

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.

IPR2024-00984
Patent 10,015,413 B1

Before WILLIAM V. SAINDON, NABEEL U. KHAN, and
BRIAN D. RANGE, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Arashi Vision (U.S.) LLC (d/b/a/ Insta360) (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 10,015,413 B1 (“the ’413 patent,” Ex. 1001). With authorization from the Board, GoPro, Inc. (“Patent Owner”) filed a Corrected Preliminary Response (Paper 9, “Prelim. Resp.”). After filing the Preliminary Response, Patent Owner filed a Statutory Disclaimer of claims 2–5 and 8–20 of the ’413 patent. Ex. 2022. This leaves claims 1, 6, and 7 as the remaining challenged claims.

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on at least one of the challenged claims of the ’413 patent. We institute *inter partes* review as to all the challenged claims of the ’413 patent on all the grounds of unpatentability set forth in the Petition.

B. *Related Proceedings*

The parties identify the following pending matters as involving the ’413 patent: *In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith*, Inv. No. 337-TA-1400 (USITC); *GoPro, Inc. v. Arashi Vision Inc. et al.*, No. 8:24-cv-00681-HDE-JCV (C.D. Cal.). Pet. 108; Paper 4, 2. Patent Owner also identifies the following proceeding that “may affect or be affected by a decision in this proceeding”: *Arashi Vision Inc. v. GoPro, Inc.*, IPR2024-01052 (PTAB).

C. The '413 Patent (Ex. 1001)

The '413 patent, titled “Conversion between Aspect Ratios in Camera,” relates to a camera system for capturing an image in a source aspect ratio and transforming the image to scale and warp the image to generate an output image having a different aspect ratio. Ex. 1001, codes (54), (57). According to the '413 patent, “[c]onverting between aspect ratios is a common problem in the field of image and video processing,” but conventional conversion techniques “result in a perceivable reduction in the quality of the image or video.” *Id.* at 1:6–15.

Figures 2A and 2B of the '413 patent, reproduced below, show a flowchart of a process and set of example images converting an image from a source aspect ratio to a target aspect ratio. Ex. 1001, 1:31–35.

