14. Not so. Although “[t]he artificial (*i.e.*, simulated) zooming can be implemented using a ‘smoothed zoom curve 604’” (POR, 34), PO is not asserting that the claims are limited to the specific smoothed zoom curve embodiment. Any one of the various “artificial” zoom effects described by the Patent would satisfy claim 8.⁴ EX1001, 19:55-20:7

Petitioner now clarifies that it *agrees* claim 8 is narrower than claim 7. Reply, 13. Petitioner maps the additional requirements of claim 8 to the resizing effect from Thomason Figure 3d to 3e. *Id.* But, merely resizing an image as shown in Figure 3e does not create a zoom effectsimulated or otherwise. Figure 3e merely scales up the image of Figure 3d without any change in the scene depicted in the frame. Indeed, Petitioner’s expert admitted that Figure 3d already depicts a zoom effect over Figure 3c. EX2024, 75:20-76:17. Petitioner fails to show that Thomason discloses claims 8 and 18.

⁴ Petitioner claims that PO’s argument is inconsistent with its ITC argument. Not so. In the ITC case, GoPro identified an “AutoFoV algorithm” that calculates the FoV of the viewing window that implements a smooth, controlled zoom effect. EX1027, 140; *see also* EX2021, ¶169. Thus, PO’s products implement a controlled zoom effect using a smoothed zoom curve.

Finally, Petitioner newly argues that Pacurariu discloses “calculating smoothed rotation data.” Reply, 14. The Board should decline to consider this new argument. Further, Petitioner’s assertion that smoothing rotation data somehow results “in smoothed/gradual change in the size of the viewing window and thus a ‘smoothed’ zoom effect” lacks support. Pacurariu merely discloses that “tilt angle data may be filtered or smoothed.” EX1005, ¶66; EX2041, 94:9-12. Petitioner’s expert admitted that tilt angle data may be smoothed for purposes unrelated to window smoothing or a zoom effect, such as eliminating “noise measurements.” EX2041, 95:10-96:18.

C. Thomason-Pacurariu Does Not Render Obvious Determining A “Location” Of The Viewing Window (10/20)

Claim 10 and 20 narrow claims 1 and 11 by further requiring determining the “placement” of the viewing window, including its “location,” frame-by-frame.

First, Petitioner relies solely on disclosure by Thomason for this limitation. But Thomason does not disclose frame-by-frame horizon-leveling, thus does not disclose determining a window location frame-by-frame.

Second, Petitioner cannot rebut PO’s showing that Thomason (and Pacurariu) disclose a viewing window whose location is fixed in the image center, without any possibility of changing its placementlocation. POR, 37-40. Petitioner does not identify any disclosure that teaches the capability for

determining anything other than a fixed-center location. Simply rotating the viewing window is not enough. The claims distinguish determining a “rotation of the viewing window” (Claim 9) and a “location of the viewing window” (Claim 10). So does the specification. EX1001, 6:52-58 (“the placement (rotation, location, shape, and/or size) of the viewing window...”), 15:6-9, 24:62-65.

Petitioner also incorrectly claims that PO is asking the Board to require a determination of an “x-y coordinate” that must “change” across frames. Reply, 15; *id.*, 5-6. The question is not whether determining location of the viewing window requires the viewing window to actually change. There may be circumstances where location is determined to be the same across frames. However, the claim requires a process that *allows* for change. POR, 35-36. Thomason (and Pacurariu) lack such a process. *Id.*, 37-39.

Petitioner argues that Thomason discloses determining a location of the viewing window because the “viewing window in Fig. 3d [of Thomason] appears not perfectly centered with respect to the original image.” Reply, 15. It far from clear that Figure 3d is “not perfectly centered” or, assuming it is, that this was an intentional aspect of the illustration. Because Petitioner’s argument relies solely on figures, as opposed to any technical description in the specification, it must be rejected. *Hockerson-Halberstadt, Inc. v. Avia*

Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000) (“[P]atent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.”)

