

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 PRELIMINARY RESPONSE

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PUBLIC VERSION**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	████████████████████ 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	████████████████████ 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	████████████████████ produced as GOPRO_00063381 in <i>In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith</i> , Inv. No. 337-TA-1400

PUBLIC VERSION**I. INTRODUCTION**

Founded in 2002 in San Mateo, California, Patent Owner GoPro, Inc. (“Patent Owner” or “GoPro”) is a pioneer in developing cameras and digital imaging techniques, particularly for mountable and wearable use cases. As a company built on innovation, GoPro has received numerous patents protecting its technological improvements, including on wide-angle views and horizon-leveling. GoPro has become a leader in the industry, receiving scores of industry praise from professionals and consumers alike. Petitioner is a recent entrant into this market that has found significant success by copying GoPro’s designs and innovations, including the patent at issue in this proceeding.

U.S. Patent No. 11,336,832 (the “’832 patent”) discloses a novel system for performing horizon-leveling of a recorded video using rotational data. In prior art systems, horizon-leveling in a video was accomplished using rudimentary methods such as recording the rotation data at the time of frame capture, rotating the frame in the opposite direction, and cropping the frame to meet the desired aspect ratio. While such a methodology may work for traditional cameras, it was not suitable for the wearable sports cameras that GoPro developed which experienced a greater intensity of movement. In such

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situations, the amount of adjustment for each frame can vary significantly from frame to frame. Thus, the '832 patent introduced the novel feature that determines a viewing window for each frame as “*a function of progress*”—that is, each viewing window is not just processed individually using the rotation data recorded for that frame, but is instead processed as one part of the whole video, such as considering the ideal viewing window of neighboring frames. This allows, for example, choosing a viewing window for each frame that provides a much smoother transition from frame to frames.

At the outset, each of Petitioner’s combinations suffer from a fatal defect, in failing to identify a motivation to combine or reasonable expectation of success beyond the mere recitation of language from *KSR*. An articulated rationale is required from any obviousness analysis, and Petitioner’s failure to provide one warrants denial of institution.

Moreover, Petitioner’s prior art does not disclose anything resembling a determination of a viewing window as *a function of progress*. Instead, Petitioner asserts that the prior art meets this limitation simply by virtue of processing frames within a video. This, however, cannot be true because the claims elsewhere already require processing video frames using per-frame rotation data. Petitioner’s theory therefore would render superfluous the

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claim's requirement that the viewing window is determined *as a function of progress*.

II. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes that the level of a POSITA at the time of the '832 patent "would have a bachelor's degree in engineering or computer science, or equivalent field, and two years of experience working on image or video processing, or digital cameras" or "four years of experience working on image or video processing, or digital cameras." Pet. 6.

For purposes of this preliminary response, Patent Owner applies Petitioner's proposed level of skill. Ex. 2001, ¶¶19-20. Patent Owner's expert, Dr. Hassan Foroosh, was a POSITA under Petitioner's definition at the time of the '832 patent. *Id.*, ¶21.

III. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms receive their plain and ordinary meaning in light of the specification of the patent in which they appear, the same standard as used in district court. 37 C.F.R. § 42.100(b); *see Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Ex. 2001, ¶¶36-37. Patent Owner submits that no terms need to be expressly construed and they can be

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given their ordinary and customary meaning in light of the specification. Ex. 2001, ¶34.

IV. PETITIONER HAS FAILED TO ESTABLISH A REASONABLE LIKELIHOOD OF SUCCESS OF UNPATENTABILITY FOR ANY CLAIM

As an initial matter, despite relying on obviousness combinations for each ground of challenge, Petitioner fails to provide a non-conclusory, articulated motivation to combine or reasonable expectation of success for each of its obviousness combinations. Instead, Petitioner simply alleges without specificity that the combination would be an improvement by parroting language from *KSR*. *Second*, Petitioner fails to show that any of the references, whether alone or combined, disclose the determination of a viewing window as a ***function of progress***. Petitioner's assertion that the limitation is met by the prior art's disclosure of performing horizon-leveling for each frame in a video or using per-frame rotation data fails because such functions are claimed elsewhere and would render this limitation superfluous and strip the patent of its inventive feature.

PUBLIC VERSION**A. All Grounds: Petitioner’s Alleged Motivations to Combine and Reasonable Expectation of Success Are Conclusory And Lack Specificity**

For all grounds, Petitioner’s alleged motivations to combine and reasonable expectation of success are either completely missing or conclusory and non-substantive. Ex. 2001, ¶¶35-36. Petitioner’s failure to provide a sufficient articulation of a necessary element of its obviousness combinations is reason alone to deny institution.