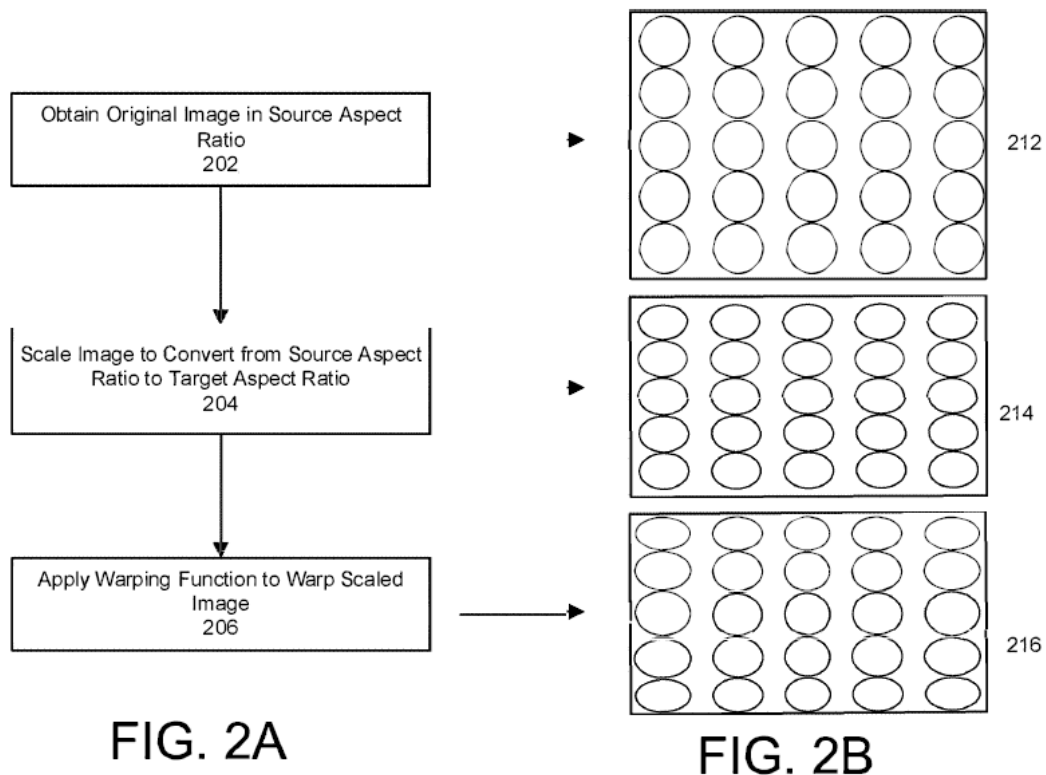


Figure 2A and 2B, above, illustrate a process for converting from a source aspect ratio to a target aspect ratio in a camera system. Ex. 1001,

3:61–63, 4:2–3. At step 202, shown in Figure 2A, an input image is obtained in a source aspect ratio. *Id.* at 3:63–65. At step 204, the input image is scaled from the source aspect ratio to a target aspect ratio using a linear scaling function. *Id.* at 3:65–4:1. At step 206, a non-linear warping is applied to the scaled image. *Id.* at 4:1–2.

Figure 2B illustrates the process of Figure 2A as applied to an image 212. Ex. 1001, 4:2–3. Image 212 shown in Figure 2B contains an array of circles. *Id.* Image 214 depicts an array of circles that have been stretched horizontally and compressed vertically after applying the linear scaling function at step 204. *Id.* at 4:3–6. The array of circles in image 214 have been stretched and compressed equally. *Id.* at 4:6–9. Image 216 depicts an array of circles that have been stretched and compressed after applying the non-linear scaling function of step 206. *Id.* at 4:9–13. The array of circles in image 216 have been stretched and compressed by different amounts depending on their horizontal and vertical positions. *Id.*

The '413 patent explains that image 216 preserves the full field of view of the original image 212. Ex. 1001, 4:14–16. Some areas of the image are “fully corrected geometrically, while some other areas are distorted.” *Id.* at 4:16–19. In image 216, the center circle is fully corrected so that it maintains the original circular shape, while the circles become more distorted as they approach the edges of the image. *Id.* at 4:22–30.

D. Statutory Disclaimer

After the filing of the Petition in this proceeding, Patent Owner filed a statutory disclaimer, disclaiming claims 2–5 and 8–20 of the '413 patent, on November 5, 2024. Ex. 2022. “No *inter partes* review will be instituted based on disclaimed claims.” 37 C.F.R. § 42.107(e). This Decision, therefore, only analyzes the patentability of remaining claims 1, 6 and 7.

E. Illustrative Claims

Claim 1 is the only remaining independent claim of the '413 patent at issue in this proceeding, and is reproduced below with limitation identifiers in brackets corresponding to claim analysis headings in the Petition. *See, e.g.,* Pet. 11–40. Claims 6 and 7 depend from claim 2, and claim 2 has been disclaimed.

1.[Preamble] An image capture apparatus, comprising:

1[a] an image sensor configured to capture an input image having a source aspect ratio, the input image including pixels located at input positions defined along a first axis and a second axis, the first axis perpendicular to the second axis;

1[b] a display coupled to one or more physical processors; and

1[c] the one or more physical processors configured by machine-readable instructions to:

1[d] obtain the input image;

1[e] determine a portion within the input image, the portion including a subset of the pixels; and

1[f] apply a transformation to the input image to generate an output image, the output image having a target aspect ratio different than the source aspect ratio, the output image including the pixels located at output positions defined along the first axis and the second axis,

1[g] wherein: the transformation non-uniformly shifts the pixels from the input positions to the output positions based on (1) the input positions along the first axis, and (2) the input positions along the second axis; and

1[h] the transformation non-uniformly shifts the pixels such that differences between the input positions and the output positions of the subset of the pixels within the portion are less than differences between the input positions and the output positions of others of the pixels; and

1[i] present the output image on the display.

Ex. 1001, 8:65–9:27.