D. Thomason-Pacurariu Does Not Render Obvious Frame-By-Frame Horizon-Leveling (Claims 1 And 11)

Thomason does not disclose Claims 1 and 11 because it does not include any disclosure of frame-by-frame horizon-leveling. POR, 29-30; *see also* Section III.A.

Petitioner argues GoPro’s argument regarding Thomason is “moot” because frame-by-frame horizon-leveling is allegedly obvious in view of Pacurariu, which would be obvious to combine with Thomason. Reply, 7. The Petition, however, included only conclusory statements that parrot language from *KSR*. Pet., 23-24. “[T]he conclusory assertions in [Petitioner’s expert] declaration do not provide substantial evidence for finding a motivation to combine” or a reasonable expectation of success. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015).

PO’s expert has submitted a declaration rebutting Petitioner’s conclusory assertion and providing detailed technical explanations of why a POSITA would not combine Thomason and Pacurariu. EX2021, ¶¶116-119.

Additionally, Petitioner fails to articulate why a POSITA at the relevant time would recognize any drawback with Thomson’s application of a one-

time tilt correction to videos that would motivate combination with Pacurariu. *See Kinetic Concepts, Inc. v. Smith and Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed. Cir. 2012) (“[B]oth of these references independently accomplish similar functions.... Because each device independently operates effectively, a person having ordinary skill in the art, who was merely seeking to create a better device... would have no reason to combine the features of both devices into a single device.”).

IV. GROUND 2: THOMASON, PACURARIU, AND WATANABE

A. Watanabe Does Not Render Obvious Claims 3-4 and 13-14

The ’832 patent inventors recognized a problem in the prior art wherein horizon-leveling may be “imperfect.” EX1001, 21:40-22:25. The ’832 patent solves this by introducing distortion such that the “off-axis horizon may be less noticeable.” *Id.*; *id.* at 2:27-36, Fig. 7. This invention is captured in Claims 3-4 and 13-14.

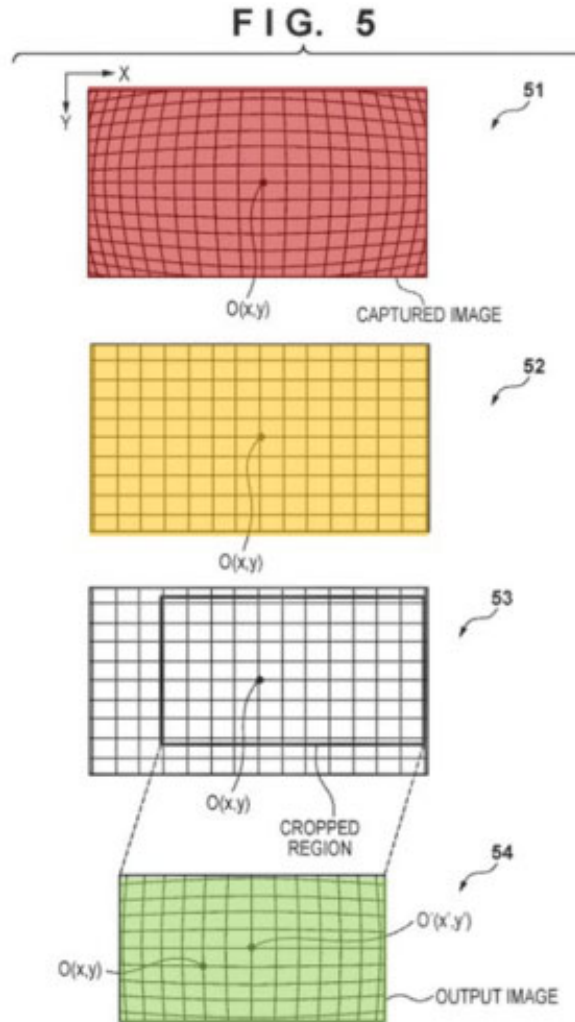
First, where, as here, the prior art fails to disclose a limitation, the invention likely is not obvious. *See University of Strathclyde*, 17 F.4th at 160-62; *Eli Lilly*, 845 F.3d at 1374; *In re Assett Guard Products, Inc.*, 2022 WL 1097363, at *5-*6. GoPro showed that *none* of Petitioner’s references disclose introducing a distortion to reduce the impact of an off-axis horizon. POR, 15-16. This fact stands un rebutted. Petitioner relies upon Watanabe for