In order to establish obviousness, Petitioner has the burden of providing “some articulated reasoning with some rational underpinning.” *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). In addition, a reasonable expectation of success is a necessary and indispensable element of showing obviousness, and a failure to establish it requires denial. *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018) (“An obviousness determination requires finding that a POSITA would have been motivated to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so.”). Although the analysis is flexible, it “cannot be sustained by mere conclusory statements.” *Id.* As the Federal Circuit has explained, “the factual inquiry whether to combine references must be **thorough and searching**, and the need for specificity

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pervades our authority.” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (quotation marks removed)¹. Thus, the Board should reject petitions that “lack[] the factual substantiation necessary for an obviousness evaluation.” *Wasica Finance GmbH v. Continental Auto. Systems*, 853 F.3d 1272, 1286 (Fed. Cir. 2017).

1. Grounds 1 and 2: Thomason in view of Pacurariu

For Grounds 1 and 2, Petitioner has failed to meet its burden to establish any rational reason to combine Thomason and Pacurariu or why a POSITA would reasonably expect success. Petitioner’s “rationale” to combine the references is merely a series of conclusory statements that parrot language from *KSR* and do not provide any specificity beyond that. The entirety of Petitioner’s analysis is reproduced below:

Combining the technical features of Pacurariu with the teachings of Thomason would improve the horizon-leveling capabilities of Thomason in the same way. (*Id.*) Combining the teachings of Thomason and Pacurariu as such would yield predictable results of effectively and efficiently horizon-leveling video data. (*Id.*) Further, it would have been obvious to try combining the technical features of Pacurariu with the teachings of Thomason, as there is a finite number of identified, predictable solutions, without requiring much effort and with a reasonable expectation of success. (*Id.*) The known benefits of Pacurariu would prompt the application of Pacurariu in the same field based on design incentives and other market forces. (*Id.*)

¹ All emphases added unless otherwise noted.

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Pet. 23-24. Petitioner’s expert provides the same unexplained, conclusory statements as the Petition. Ex. 1002, ¶81. As is clearly evident, Petitioner’s rationale is essentially that Pacurariu would somehow improve Thomason, but Petitioner provides no articulated reasoning for how the combination would result in an improvement or why it would yield predictable results or why there would be a reasonable expectation of success. Ex. 2001, ¶¶36-38. Petitioner also asserts the combination would be “obvious to try” by merely parroting the standard for that doctrine. *KSR*, 550 U.S. at 421 (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”). Yet Petitioner does not articulate what the “finite number of identified, predictable solutions” are, nor explain what “design incentives and other market forces” would give reason to a POSITA to try the combination. Ex. 2001, ¶39.

Petitioner’s failure to provide an adequate articulation of the reasons to combine the references further fails because it is not directed to providing a rationale to combine the particular teachings identified in Thomason and Pacurariu. Ex. 2001, ¶40. Specifically, Petitioner asserts that the combination would use the “tilt value as taught by Pacurariu ... obtained for each frame in

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Thomason’s video content [and] saved as metadata or as part of each video frame as taught by Pacurariu, and be used to generate a rotated image for each video frame in Thomason’s video content.” Pet. 23. However, none of Petitioner’s analysis explains why a POSITA would be motivated to incorporate Pacurariu’s per-frame tilt values into Thomason, how that would yield predictable results or a reasonable expectation of success, or why that particular combination would be obvious to try. Ex. 2001, ¶40.

Nor can Petitioner argue, as an alternative, that Thomason or Pacurariu alone anticipate or render obvious any of the challenged claims. Ex. 2001, ¶¶41-42. Petitioner does not even assert that Pacurariu discloses all of the limitations. *See, e.g.*, Pet. 13-19 (not relying on Pacurariu for limitations 1[pre] through 1[b]).

As for Thomason, Petitioner does not assert that it alone renders obvious any challenged claim. *See* Pet. 8. Moreover, Thomason fails to disclose the limitation 1[c]’s “rotational position information characterizing rotational positions of the image capture device ***as a function of progress through the capture duration.***” While Thomason discloses storing “angle data representing the angle measured by the rotation sensor,” it never discloses that it captures such data as ***a function of progress*** of the captured

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video's duration. Ex. 2001, ¶43. Indeed, Thomason merely discloses “process[ing] the recorded image data 8 [*i.e.* the captured video] and ***rotation angle***,” indicating that the rotational information is captured for the video as a whole, not as a function of ***progress*** through the video. Ex. 1004, ¶32.

Thomason also does not disclose “determin[ing] a viewing window” including “placement of the viewing window,” from which is generated “horizon-leveled visual content” by “a punchout of the extents of the visual content defined by the viewing window.” Instead, Thomason discloses that the replay processor applies “a rotation correction” to the image data. Ex. 1004, ¶36; Ex. 2001, ¶44. Indeed, Petitioner describes Thomason's method as “rotat[ing the image] such that the visual content is horizon-leveled ... and some outer pixels ... are cropped.” Pet. 24-25. In other words, Thomason performs horizon-leveling by rotating and cropping an image instead of the claimed method of placing a viewing window in the image and punching out the portions of the image captured in the viewing window. Ex. 2001, ¶44.