F. Evidence

The Petition relies on the following references:

Reference	Exhibit No.
US 7,158,158 B1; filed Mar. 12, 2003; issued Jan. 2, 2007 (“Fleming”)	1004
US 8,649,635 B2; filed Mar. 28, 2011; issued Feb. 11, 2014 (“Liu”)	1005
US 2006/0279583 A1; filed June 9, 2006; published Dec. 14, 2006 (“Obara”)	1006
US 7,693,500 B2; filed June 5, 2006; issued Apr. 6, 2010 (“Meulen”)	1007
US 2008/0095470 A1; filed Oct. 23, 2006; published Apr. 24, 2008 (“Chao”)	1008

Petitioner also relies on the Declaration of Dr. Aggelos Katsaggelos (Ex. 1002) in support of its arguments and Patent Owner relies on the Declaration of Hassan Foroosh Ph.D (Ex. 2001). The parties rely on other exhibits as discussed below.

G. Asserted Grounds of Unpatentability

Petitioner assert that claims 1, 6, and 7 would have been unpatentable on the following grounds¹:

Ground	Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
1	1, 6, 7	103	Fleming
2	1, 6, 7	103	Obara, Liu
3	1, 6, 7	103	Meulen, Chao

¹ We list only the grounds that challenge remaining claims 1, 6, and 7.

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103 and became

II. ANALYSIS

A. *Principles of Law*

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) any objective evidence of obviousness or non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (internal quotation marks and citation omitted).

effective March 16, 2013. Because the '413 patent was filed after this date, the AIA versions of §§ 102 and 103 apply.

Petitioner argues that a person of ordinary skill in the art in the relevant field “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 alternatively “would have four years of experience working on image or video processing, or digital cameras.” Pet. 6. Petitioner further argues that an “advanced graduate degree” may “make up for the work experience.” *Id.* (citing Ex. 1002 ¶¶ 33–34). At this stage of the proceeding, “Patent Owner applies Petitioner’s proposed level of skill.” Prelim. Resp. 3.

For purposes of this Decision, we adopt Petitioner’s proposed level of ordinary skill because it is consistent with the level of skill in the art at the time of the invention as reflected by the ’413 patent and the cited prior art.

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2020).

In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Only claim terms in controversy require express construction, “and only to the extent necessary to resolve the

controversy.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

Petitioner argues that no claim terms “require a formal construction” and that “Petitioner interprets the challenged claims based on the breadth of GoPro’s infringement allegations.” Pet. 6 at n2. Patent Owner asserts that several claim terms are disputed in the parallel ITC litigation, but “none of them need to be resolved by the Board.” Prelim. Resp. 4 (citing Ex. 2001 ¶ 34).

We determine that, at this stage of the proceeding, no explicit constructions are required to resolve the dispute between the parties. A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner’s Response, Petitioner’s Reply, Patent Owner’s Sur-reply, or otherwise during trial, as permitted by our rules.

D. Ground 4 – Obviousness over Meulen and Chao

Petitioner argues claims 1, 6, and 7 of the ’413 patent would have been obvious over the combination of Meulen and Chao. Pet. 81–105. Below we provide a brief overview of the prior art references and then analyze Petitioner’s contentions in light of Patent Owner’s arguments.

1. Overview of Meulen

Meulen is titled “Panoramic Display for a Wireless Device,” and describes “a need for improved display systems and techniques for a

wireless device.” Ex. 1007, code (54), 1:29–31. Figure 1 of Meulen is reproduced below.