its disclosure that distortion may exist within a camera, but concedes that it does not disclose horizon-leveling. It is also undisputed that Thomason and Pacurariu do not disclose the crux of the limitation: masking the imperfect horizon using distortion. In fact, these references recognized that a horizon may be off-axis, but neither reference came to the solution in the '832 patent. This rebuts the conclusory assertion of Petitioner's expert that "a POSITA would understand the existence of distortion in image 54 would reduce the impact of an off-axis horizon." Reply, 18.⁵

Second, Claim 1 requires generating horizon-leveled "based on the viewing window" which defines the "extents of the visual content" that are to be punched out, and Claim 3 further specifies that the visual content within the viewing window contains a distortion. POR, 17-20. Thus, Claim 3 requires that the original visual content, prior to horizon-levelling, must include distortion. Watanabe fails to teach any image processing on a

⁵ Petitioner resorts to arguing that PO is contradicting its position before the ITC by arguing that the claims require "more than the mere existence of distortion." Reply, 17. The only evidence of this supposed inconsistency is an excerpt from the trial testimony of PO's ITC expert, which Petitioner claims does not sufficiently discuss the accused algorithm. *Id.* (EX1017, 2696:14-20). But there is nothing inconsistent about this testimony, and Petitioner's argument is misleading because the testimony is supported by hundred pages of reports in which GoPro's expert describes testing and source code that shows how the accused products utilize distortion modes to reduce the impact of an off-axis horizon.

distorted image because it removes the distortion and only then performs anti-shake correction on an image with no distortion. *Id.* at 18-20. This is shown in Figure 5, with the distortion removal shown in step 52 (yellow) prior to the reintroduction of distortion at step 54 (green):



Reply, 20 (citing EX1006, Fig. 5; annotations added by Petitioner).

Petitioner argues that “the visual content” recited in Claim 1 does not need to be the “original visual content.” Reply, 2-3. But Claim 1 recites that

the system obtains “video information defining a video,” and that the video information includes “***visual content*** captured at different moments” by the “image capture device.” The “***horizon-leveled visual content***” is generated by including within a punchout “the extents of the visual content defined by the viewing window.” Thus, Claim 1 draws a clear distinction between “visual content” and “horizon-leveled visual content,” and its overall structure indicates that “***the visual content***” refers to the original visual content. Claim 3 further requires that “***the visual content*** includes a distortion” that reduces the impact of an off-axis horizon, while Claim 4 recites the type of distortion.

Petitioner chooses not to grapple with the claim language. Instead, Petitioner reproduces a portion of the specification that references an “indirect transformation” embodiment which removes the existing distortion in the original visual content. Reply, at 3 (citing EX1001, 23:1-3). But Petitioner omits the immediately preceding passage which discloses “a direct transformation that changes the existing distortion [*i.e.*, the distortion in the visual content] to the desired distortion.” EX1001, 22:66-23:1. It is not necessary that each claim read on every embodiment. *See August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1285 (Fed. Cir. 2011). The plain language of claims 3-4 cover the “direct transformation” embodiment.

Once the claim language is properly interpreted, Petitioner's expert all but admits that the claimed approach was not obvious at the relevant time. In his Reply declaration, Dr. Katsaggelos opines that a POSITA would "understand that it makes sense to first perform horizon-leveling and ***then add distortion to fix any imperfect horizon levelling.***" EX2019 ¶ 20. Dr. Katsaggelos opines that the claimed approach, of using pre-levelling distortion for this purpose, "makes no sense." EX2019 ¶ 20.

