

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.

Petitioner,

v.

INTELLECTUAL VENTURES II LLC

Patent Owner.

Case No. IPR2025-00339

U.S. Patent No. 7,916,180

PATENT OWNER'S AUTHORIZED PRE-INSTITUTION SUR-REPLY

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I. Petitioner’s Expansive Construction Of “Combine Data Of A Frame...To Provide An Image Having A Relatively High-Resolution” Improperly Encompasses Prior Art Disparaged In The Background Of The ‘180 Patent

The Petitioner’s assertion that Patent Owner seeks to “import unrecited limitations” into claim 1 is unavailing. Reply, 1. The requirement that the “data of a frame” come from multiple high-resolution images is not an extrinsic gloss, but rather a core feature explicitly and repeatedly expressed in the specification. The very first paragraph of the Detailed Description explains that the digital camera system “makes possible the formation of *multiple high-resolution images*.” Ex. 1001, 3:33-35 (emphasis added). This statement is not merely illustrative; rather, as explained in the Background, this statement reflects the essential improvement over the prior art.

The Background of the ‘180 Patent identifies the deficiency of foveal sensors—high resolution only in the central, narrow FOV—and states the “need for a...digital camera that is capable of simultaneously acquiring [images] having high resolution using multiple fields of view.” Ex. 1001, 2:20-23. The Patent explains that while such sensors use smaller pixels in the central region to achieve higher resolution, the periphery remains low resolution. This Background of the ‘180 Patent positions the invention as one that avoids mixing low-resolution peripheral data with high-resolution center data—exactly what Matsushima does.

The Reply makes the unsupported assertion that “nothing” in the Background passages disparaging foveal sensor constitutes “a clear and unmistakable disclaimer.” Reply, 2. However, as detailed in the POPR, the law is clear and well-settled that claims should not be read so broadly as to encompass prior art distinguished in the specification. *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337 (Fed. Cir. 2001), citing, *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998) (specification distinguished prior art as inferior and touted advantages of a conical shaped cup for use in an artificial hip device; “such statements make clear that the ‘589 patent discloses only conical shaped cups and nothing further”); *Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1304 (Fed. Cir. 1997) (“Since, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection.”) See, POPR, 26. Despite being granted an opportunity to do so by way of a Pre-Institution Reply, the Petition fails to address -- let alone distinguish -- any of this authority from the Federal Circuit. The Petitioner’s failure to address (or distinguish) this authority underscores why Petitioner’s position is incorrect.

In Claim 1, the verb “combine,” on its face, connotes the uniting of two or more elements. It is nonsensical to construe the term in a way that allows for combining data from a single channel with itself, as Petitioner’s theory implicitly

suggests. Rather, in context, a skilled artisan would understand that the verb “combine” requires that data from a single channel be combined with something else in order to achieve “an image having a relatively high resolution,” e.g., one that does not mix low-resolution peripheral data with high-resolution center data as was done in prior art foveal sensors. Reading the claim otherwise would result in the claim covering the prior art foveal sensors disparaged in the Background.

Petitioner’s interpretation that the claim is met by a resulting image having a “relatively high resolution” only in the center surrounded by a low-resolution in the periphery, is inconsistent with the specification’s teaching. Reply, 1. There is no suggestion anywhere in the Patent that a composite formed from a single high-resolution image in the center combined with a low-resolution image in the periphery would qualify. Such a construction would erroneously import into the claim the aspects of foveal sensors that the inventors went out of their way to criticize.

II. The Prosecution History Supports Patent Owner’s Construction

When the ‘803 parent application failed to secure allowance, the Applicant filed the ‘279 continuation-in-part that matured into the ‘180 Patent. The ‘279 application was revised to add subject matter and claims explicitly directed to the simultaneous acquisition of high-resolution images in multiple fields of view. During prosecution, the Examiner initially rejected the claims over Schieltz and Abell -- references that disclosed systems where each channel produced a high-

resolution image. This context shows that the Examiner understood that the claims covered systems where multiple high-resolution images are combined. See, POPR, 16-21 and 27-28. Again, despite being given an opportunity to do so by way of a Pre-Institution Reply, the Reply fails to address the prosecution history arguments articulated in the POPR as described above.

III. Petitioner’s Characterization of Matsushima Is Misleading

Petitioner also points to the fact that Matsushima’s image sensors are of the same “size” and “resolution,” but that assertion is misleading. Reply, 4. Even if the CCDs used in Matsushima have the same pixel count, the images they produce do not have equivalent resolution across the field of view. In Matsushima, the central image (62B) is taken with a telephoto lens, while the surrounding image (62A) is taken with a wide-angle lens. After downsampling the telephoto image, it is inserted into the center of the wide-angle image, replacing a low-resolution region. As a result, the synthesized image remains inherently non-uniform in resolution—high in the center and lower in the periphery—just like the foveal sensors the Patent rejects.