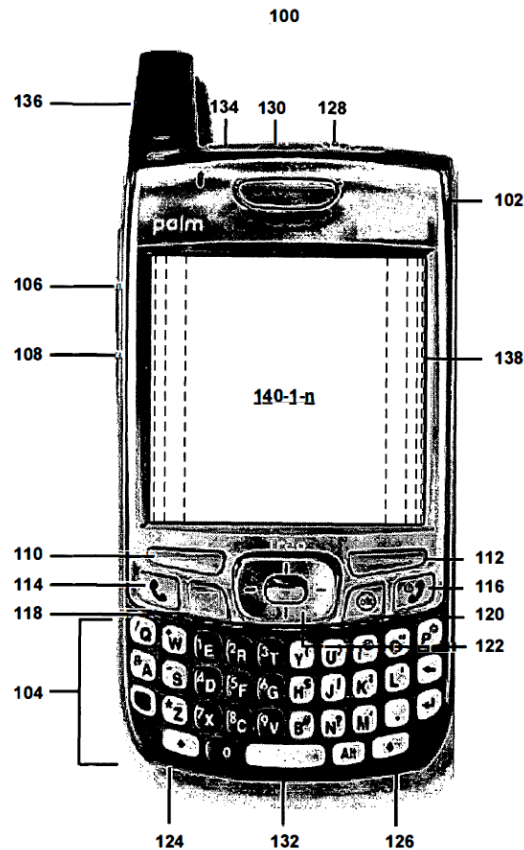


FIG. 1

Figure 1 of Meulen illustrates one embodiment of its wireless device. Ex. 1001, 2:8. The display 138 may display media source content received by the wireless device. *Id.* at 3:26–27. The media source content may have an aspect ratio that differs from the aspect ratio of the display. *Id.* at 4:13–15. For example, the media source content may have an aspect ratio of 3:2 while the display may have an aspect ratio of 1:1. *Id.* at 4:15–18. In such situations, image compression and/or scaling may be applied to the media source content that is to be displayed on one or more of the display regions. *Id.* at 4:37–39. Meulen explains that its image compression or scaling “may be applied progressively to the media source content based on the proximity

of the display region to the edge of the display.” *Id.* at 4:42–45. “For example, more image compression and/or scaling may be applied to the media source content that is to be displayed closer to the edges of the display 138, than to the media source content that is to be displayed closer the center of the display 138.” *Id.* at 4:45–49.

2. *Overview of Chao*

Chao is titled “Digital Image Auto-Resizing,” and relates to methods and systems “for automatically resizing an image while maintaining the original design intent of the original image.” Ex. 1008, code (54), ¶ 22. When resizing an image, Chao discloses separating foreground elements from background elements. *Id.* ¶ 25. The background elements are re-sized without maintaining its original aspect ratio, and then repositioned in order to maintain the design intent of the original image. *Id.* ¶¶ 28–29. The foreground elements are re-sized to fit the new image size while maintaining the original aspect ratio and repositioned. *Id.* ¶¶ 30–31.

3. *Analysis of Claim 1*

Petitioner contends that the combination of Meulen and Chao renders obvious the preamble and limitations 1[a]–1[i]. Pet. 85–94, 97–98, 104–105. For its contentions for claim 1, Petitioner relies, in part, on its contentions for claims 2 (now disclaimed), 6, and 7³. *See* Pet. 104–105. Petitioner supports its arguments with citations to Meulen and Chao and to the testimony of Dr. Katsaggelos. Patent Owner focuses its arguments on whether Petitioner has provided a sufficient motivation to combine and demonstrated a reasonable expectation of success in doing so. Prelim. Resp.

³ In our analysis below, we cite to Petitioner’s contentions for claims 2, 6, and 7 where applicable.

7–12. Patent Owner also disputes whether the combination of Meulen and Chao teach three particular limitations of claim 1. *Id.* at 17, 25–29.

We have reviewed Petitioner’s contentions and the cited evidence for the undisputed limitations of claim 1 and are persuaded that Petitioner has demonstrated a reasonable likelihood that a person of ordinary skill in the art would have combined Meulen and Chao with a reasonable expectation of success and that the combination teaches these undisputed limitations for the reasons provided in the Petition. Below, we analyze Petitioner’s contentions for the disputed limitations of claim 1 in light of Patent Owner’s arguments.

a) Preamble

The preamble⁴ of claim 1 recites “[a]n image capture apparatus, comprising.” Ex. 1001, 8:65. Petitioner contends “Meulen’s wireless device comprises a digital camera.” Pet. 97, 104 (citing Ex. 1007, 4:55–60, 3:29–31, 12:62–13:1; Ex. 1002 ¶¶ 289–290). Petitioner also argues that “Chao discloses ‘[t]he image may be output by displaying the image on or as part of: a display screen such as a . . . camera screen.’” Pet. 97 (citing Ex. 1008 ¶ 32; Ex. 1002 ¶ 291).

Patent Owner argues:

Neither Meulen nor Chao disclose “physical processors are included within a camera” or “image capture apparatus.” For Meulen, it expressly describes a “wireless device 100” that “***comprise[s] ... a camera***” but does not state that the processors are ***within*** the camera. Pet. 97; Ex. 1007, 4:55-60. And for Chao, it merely describes outputting the image to a camera screen, but provides no disclosure of processors within a camera performing

⁴ Because we determine Petitioner has shown sufficiently for purposes of institution that the prior art satisfies the recitation in the preamble, the issue of whether the preamble is limiting need not be resolved at this stage.

any scaling of images. Pet. 97; Ex. 1008, ¶¶32; Ex. 2001, ¶¶67-68.