Finally, Petitioner argues Watanabe does not remove the distortion in the original visual content and reintroduce a different distortion. Reply, 19. This argument is contradicted by Watanabe. EX1006, 11:20-24 ("image distortion shown in 51 of FIG. 5 is corrected (removed)") Petitioner attempts to rely upon new disclosures not discussed in the Petition (Reply, 19-20), but these disclosures are untimely and merely confirm that after completely removing the distortion in the original visual content, Watanabe may add a new distortion that is "assumed" to reduce the distortion effect of the photographic lens by about "30%." EX1006, 9:52-60; POR, 13-14. Moreover, Petitioner does not explain *why* a POSITA would modify

Thomason-Pacurariu, particularly given that Thomason-Pacurariu disclose cameras without distortion. POR, 21-24.⁶

B. Watanabe Does Not Render Obvious Claims 6, 16

Claim 6 and 16 require that distortion be applied *before* the image is processed into the claimed “horizon-levelled visual content.” POR, 24-27. Watanabe is not directed at horizon-levelling and certainly does not teach adding distortion to an image before image correction.

V. GROUND 3: VOSS AND DERBANNE

A. Voss-Derbanne Does Not Render Obvious Frame-By-Frame Horizon-Leveling (Claims 1 And 11)

GoPro showed that Voss’s “inset rectangle 225” (the alleged “viewing window”) does not satisfy Claim 1 because Voss contemplates the creation of a completely separate, post-capture “output rectangle” that may have different content and shape from the purported “viewing window.” POR, 57-58.

Petitioner argues that the horizon-leveled visual content must merely include a punchout of the extents of the visual content defined by the viewing window, and attempts to frame the dispute as PO asking the Board to “replace ‘including’ with ‘equating.’” Reply, 27. This is a strawman. The deficiency of Voss is that it is not configured to determine a viewing window “*defining*

⁶ Petitioner attempts to raise a new theory that claims 3-5 and 13-15 are obvious based on Thomason-Pacurariu alone. Reply 24; Ex. 1019 at ¶83. This is a new theory that the Board should strike. *See* Paper 37, 1-3.

extents of the visual content to be included within horizon-leveled visual content.” PO, 57-58. Rather, depending on device orientation, content within Voss’s “inset rectangle” is cropped out of the horizon-levelled content.

Claim 1 recites a system for horizon-leveling videos that is “configured by machine-readable instructions” to determine a viewing window, “the viewing window *defining extents* of the visual content to be included within horizon-leveled visual content” and then “generate[s] the horizon-leveled visual content based on the viewing window” by “including a punchout of the extents of the visual content defined by the viewing window.” Thus, to satisfy Claim 1 the system must be configured to determine a viewing window that bounds the content that is eventually horizon-leveled. PO, 57-58. Petitioner’s expert admitted that he understood the claim to require this. EX2041, 13:2-15:8, 15:10-16:7 (testifying that a system that cropped visual content and did not include everything that was in the viewing window in the horizon-leveled visual content would have a system configuration that did not meet the claim).

Petitioner’s Reply confirms that Voss is not configured as required by the claim. Voss’s output rectangle is configured to “oscillate between” transforming the inset rectangle content through a process of “fill[ing]” (“*cropping data*” within the inset rectangle to create the output box) and “fit[ting]” (“blackening out any unused area with ‘letter boxing’ or ‘pillar

boxing.”). *Id.*; EX1007, 10:17-11:2. Petitioner concedes that when the output box is created through filling (*i.e.*, cropping content), Claim 1 is not satisfied. Reply, 27. Indeed, Petitioner quotes Voss’s disclosure of filling and fitting and then relies solely on the fitting. *Id.*

Petitioner argues that fitting includes the extents of the visual content defined by the inset rectangle, using letter or pillar boxing to black out unused area. *See* Reply, 27. This argument, even if accepted, would not show Claim 1 is satisfied because Voss states that its system is configured to “oscillate between being optically filled 260 (during 16:9 portions) and fit with pillar boxing 250 (during 1:1 portions).” EX1007, 10:21-11:2.