IV. Petitioner’s Proposed Construction Of “During a Frame” Is Flawed

In claim 22, the words “during a frame” come at the end of a larger phrase that recites: “independently controlling simultaneous data acquisition with each of the first and second channels during a frame.” Petitioner’s proposed construction of “during a frame” covers applying control at any time during “the entire period for

data acquisition ... which includes not only the entire period of the integration time, but also additional periods for converting analog signal to provide digital image data for the frame.” Reply, 5-6. Inserting Petitioner’s proposed construction into the larger phrase results in the following:

... independently controlling simultaneous data acquisition with each of the first and second channels **at any time during the entire period for data acquisition which includes not only the entire period of the integration time, but also additional periods for converting analog signal to provide digital image data for the frame ...**

By way of paraphrasing, Petitioner’s expansive construction causes the larger phrase to recite “controlling data acquisition during data acquisition or conversion.” Petitioner’s expansive construction ignores the requirement in the claim that the “data acquisition” be “with each of the first and second channels.” The ‘180 Patent defines a channel as “an optics component or portion and a sensor component or portion” (Ex. 1001, 6:19-21) and distinguishes each channel from image processing circuitry downstream of the channels. See Figure 4 (“image processor 270” shown as receiving output of channels 260A-D). The recitation of independent control of “data acquisition with each of the first and second channels” thus requires control of either the optics or sensor of each channel “during a frame” -- as opposed to processing circuitry downstream of the sensor that “convert[s] analog signal to provide digital image data for the frame” as argued by Petitioner. Petitioner’s argument that a “frame period” is “the time lapsed between successive image

readouts” (Reply, 6) fails to limit the claimed control to control of data acquisition “with the first and second channels” (i.e., optics and sensors) by encompassing data conversion performed between successive readouts by processing circuitry downstream of the photodetectors.

Petitioner’s argument that the claim must be construed to cover both the “rolling mode” and “snap-shot mode” examples in the specification fares no better. As explained in *Sinorgchem Co. v. ITC*, 511 F.3d 1132, 1138 (Fed. Cir. 2007), where “multiple embodiments are disclosed, we have previously interpreted claims to exclude embodiments where those embodiments are inconsistent with unambiguous language in the patent’s specification.” *See also, August Tech. Corp. v. Camtek, Ltd.*, 655 F. 3d 1278, 1285 (Fed. Cir. 2011) (“[t]he disclosure therefore teaches both using multiple die and multiple wafers to train. The fact that the claims at issue cover only the latter — a plurality of known good wafers — is little cause for concern. The mere fact that there is an alternative embodiment disclosed in the [asserted patent] that is not encompassed by [our] claim construction does not outweigh the language of the claim, especially when the court’s construction is supported by the intrinsic evidence.”) (citations omitted); *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008); *Pacing Techs., LLC v. Garman Int’l, Inc.*, 776 F.3d 1021 (Fed. Cir. 2015). Here, it is clear that the specification includes embodiments outside the scope of claim 22. For example, in connection with Figure

4, the ‘180 Patent discloses the use of “positioners 310 and 320” to “position each of the one or more optics portions (e.g., optics portions 290A-290D) of a camera channel” relative to one of “respective sensor portions 292A-292D.” Ex. 1001, 8:16-38. Control of the position of the optics portions (i.e., moving each optics portion into its proper position) would necessarily need to occur *before the frame* during which data was acquired with the channels -- which is clearly outside the scope of the requirement of control *during the frame* set forth in claim 22. Ex. 2013, ¶47. In addition, the fact that the ‘180 Patent is part of a larger family of patents that claim different embodiments disclosed in the specification underscores why it is improper to read the claims of the ‘180 Patent as covering all disclosed embodiments.

Read in light of the claim as a whole and the specification, the phrase “during a frame” in claim 22 means “between the beginning and the end of the exposure interval during which the image sensor integrates charge for that frame.” This construction gives effect to every word in the claim and preserves the distinctions between the disclosed embodiments. Petitioner’s expansive construction should therefore be rejected.

Respectfully submitted,

Dated: July 8, 2025

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CERTIFICATE OF SERVICE,

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **PATENT OWNER'S AUTHORIZED PRE-INSTITUTION SUR-REPLY** was served via email (as consented to by counsel) on July 8, 2025 to lead and backup counsel of record for Petitioner as follows:

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