Prelim. Resp. 25.

We are persuaded by Petitioner’s arguments at this stage of the proceeding. Meulen discloses “[a] wireless device [that] . . . may incorporate features such as a color display screen, [and] a digital camera.” Ex. 1007, 1:6–8. Meulen also discloses “[i]n some embodiments, for example, the wireless device 100 may comprise display control hardware implemented by one or more processors” *Id.* at 4:54–57. We determine the plain meaning of the recited “image capture apparatus” encompasses Meulen’s wireless device. Therefore, the aforementioned disclosures support Petitioner’s argument that the combination of Meulen and Chao teach the preamble of claim 1 and contradict Patent Owner’s argument that Meulen does not disclose processors that are within the camera.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

b) Limitation 1[a]

Limitation 1[a] recites “an image sensor configured to capture an input image having a source aspect ratio, the input image including pixels located at input positions defined along a first axis and a second axis, the first axis perpendicular to the second axis.”

Petitioner contends “[d]igital cameras comprise an image sensor configured to capture an input image.” Pet. 104 (citing Ex. 1002 ¶¶ 311–312). Petitioner further contends that Meulen’s media source content, which is received by the wireless device 100 “may have an aspect ratio of 3:2 with

a resolution of 480x320” or “an aspect ratio of 2:1 with a resolution of 640x320.” Pet. 87 (citing Ex. 1007, 3:26–27, 4:16–21; Ex. 1002 ¶ 251). Petitioner argues that “[i]t would have been obvious that the media source content being transformed into an image for display would have pixels located at input positions defined along columns and rows” and that a “POSITA would have understood that columns are perpendicular to rows.” Pet. 87 (citing Ex. 1007, 1:55–58; Ex. 1002 ¶ 251). Patent Owner does not separately dispute Petitioner’s contentions for this limitation.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

c) Limitation 1[b]

Limitation 1[b] recites “a display coupled to one or more physical processors.” Petitioner contends “Meulen’s wireless device comprises a display and physical processor(s).” Pet. 97, 104 (citing Ex. 1007, 4:55–60, 3:29–31, 12:62–13:1; Ex. 1002 ¶¶ 289–290). Patent Owner’s argument that Meulen “does not state that the processors are *within* the camera” (Prelim. Resp. 25) was discussed in our analysis of the preamble where we found the argument to be lacking. Pet. 97.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

d) Limitation 1[c]

Limitation 1[c] recites “the one or more physical processors configured by machine-readable instructions to.” Ex. 1001, 9:5–6. Petitioner argues “Meulen’s ‘image compression and/or scaling may be applied to the media source content using various physical or logical

elements implemented as hardware, software, or any combination thereof.” Pet. 86 (citing Ex. 1007, 4:50–53). Petitioner also relies on Meulen’s disclosure that “the wireless device 100 may comprise display control hardware implemented by one or more processors, controllers, encoder devices” and that its “wireless device 100 may comprise display control software implemented by one or more applications, drivers, programs, modules, subroutines, instruction sets, instructions, computing codes, or combination thereof.” Pet. 86–87 (citing Ex. 1007, 4:62–66; Ex. 1002 ¶ 250). Patent Owner does not separately dispute Petitioner’s arguments for this limitation.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

e) Limitation 1[d]

Limitation 1[d] recites “obtain the input image.” Ex. 1001, 9:7. Petitioner argues that Meulen’s “media source content [is] received by the wireless device 100.” Pet. 87 (citing Ex. 1007, 3:26–27). Patent Owner does not separately dispute Petitioner’s arguments for this limitation.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

f) Limitation 1[e]

Limitation 1[e] recites “determine a portion within the input image, the portion including a subset of the pixels.” Ex. 1001, 9:8–9. Meulen discloses that “central display region 140-3 may comprise 200 pixels and require the media source content to undergo no image compression (e.g., 200 source pixels to 200 display pixels).” Ex. 1007, 6:27–31. Relying on

this disclosure, Petitioner argues that “[a] POSITA would have understood that the central region within the media source content has a corresponding central display region, which includes a subset of the source pixels.” Pet. 88 (citing Ex. 1002 ¶¶ 252–253).