Furthermore, as discussed below, Thomason does not disclose determining a viewing window ***as a function of progress***. Ex. 2001, ¶45.

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Thus, Petitioner’s conclusory statements for its “rationale” to combine Thomason and Pacurariu cannot sustain an obviousness challenge under the standards set out by the Federal Circuit and the Supreme Court.

2. Grounds 3 and 4: Voss in view of Derbanne

As for Grounds 3 and 4, Petitioner’s rationale to combine is essentially identical to its rationale for Grounds 1 and 2, further highlighting that Petitioner’s motivations to combine are entirely insufficient. The entirety of Petitioner’s analysis is reproduced below:

The Voss-Derbanne combination results in a system in which data (captured video data, rotational position information) is captured, stored, and maintained in accordance with the teachings of Derbanne, and a punchout may be generated, yielding the predictable result of improving the video management and processing capabilities of Voss. (EX1002, ¶184.) A POSITA would be motivated to use the known techniques of Derbanne to improve Voss in the same way. (Id.) Further, it would have been obvious to try combining the teachings of Voss and Derbanne, as these technical features of Derbanne may be combined with the teachings of Voss without requiring much effort and with a reasonable expectation of success. (Id.) The known benefits of Derbanne would prompt the application of Derbanne in the same field based on design incentives and other market forces. (Id.)

Pet. 62. Petitioner’s expert provides the same unexplained, conclusory statements as the Petition. Ex. 1002, ¶184. Petitioner’s rationale to combine is that Derbanne would somehow “improve[] the video management and processing capabilities of Voss”—which is merely a bare assertion of

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improvement that lacks any specificity or explanation as to how the teachings in Derbanne would improve Voss, or be reasonably expected to succeed. *Id.*; Ex. 2001, ¶¶46-47. The remainder of Petitioner’s rationale simply parrots language from *KSR* without any further explanation. Indeed, Petitioner’s “obvious to try” argument does not even recite the proper standard, which requires showing a limited number of “identified, predictable solutions.” *KSR*, 550 U.S. at 421; Ex. 2001, ¶47.

Moreover, Petitioner’s reasons for combining are not in any way directed to the specific teachings from Derbanne that Petitioner wishes to combine with Voss. Ex. 2001, ¶48. For example, Petitioner relies on Derbanne’s disclosure of “defin[ing] visual content viewable as a function of progress through a progress length,” but fails to explain how that teaching in any way improves Voss. Pet. 61 (quoting Ex. 1008, 13:49-53). Nor does Petitioner explain a POSITA would be motivated to incorporate Derbanne’s disclosure of “rotational positions ... as a function of progress,” such as how it would improve Voss’s device. Pet. 67 (quoting Ex. 1008, 5:53-57). As discussed above, Petitioner’s analysis fails to meet the requirements set out by precedent.

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Nor can Petitioner argue, as an alternative, that Voss or Derbanne alone render obvious any of the challenged claims. Ex. 2001, ¶¶49-50. Petitioner does not assert that Derbanne discloses, for example, limitations 1[pre] through 1[b][ii] or limitation 1[d][ii]. Pet. 58-60, 71. And Voss does not disclose “obtain[ing] rotational position information [which] ***characteriz[es] rotational positions of the image capture device as a function of progress.***” Specifically, Voss does not disclose that the rotation data is obtained as a collection of “rotational positions ... as a function of progress.” Instead, Voss discloses that inertial data is continuously sent to the processor so that the processor “continuously synchronizes inset rectangle with the rotational measurement received.” Ex. 1007, 12:14-18; Ex. 2001, ¶51. While the inset rectangle is used to transform the image to compensate for rotation, Voss does not disclose that the rotational data is obtained as a collection of points for multiple frames. Ex. 2001, ¶51. The rotational data in Voss is simply used for the presently recorded frame and then discarded. *Id.*

Furthermore, as discussed below, Voss does not disclose determining a viewing window ***as a function of progress.*** Ex. 2001, ¶52.

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Thus, Petitioner’s conclusory statements for its “rationale” to combine Voss and Derbanne cannot sustain an obviousness challenge under the standards set out by the Federal Circuit and the Supreme Court.

B. Grounds 1 and 2: Petitioner Has Failed to Establish That Thomason and Pacurariu Render Obvious Determination of a Viewing Window as a Function of Progress

Petitioner fails to show that either reference alone or combined discloses determining a viewing window that is *a function of progress*. Ex. 2001, ¶¶53-54. Petitioner’s assertion that performing horizon-leveling in a video and/or using per-frame rotation data meets the limitation fails because such functions are claimed elsewhere and would render this limitation superfluous and strip the patent of its inventive feature.