Because it is undisputed that filling does not generate horizon-leveling visual content that includes a punchout of the extents of the visual content defined by the viewing window, Voss’s system is not configured as required by Claim 1. PO, 57-58. As GoPro previously explained, this speaks to the fundamental difference between the “inset” rectangle in Voss and the “viewing window” claimed by the ’832 patent. The fact that Voss’s differently configured system may in some instances result in an output rectangle that happens to include the entire inset rectangle with black bars filling the excess space, does not mean that Voss is configured to generate horizon-leveled visual content by punching out the extents of the viewing

window, as required by Claim 1. *In re Facebook, Inc.*, 2018 WL 3860547, *2 (Fed. Cir. 2018) (prior art did not disclose “a rule requiring the elements to be contiguous” where system “happened to result in contiguity” in some instances); *Rex Med., L.P. v. Intuitive Surgical, Inc.*, 2020 WL 2128795, at *5 (D. Del. 2020) (“Configure, as defined by dictionaries, means set up for operation especially in a particular way.”).

Petitioner’s reliance on Derbanne does not cure the deficiency. GoPro showed, and Petitioner does not dispute, that Derbanne is not directed to horizon-leveling. POR, 52-55. Thus, Derbanne does not disclose determining a “viewing window” and “punchout” that “effectuate horizon-leveling of visual content,” as recited in Claim 1. Moreover, merely applying Derbanne’s punch-out technique to Voss’s inset rectangle does not satisfy Claim 1 because the combined system would still be configured to transform the punched out inset rectangle into an output box by oscillating between filling and fitting, as discussed above. This is an integral part of Voss’s invention which seeks to correct situations where a user “may start filming with the camera in a vertical orientation and change to a horizontal orientation.” EX1007, 2:4-11.

Finally, the Petition’s motivation to combine Voss and Derbanne was conclusory, and even now Petitioner does not identify any deficiency that a

POSITA would recognize in the approach of Voss that would motivate a combination with Derbanne. *Kinetic*, 688 F.3d at 1369.

B. Voss-Derbanne Does Not Render Obvious Determining The Viewing Window Size Frame-By-Frame (Claims 7/17)

Even assuming Voss’s inset rectangle is a “viewing window,” Petitioner still fails to demonstrate that Voss determines the size of this viewing window frame-by-frame (“as a function of progress”). POR, 61-63.

Petitioner claims Figure 2 of Voss and alleges that if one looks hard enough at the illustrations they may be able to tease out a very slight difference in the size of the middle inset rectangle. Reply, 28.⁷ Slight variations in the figure cannot disclose determining the viewing window size frame-by-frame as a matter of law. *See Hockerson-Halberstadt*, 222 F.3d at 956. Voss’s actual technical description does not describe any change to the inset rectangle size. Moreover, it is not clear from the figures that any difference in size was intended, particularly given that contradictions exist between Voss’s description and Figure 2. POR, 50-51, 62; EX2030, ¶3.2.

⁷ Petitioner also states that “Dr. Foroosh testified that the rightmost blue box ‘appears larger than the other two.’” Reply, 28. But in fact, Dr. Foroosh testified that looking with the “naked eye” there may be slight differences in size, but that the figures and description don’t indicate that those differences were intentional or otherwise teach determining the size of the viewing frame-by-frame. EX1018, 192:10-12.