Patent Owner argues “Petitioner fails to show how Meulen discloses that the CPU *determines* the central display region *prior* to image transformation.” Prelim. Resp. 17 (citing Ex. 2001 ¶¶ 52–53).

Having reviewed the parties’ arguments and the evidence we are persuaded by Petitioner that Meulen teaches “determin[ing] a portion within the input image, the portion including a subset of the pixels.” As Petitioner points out, Meulen divides its display into regions, including a central region 140-3 that may comprise 200 pixels upon which the input image is to be displayed. Ex. 1007, 6:27–31; *see also* Ex. 1007, 6:4–6 (“image compression and/or scaling may be applied to the media source content that is to be displayed in the lateral display regions.”) By identifying a central region of 200 pixels, Meulen determines a portion of the input image including a subset of pixels that is to be displayed in the central region of Meulen’s display.

We determine that Petitioner has sufficiently shown that Meulen teaches this limitation, by disclosing that the display region of wireless device 100 is divided into various lateral display regions before an application of the transformation to the input image. *See* Ex. 1007, 4:24–39 (“As shown, the display 138 may comprise a plurality of display regions, such as regions 140-1-*n*, where *n* represents a positive integer value. . . . In such embodiments, image compression and/or scaling may be applied to the media source content that is to be displayed in one or more of the display regions 140-1-*n*.”).

Having reviewed the parties' arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner's arguments for the reasons summarized above.

g) Limitation 1[f]

Limitation 1[f] recites "apply a transformation to the input image to generate an output image, the output image having a target aspect ratio different than the source aspect ratio, the output image including the pixels located at output positions defined along the first axis and the second axis." Ex. 1001, 9:10–14.

Petitioner argues "Meulen's media source content is an 'input image' having a source aspect ratio (*e.g.*, '3:2 with a resolution of 480×320,' or '2:1 with a resolution of 640×320.')." Pet. 88 (citing Ex. 1007, 4:16–21). Petitioner relies on Meulen's disclosure that "image compression and/or scaling may be applied to media content having an aspect ratio and/or resolution that is different from the aspect ratio and/or resolution of the display." *Id.* (citing Ex. 1007, 5:5–7; Ex. 1002 ¶¶ 254–255). Petitioner further argues "Meulen applies a transformation to the media source content to generate the display image." *Id.* at 90 (citing Ex. 1002 ¶¶ 256–258; Ex. 1007, 1:55–58; 4:16–22, 5:5–7, 6:27–37, Tables 2–4). Petitioner argues "[t]he display image includes pixels located at output positions defined along columns and rows." *Id.* at 90 (citing Ex. 1007, 1:13–16, 1:55–58; Ex. 1002 ¶ 259).

Patent Owner does not separately dispute Petitioner's arguments for this limitation.

Having reviewed the parties' arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner's arguments for the reasons summarized above.

h) Limitation 1[g]

Limitation 1[g] recites “wherein: the transformation non-uniformly shifts the pixels from the input positions to the output positions based on (1) the input positions along the first axis, and (2) the input positions along the second axis.” Ex. 1001, 9:15–20.

Petitioner argues “Meulen’s media source content is an ‘input image’ with input positions, and display image is an ‘output image’ with output positions.” Pet. 91. Petitioner further argues “[n]on-uniform ‘image compression and/or scaling may be applied to media content’ and that “[c]ompression/scaling ‘may be applied in a horizontal direction and/or a in a vertical direction’ to ‘create a magnified effect.’” *Id.* citing (Ex. 1007, 1:55–56, 10:19–26.). According to Petitioner “[i]t would have been obvious that when performing image scaling, pixels from the input to output positions are shifted based on a scaling factor. A POSITA would have known about shifting pixel positions in order to scale the image by scaling factor(s) at the time of the ’413 invention.” *Id.* (citing Ex. 1002 ¶¶ 260–262).