The challenged claims each recite a “determine a viewing window for the visual content as a function of progress through the progress length.” The Petition fails to establish that this limitation is disclosed or rendered obvious by Thomason or Pacurariu alone or in combination.

1. Thomason

As an initial matter, as discussed above, Thomason does not disclose determining a “viewing window,” since Thomason only discloses rotating a frame and cropping it.

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Regardless, Petitioner fails to explain how the viewing window is ***determined as a function of progress***. Instead, Petitioner merely asserts that because “Thomason discloses that the processed image data can be played back,” that is sufficient to meet the claim. Pet. 27. Missing from Petitioner’s analysis, however, is any notion that the determination of the viewing window is a function of progress. Ex. 2001, ¶55.

Petitioner’s theory is essentially that ***any*** viewing window determined for frames of a video is sufficient to be ***a function of progress*** merely because they are frames of a video that can be played back. Ex. 2001, ¶56. Petitioner appears to be arguing that by placing a viewing window on a frame, the determination is a ***function of progress*** since each frame of a video is viewable as a function of progress. *Id.* This theory must fail because it fails to give meaning to this limitation and is not consistent with the disclosures of the specification. *Id.*

Petitioner’s theory would improperly render the limitation superfluous. *See Wasica Fin. GmbH v. Cont’l Automotive Systems, Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017) (“It is ***highly disfavored*** to construe terms in a way that renders them void, meaningless, or superfluous.”). This is because the claims already require that the frames of the video be a function of progress.

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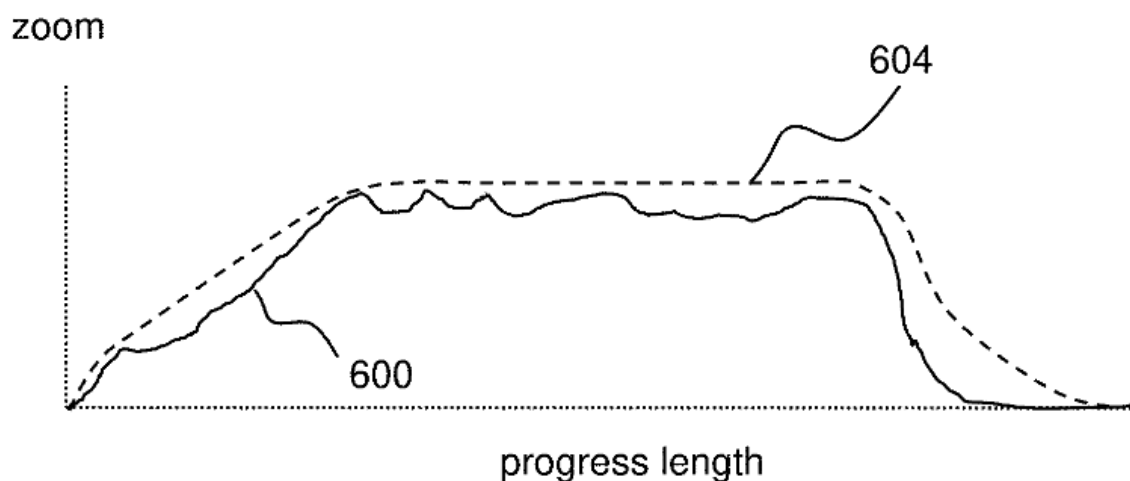
Ex. 2001, ¶57. Specifically, the claims require that the “visual content” is “captured at different moments within the capture duration” and “viewable as a function of progress”—in other words, a frame within a video. Having recited that the visual content is viewable as a function of progress, the claims ***further recite*** that the viewing window within the visual content is determined as a function of progress. Ex. 2001, ¶57. Thus, the determination of the viewing window as a function of progress must mean more than simply placing it within a frame. *Id.*

The specification provides several examples of determining a viewing window as a function of progress. Ex. 2001, ¶58. One of the novel aspects of the invention of the ’832 patent stems from choosing a viewing window for each frame based on properties of nearby frames or the entire video to achieve smoother transitions from frame to frame as they are horizon-leveled. For example, the ’832 patent describes the use of a “zoom curve 604” which allows for rapid changes in horizon leveling to be smoothed from frame to frame. Ex. 1001, 19:27-32. Thus, instead of using the zoom curve 600 that is based only on rotation data, “the viewing window may be artificially made smaller and/or larger ... during moments that do not require the change in viewing window size to ramp-up and/or ramp-down to the needed viewing

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window size.” *Id.*, 19:38-42. In order to provide such smoothing, however, nearby frames must also be considered to provide a smooth transition from frame to frame. Ex. 2001, ¶58. As the patent explains, “based on the changes in maximum sizes including jittery increase in size over a portion of the progress length, the jittery increase in size may be replaced with a smooth ramp that increases in size.” Ex. 1001, 19:19-23.