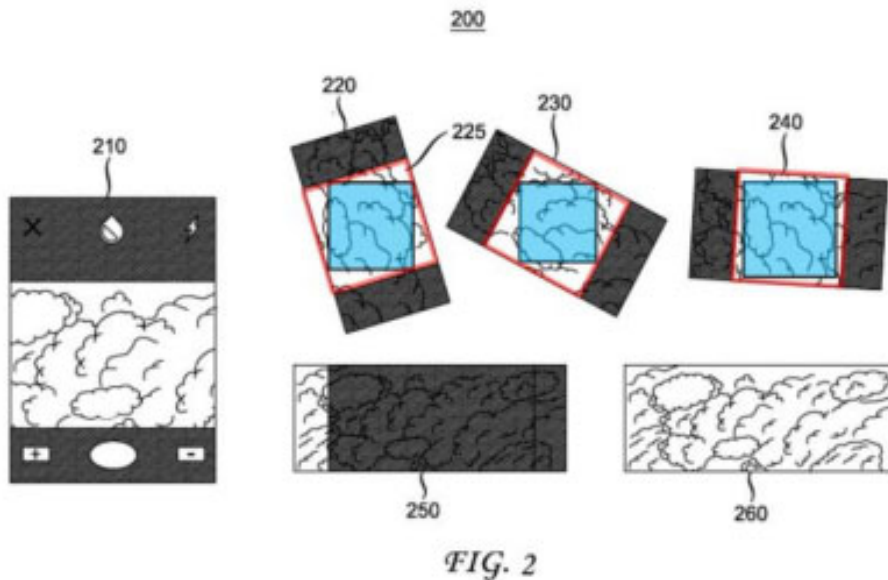
Petitioner also relies on Voss’s statement that “inner rectangle 225 is inscribed optimally inside the maximum available bounds of the overall sensor minus the padding.” EX1007, 10:7-9. This is a new argument—the original Petition did not identify this disclosure or argue that it discloses changing the size of the viewing window, and it should therefore be disregarded. In any event, the World Patent Office concluded this newly cited disclosure was also “unclear.” EX2030, ¶3.2. Moreover, this statement makes no mention of determining the size of the viewing window frame-by-frame. Rather, it is consistent with the conventional approach, as disclosed in Pacurariu, of inscribing a fixed-size viewing window within the maximum available bounds of the sensor minus some padding to accommodate device rotations. As discussed above (*see* Section III.A), Petitioner’s own patent application described the state of the art as utilizing fixed-size viewing windows inscribed within the bounds of the overall sensor minus padding.

C. Voss-Derbanne Does Not Render Obvious Simulating Changes In Zoom (Claims 8/18)

Because Voss is not configured to determine a viewing window “defining extents of the visual content to be included within horizon-leveled visual content” and does not disclose re-sizing the viewing window, it cannot disclose Claims 8 and 18. Nor is there any teaching regarding simulating changes in zoom.

D. Voss-Derbanne Does Not Render Obvious Determining A “Location” Of The Viewing Window (10, 20)

Figure 2 of Voss shows the alleged viewing window is always centered:



POR, 66.

Petitioner attempts to pivot to a new embodiment: Figure 4. Reply, 31. The Petition, however, relied only on the embodiment of Figure 2. Pet., 78. Thus, the Board should give no weight to Petitioner's new argument. *See Yita*, 69 F.4th at 1366-1367. In any event, Figure 4 illustrates a single alleged viewing window from a different device than that in Figure 2. There is no disclosure that the location of that viewing window changes across frames.

Petitioner argues that Derbanne renders this limitation obvious. Reply, 30-31. This is another improper new argument. *See* Paper, 37, 3-5. Derbanne does not disclose the claimed viewing window. *See* Section V.A. Moreover,

because this argument was not advanced in the Petition, the Petition does not articulate *how* or *why* a POSITA would modify Voss to arrive at these claims. Pet., 77-78.

VI. GROUND 4: VOSS, DERBANNE, AND WATANABE

Petitioner’s Ground 4 merely refers to its Ground 2 arguments. Reply, 32-33. Thus, these arguments fail for the reasons discussed in connection with Ground 2.

VII. OBJECTIVE INDICIA

A. GoPro’s Horizon-Leveling Feature Practices The ’832 Patent

Petitioner does not dispute that GoPro’s Horizon-Leveling feature practices Claim 1.

Petitioner argues that GoPro is “silent” on how the Horizon-Leveling features practices Claims 3-4. Reply, 33. But GoPro’s expert showed that the Horizon-Leveling feature applies a Superview projection that introduces a barrel distortion to make an off-axis horizon look less noticeable:



EX2021, ¶168. The evidence is unrebutted.