Petitioner further argues that “Meulen mentions scaling, but does not disclose the details of how to perform scaling. . . . Hence, a POSITA would have been motivated to turn to a prior art reference that discloses the details of scaling (known technique).” Pet. 91 (citing Ex. 1002 ¶ 262). According to Petitioner “Chao discloses non-uniform scaling that scales the foreground and background elements differently.” *Id.* at 91. Petitioner relies on Chao’s disclosure that “the background element is re-sized, by stretching or shrinking, as necessary, to fit the new page size.” *Id.* (citing Ex. 1008 ¶ 28). Petitioner, therefore, argues “[a] POSITA would understand that stretching/shrinking means shifting the pixels’ positions.” *Id.* at 92 (citing

Ex. 1008 ¶ 63, Ex. 1002 ¶ 263). Petitioner adds “[a]s the prior art shows, there would have been a reasonable expectation of success.” *Id.* (citing Ex. 1002 ¶ 264).

Patent Owner argues “neither Meulen nor Chao describe pixel shifting, and thus the combination fails to render it obvious.” Prelim. Resp. 25 (citing Ex. 2001 ¶ 69). In response to Petitioner’s contention that it would have been obvious that pixels are shifted based on the scaling factor, Patent Owner argues “Petitioner does not provide any motivation or reasonable expectation of success, nor does Petitioner cite to any evidence regarding the knowledge of a POSITA beyond its own expert’s say-so.” *Id.* at 27 (citing Ex. 2001 ¶ 72). Addressing the combination of Meulen and Chao, Patent Owner argues that “Chao never discusses shifting pixels, and Petitioner does not cite to anything beyond its expert’s conclusory opinion.” *Id.* (citing Ex. 2001 ¶ 73). Patent Owner also argues “Chao does not disclose non-uniform pixel shifting” and therefore, according to Patent Owner, the combination cannot disclose non-uniform pixel shifting. *Id.*

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above. Specifically, we agree that the combination of Meulen and Chao teaches non-uniform pixel shifting. Contrary to Patent Owner’s argument, we agree with Petitioner that by teaching image scaling, Meulen teaches that pixels are shifted based on a scaling factor from the input to output positions. Further, we also agree that by disclosing stretching or shrinking of its background elements Chao also teaches pixel shifting.

Petitioner argues that because Meulen mentions scaling of images without providing the details of how to perform scaling, a person of ordinary

skill would have turned to Chao to learn these details. Pet. 91 (citing Ex. 1002 ¶ 262). Based on the teachings of these references and the similarity of the references' technology, we determine Petitioner has established a reason to combine Meulen and Chao with a reasonable expectation of success in doing so.

i) Limitation 1[h]

Limitation 1[h] recites “the transformation non-uniformly shifts the pixels such that differences between the input positions and the output positions of the subset of the pixels within the portion are less than differences between the input positions and the output positions of others of the pixels.” Ex. 1001, 9:21–26.

Meulen discloses “the central display region 140-3 may comprise 200 pixels and require the media source content to undergo no image compression (e.g., 200 source pixels to 200 display pixels). The lateral display regions 140-1 and 140-5 each may [undergo] . . . a 4:1 image compression ratio. . . . The lateral display regions 140-2 and 140-4 each may [undergo] . . . a 2:1 image compression ratio.” Ex. 1007, 6:27–37. Petitioner relies on this disclosure, along with Tables 2 through 4 of Meulen to argue that it would have been obvious that when scaling an image as disclosed in Chao, pixels would shift according to their input and output positions and that the combination leads to the amount of re-sizing at the central region being less than at lateral regions (2:1 or 4:1). Pet. 94. Patent Owner does not separately dispute Petitioner's arguments for this limitation.

Having reviewed the parties' arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner's arguments for the reasons summarized above.

j) Limitation 1[i]

Limitation 1[i] recites “present the output image on the display.” Ex. 1001, 9:27. Petitioner relies on Meulen’s disclosure that its “wireless device may include a display” and that its wireless device “display[s] content from a media source.” Pet. 98 (quoting Ex. 1007, Abstract, 1:44–46). Petitioner also argues that “Chao discloses the output image is presented on a display of the camera.” *Id.* (citing Ex. 1008 ¶ 32; Ex. 1002 ¶¶ 294–295). Patent Owner does not separately dispute Petitioner’s arguments for this limitation.