Figure 6C depicts the different zoom curves, which shows how determination of the viewing window is a *function of progress*. As can be seen, zoom curve 604 (which determines the viewing window as a function of progress) is significantly smoother than zoom curve 600 (which only determines the viewing window using rotation data). Ex. 2001, ¶59.

**FIG. 6C**

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Similarly, the '832 patent describes that the “location of the viewing window may be changed as a function of progress ... to simulate panning in the horizon-leveled visual content.” Ex. 1001, 20:51-54. Panning can be useful to show “depiction of different things of interest in different spatial locations.” *Id.* In other words, the viewing window is determined as a ***function of progress*** by placing the viewing window based on objects of interest as determined for portions of the video. Ex. 2001, ¶60.

The novelty of determining a viewing window as a function of progress, and the lack of similar disclosure in Thomason, is confirmed by a Chinese patent application owned by Petitioner, CN 112804444 B (“’444 application”). See Ex. 2003, 2004 (certified translation); Ex. 2001, ¶61. As explained in further detail below, the ’444 application, which was filed several years after the ’832 patent, is evidence of Petitioner’s copying of the ’832 patent. In any case, the ’444 application notes that, when determining a viewing window (which the ’444 application calls an “FOV”) based on motion data, “there are inherent flaws in using a fixed FOV for the output video,” *i.e.* there are inherent flaws in using a fixed viewing window that is not determined as a function of progress. Ex. 2004, ¶¶3-5; Ex. 2001, ¶61.

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In particular, the '444 application explains that a large fixed viewing window will have a poor horizon-leveled image if the “movement is relatively intense,” because the boundaries of the new image are too close to the boundary of the original image, which prevents the new image from having an “ideal smooth motion state.” Ex. 2004, ¶4. As Dr. Foroosh explains, when the viewing window is fixed to a large size, it can only be rotated by a certain amount before the window exceeds the boundaries of the original frame. Ex. 2001, ¶62. Thus, it is unable to provide the “ideal smooth motion state.” *Id.* Yet as the '444 application further explains, if the fixed viewing window is too small, then much of the original image will not be captured, resulting in a “waste of FOV.” Ex. 2004, ¶5. The '444 application thus explains that dynamically changing the size of the viewing window allows for maximum capture of the original image while providing a smooth leveling. Ex. 2001, ¶62. This is done with a method for “calculat[ing] the target FOV value of each video frame” by maintaining “the smoothness of adjacent video frames ... to the greatest extent.” Ex. 2004, ¶38. In other words, the '444 application provides a method for determining a viewing window as a function of progress in order to accomplish the “ideal smooth motion state.” Ex. 2001, ¶62.

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Thomason's method by contrast merely rotates a frame based on rotation data. Ex. 2001, ¶63. To the extent this can even be considered a viewing window, it is a "fixed" viewing window, in the sense that it is not ***determined as a function of progress*** to maintain smooth transitions among frames, which both the '824 patent and the '444 application recognized as flawed and sought to improve. Thomason does not describe any capability of determining the viewing window as a function of progress, such as by determining viewing windows by analyzing adjacent frames to capture a desired smoothness or desired objects within the view. Ex. 2001, ¶63.

2. Pacurariu

Petitioner's theory for Pacurariu fares no better, because Petitioner again does not explain how the viewing window is determined ***as a function of progress***. Ex. 2001, ¶64. Petitioner instead makes two arguments: (1) that this limitation is met because "Pacurariu provides a playback of processed sequential frames of the video," the same argument Petitioner made for Thomason, and (2) because "Pacurariu processes each video frame in a video based on a ***frame-specific tilt value***." Pet. 28-30.

The first argument fails for the same reasons discussed in the previous sub-section: that the mere ability to playback a video with horizon-leveled

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frames cannot meet this limitation because it would render it superfluous. Ex. 2001, ¶65.

The second argument similarly fails. Putting aside that Petitioner fails to explain how processing a frame using frame-specific rotation information would satisfy determining the viewing window as a function of progress, the claims already separately require using frame-specific rotation information, and therefore Petitioner’s theory again renders the limitation superfluous. Ex. 2001, ¶66.

Specifically, the claims already require that the system obtain “rotational positions of the image capture device as *a function of progress* through the capture duration.” Indeed, Petitioner asserts that Pacurariu’s “tilt value for each video frame” meets the “rotational positions ... as a function of progress.” Pet. 22 (“[I]t follows that the tilt values of the video frames may also be expressed as a function of progress through the capture duration.”). Moreover, the claims require that the determination of the viewing window is “based on the rotational positions ... as the function of progress through the capture duration.” In other words, the claims separately require (1) obtaining rotation positions that are captured as a function of progress, and (2) determining the viewing window as a function of progress based on those

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rotation positions. Satisfying the first limitation cannot automatically satisfy the second without rendering the claim language superfluous. Ex. 2001, ¶67.