Petitioner does not dispute that GoPro’s Horizon-Leveling feature practices Claim 7, but argues that GoPro did not explain how the Horizon-Leveling feature “simulates changes in zoom” for Claim 8. Reply, 33. But again, this is not correct. GoPro’s expert showed that the source code for the Horizon-Leveling feature includes an “AutoFov” function that expressly determines and adjusts the viewing window size frame-by-frame to “simulat[e] changes in zoom.” EX2021, ¶169. The evidence is unrebutted.

Petitioner also did not dispute that GoPro’s Horizon-Leveling feature practices Claims 1, 3-4 and 7-8 in the ITC investigation and the ALJ expressly found that these claims were practiced by GoPro’s products. EX1027, 140. Claims 1, 3-4 and 7-8 are system claims that correspond to method claims 11, 13-14, 17-18. Thus, claim 11, 13-14 and 17-18 are also practiced.

B. Nexus

Petitioner argues that there is no nexus between the Horizon-Leveling feature and the objective evidence because the GoPro devices had “other features” that users found desirable. Reply 33-34. But “[a] patent owner is entitled to a presumption of nexus when it shows that the asserted objective evidence is tied to a specific product that ‘embodies the claimed features, and is coextensive with them.’” *Intex Recreation Corp. v. Team Worldwide Corp.*, No. 2020-1141, 2023 WL 6969790, at *4 (Fed. Cir. 2023); *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373-74 (Fed. Cir. 2019).

Here, GoPro established a presumption of nexus by showing that the same Horizon-Leveling feature valued by customers is coextensive with the claimed invention. For instance, GoPro submitted consumer surveys that showed GoPro’s “Horizon-Leveling” feature was one of the top reasons for the success of the GoPro devices. EX2021, ¶¶177-179; EX2018, 23; EX2019, 14. That is all that is required to show nexus. The law “do[es] not require the patentee to prove perfect correspondence to meet the coextensiveness requirement,” but merely that “the product is essentially the claimed invention.” *Fox Factory*, 944 F.3d at 1374.

C. Copying And Unmet Need

Petitioner argues that GoPro’s copying evidence reflects “benchmarking.” Reply 35. But GoPro presented substantial evidence that Petitioner repeatedly analyzed GoPro’s patented features, including the Horizon-Leveling feature. EX2021, ¶172; EX2032-2034. Petitioners’ engineers attempted to “*align*” their products with GoPro’s Horizon-Leveling feature. *Id.* This goes beyond benchmarking. *See Apple Inc.*, 839 F.3d at 1054 (“The record contains multiple internal Samsung presentations given by different Samsung groups at different times stating that the iPhone’s slide to unlock feature is better than the various Samsung alternatives. And many of these same presentations conclude that the direction for improvement is for Samsung to modify its unlocking mechanism to be like the iPhone. This is ***substantial evidence of copying*** by Samsung, and it supports the jury’s verdict that the claimed invention would not have been obvious.” (citations omitted)).

GoPro also showed that the same engineers reverse-engineering GoPro’s products attempted to patent the dynamic FoV algorithm that implements viewing window re-sizing. EX2021, ¶173. Further the patent application refers to viewing window size re-sizing as an advancement over “existing algorithms” that utilized a “fixed FoV for the output video,” *i.e.*, a fixed size window. *Id.*, ¶2 (“Background”: explaining that “existing technical

solutions” had “inherent flaws” by using a “fixed FOV for the output video”), ¶11 (proposing determining viewing window size for each frame). This evidence shows copying and that Petitioner itself recognized a long felt need in the art.

VIII. CONCLUSION

Petitioner has not shown the challenged claims to be unpatentable.

Date: August 29, 2025

By: /s/ James Glass

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CERTIFICATE OF LENGTH (37 C.F.R. §§ 42.24)

The undersigned hereby certifies that, according to the word-processing system used to prepare the foregoing document, this document has 5,452 words and thus complies with the applicable word limit.

Date: August 29, 2025

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CERTIFICATE OF SERVICE (37 C.F.R. §§ 42.6(E), 42.105(A))

The undersigned hereby certifies that the foregoing document was served in its entirety on August 29, 2025 upon the following parties via

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