Thus, the mere use of per-frame rotational data cannot meet the separate limitation of “determine a viewing window ... as a function of progress.” Ex. 2001, ¶68. Indeed, Pacurariu explains that its horizon-leveling involves merely applying “a correction ... in the image area 305 to provide an image that is not rotated or tilted.” Ex. 1005, ¶45. In other words, the alleged viewing window is solely determined by rotation data for that specific frame and does not take into consideration any other frames of the video, or the progress of the video—thus failing to determine a viewing window as a function of progress. Ex. 2001, ¶68.

As explained above, the specification and Petitioner’s own Chinese patent application confirm that this limitation was a key novelty that allowed the ’413 patent to improve on prior art horizon-leveling methods by determining the viewing window in such a way as to smooth the transition from frame to frame. Ex. 2001, ¶69.

3. Thomason and Pacurariu Combined

Because neither Thomason nor Pacurariu disclose determining a viewing window as a function of progress, Petitioner’s combination of the two

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references likewise does not. Ex. 2001, ¶70. Petitioner alleges that its combination “results in a system in which rotational positional information, such as a tilt value as taught by Pacurariu, may be obtained for each video frame in Thomason’s video content, be saved as metadata or as part of each video frame as taught by Pacurariu, and be used to generate a rotated image for each video frame in Thomason’s video content.” Pet. 23. Nothing about this combination cures the deficiencies with the individual references described above. Ex. 2001, ¶70.

C. Grounds 3 and 4: Petitioner Has Failed to Establish That Voss and Derbanne Render Obvious Determination of a Viewing Window as a Function of Progress

For Grounds 3 and 4, neither Voss nor the Voss-Derbanne combination render obvious a determination of a viewing window *as a function of progress*. Petitioner makes the same assertions as in Ground 1 wherein merely processing frames within a video meets this limitation, but this cannot be since it would render the limitation superfluous and is inconsistent with the specification. Ex. 2001, ¶71.

As with Petitioner’s theory for Ground 1, Petitioner asserts that this limitation is rendered obvious because (1) Voss “discloses playing back the processed video (with processed frames defined by viewing windows as

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shown in Figure 2),” and alternatively because (2) “[t]he Voss-Derbanne combination would process the video content in Derbanne’s format, which is ‘viewable as a function of progress ...’ as taught by Derbanne, to determine the viewing windows for different frames in the video content.” Pet. 69. In other words, Petitioner asserts this limitation is met merely by horizon-leveling frames within a video. Ex. 2001, ¶72.

But as explained for Ground 1, this alone cannot meet a determination of a viewing window as a function of progress. Ex. 2001, ¶73. Specifically, the claims elsewhere recite the requirement that “visual content” is “viewable as a function of progress”—and thus, determining a viewing window as a function of progress must mean something else lest it be rendered superfluous. And as discussed above, the specification and Petitioner’s own patent application explain the benefits of determining a viewing window as a function of progress, such as the capability of smoothing the transition from frame to frame. *See, e.g.*, Ex. 1001, 19:28-42, Fig. 6C; Ex. 2004, ¶¶3-5, 38; Ex. 2001, ¶73.

V. OBJECTIVE EVIDENCE FURTHER DEMONSTRATES THAT THE ’832 PATENT WAS NOT OBVIOUS

Objective indicia of non-obviousness “may often be the most probative and cogent evidence in the record.” *Medtronic, Inc. v. Teleflex Innovations*

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Sarl, 70 F.4th 1331, 1342 (Fed. Cir. 2023). In considering such evidence, the Board should conduct a “a reasoned, collective weighing of its evidence of secondary considerations,” and not rely on “overly vague and ambiguous” “assignments of weight to different considerations.” *Volvo Penta of the Americas v. Brunswick Corp.*, 81 F.4th 1202, 1213-16 (Fed. Cir. 2023). Objective evidence includes “(1) commercial success, (2) copying, (3) industry praise, (4) skepticism, (5) long-felt but unsolved need, and (6) failure of others.” *Id.*, 81 F.4th at 1212.

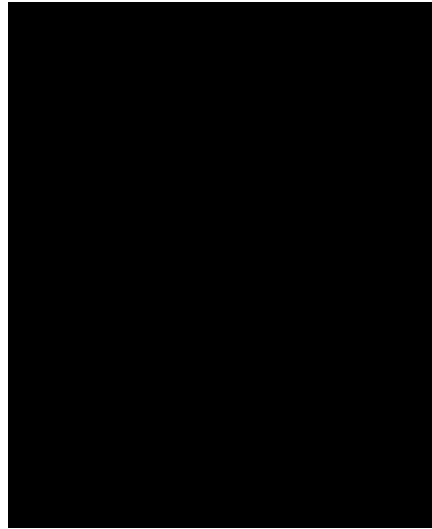
Patent Owner GoPro markets and sells wearable action cameras. Since 2021, these products have included GoPro’s novel Horizon Leveling functionality, which embodies the ’832 patent. Ex. 2006, ¶23; Ex. 2005, 1 (“HERO9 Black has a new feature called in-camera Horizon Leveling.”); Ex. 2001, ¶74.

In addition, GoPro documentation establishes that GoPro’s Horizon Leveling functionality when used on a GoPro camera practices at least claim 1 of the ’832 patent. Ex. 2001, ¶75. For the limitation of “obtain[ing] rotational position information ... characterizing rotational positions of the image capture device as a function of progress,” [REDACTED]

[REDACTED]

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[REDACTED] Ex. 2008, 1;
Ex. 2001, ¶75. For “determin[ing] a viewing window ... as a function of
progress ... based on the rotational positions,” [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Ex. 2008, 6; Ex. 2001,
¶75. [REDACTED]
[REDACTED]
[REDACTED] [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Ex.
2001, ¶75. [REDACTED]
[REDACTED]
[REDACTED] Ex. 2008., 8; Ex. 2001, ¶75.

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There is strong and indisputable objective evidence of nonobviousness directed to the SuperView functionality found in GoPro’s cameras.

First, there is evidence of copying, including by Petitioner.² Petitioner’s ’444 Chinese application describes what GoPro earlier claimed in

² Patent Owner understands that in the ITC litigation, Petitioner served an interrogatory response requesting Patent Owner’s contentions regarding secondary considerations. On October 3, 2024, Lead Counsel for Patent Owner emailed Petitioner, asking that Petitioner produce any documents relevant to secondary indicia under Petitioner’s self-executing obligation to produce any “relevant information that is inconsistent with” its obviousness grounds, including evidence of secondary considerations. 37 C.F.R. § 42.51(b)(1)(iii); Ex. 2007; *see Becton, Dickinson & Co. v. B. Braun*

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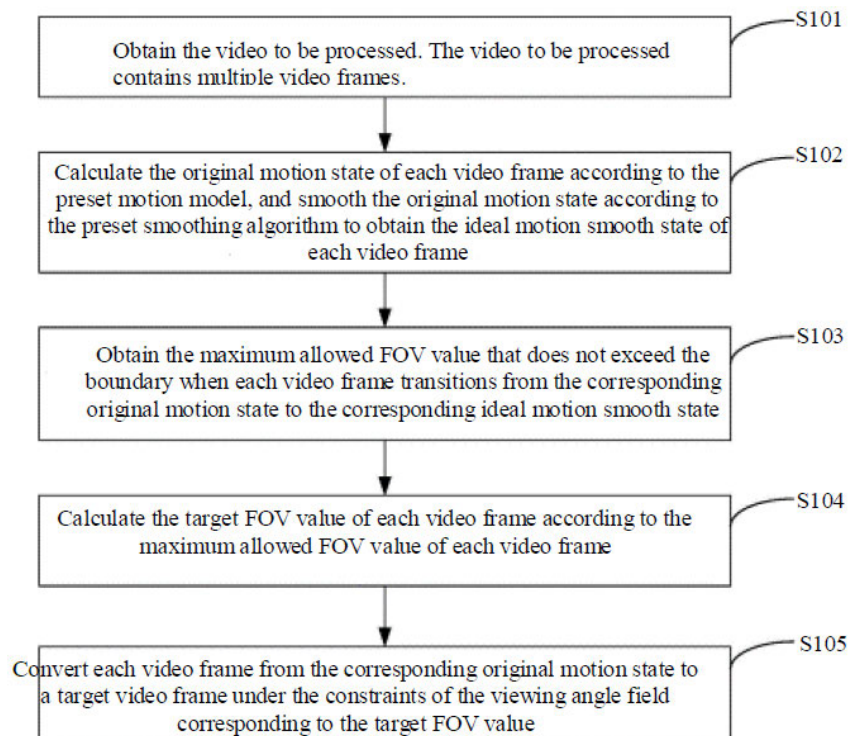
the '832 patent and implemented in the Horizon Leveling functionality. Ex. 2001, ¶76. The '444 application describes obtaining video information, obtains rotational position information captured as a function of progress through a capture duration, and then, based on the rotational position

Melsungen AG, IPR2017-01586, Paper 20 at 2-5 (PTAB Feb. 28, 2018)

(finding that documents demonstrating copying and long-felt need must be produced as “routine discovery” because they are inconsistent with Petitioner’s obviousness positions). Petitioner responded on October 9, 2024, that it was aware that Patent Owner had responded to the interrogatory by “cit[ing] to some Arashi documents in arguing secondary considerations of non-obviousness.” Ex. 2007. However, Petitioner disagreed that it was obligated to produce those identified documents and has, at the time this POPR has been filed, refused to produce those documents. *Id.* If Petitioner and Patent Owner are unable to come to agreement, Patent Owner will seek guidance from the Board. Patent Owner further may request that the Board grant authority to Patent Owner to file additional briefing once those documents are produced.

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information and boundary constraints, determining a dynamic FoV for each frame with a adequate stabilization margin:



Ex. 2003, ¶¶27-44.

Second, there is evidence of a long-felt, but unmet need. Ex. 2001, ¶77. For example Petitioner’s ’444 application notes that a dynamic viewing window was a critical issue for stabilization that had not yet been met. The ’444 application explains that “existing technical solution[s]” had “inherent flaws in using a fixed FOV for the output video.” Ex. 2003, ¶¶2-3.

Third, there is evidence of commercial success, specifically surveys indicating that Horizon Leveling was a driver of demand. Ex. 2001, ¶78. ■■■

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[REDACTED]

[REDACTED]

[REDACTED]

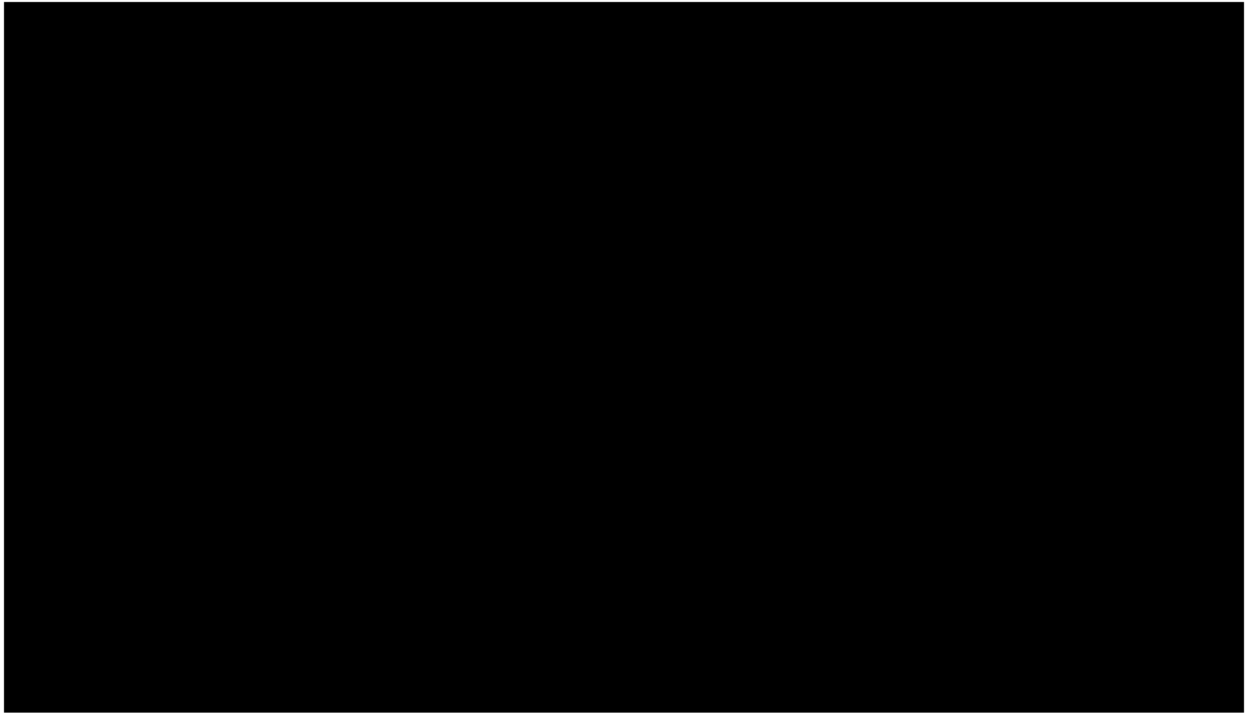
[REDACTED]

Ex. 2018, 23.

[REDACTED]

[REDACTED]

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Ex. 2019, 14.

VI. CONCLUSION

For the foregoing reasons the Board should deny institution of this petition.

Date: October 16, 2024

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PUBLIC VERSION**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 5,514 words and thus complies with the applicable word limit.

Date: October 16, 2024

By: /s/ James Glass

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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 October 16, 2024 upon the following parties via Electronic Mail:

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