Having reviewed the parties’ arguments and the cited evidence we are persuaded, at this stage of the proceeding, by Petitioner’s arguments for the reasons summarized above.

k) Conclusion – Claim 1

For the aforementioned reasons, we determine Petitioner has established a reasonable likelihood that the combination of Meulen and Chao teach the limitations of claim 1.

4. Analysis of Claim 6

Claim 6 depends from claim 2. Petitioner’s arguments for the limitations of claim 6, which include limitations of claim 2, are based on many of the same arguments that we have analyzed above with respect to claim 1. Below we analyze Petitioner’s arguments for claim 6, including those for claim 2.

The preamble of claim 2⁵, recites “[a] system that converts between aspect ratios, the system comprising.” Ex. 1001, 9:28–29. Petitioner argues

⁵ Because we determine Petitioner has shown sufficiently for purposes of institution that the prior art satisfies the recitation in the preamble, the issue of whether the preamble is limiting need not be resolved at this stage.

“Meulen’s wireless device 100 (Figure 1 below) applies ‘image compression and/or scaling . . . to media content having *an aspect ratio and/or resolution that is different from the aspect ratio and/or resolution* of the *display*.’”

Pet. 85–86 (citing Ex. 1007, 1:55–58; Ex. 1002 ¶ 248). Patent Owner does not separately dispute Petitioner’s contentions for the preamble of claim 2.

For the remaining limitations of claim 2, Petitioner relies on the same arguments discussed above for claim 1. Specifically, Petitioner relies on the same argument for limitation 2[a] as for limitation 1[c], the same argument for limitation 2[b] as for limitation 1[a], and the same argument for limitation 2[c]–2[f] as for limitations 1[e]–1[h], respectively. *See* Pet. 104–105. We agree with these arguments for the same reasons as for claim 1.

Finally, claim 6 recites “wherein the one or more physical processors are included within a camera.” Here, Petitioner argues “Meulen’s wireless device 100 includes ‘one or more processors [or] controllers’ and ‘may comprise . . . a camera.’” Pet. 97 (citing Ex. 1007, 4:55–60, 3:29–31, 12:62–13:1; Ex. 1002 ¶¶ 289–290). Petitioner further argues Chao discloses “[t]he image may be output by displaying the image on or as part of: a display screen such as a . . . camera screen.” Pet. 97 (citing Ex. 1008 ¶ 32; Ex. 1002 ¶ 291).

Patent Owner argues, as it did for claim 1, that Petitioner has failed to demonstrate a reasonable likelihood of success and that its motivation to combine is conclusory. *See* Prelim. Resp. 9, 12. Further, Patent Owner makes the same arguments for the substantive limitations of claim 6 as it did for the preamble of claim 1. *See Id.* at 25 (arguing that “Meulen does not state that the predecessors are *within* the camera.”) We determine, for the same reasons discussed above with respect to claim 1 and for the additional reasons summarized above, that Petitioner demonstrates a reasonable

likelihood that one of ordinary skill would have been motivated to combine Meulen and Chao with a reasonable expectation of success (*see supra* § II.D.3.h) and that the combination of Meulen and Chao teaches the limitations of claim 6.

5. *Analysis of Claim 7*

Claim 7 depends from claim 6 and recites “wherein the output image is presented on a display of the camera.” Ex. 1001, 10:3–4. Petitioner makes the same arguments for claim 7 as it did for limitation 1[i]. Patent Owner does not separately dispute Petitioner’s arguments for claim 7. *See* Prelim. 17, 18, 25 (making the same arguments as for claims 1 and 6). We determine Petitioner demonstrates a reasonable likelihood that the combination of Meulen and Chao teach the limitations for claim 7 for the same reasons discussed above with respect to limitation 1[i].

6. *Objective Indicia of Non-Obviousness*

Patent Owner argues “[t]here is strong and indisputable objective evidence of nonobviousness directed to the SuperView functionality,” which, when used in its GoPro wearable action cameras, embodies the ’413 patent. Prelim. Resp. 29–30 (citing Ex. 2006 ¶ 20; Ex. 2008; Ex. 2001 ¶¶ 76–77). This evidence of nonobviousness presented by Patent Owner relates to copying, industry praise, commercial success, and long felt need of its SuperView functionality. Prelim. Resp. 30–40.

Objective indicia of nonobviousness may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012). Objective indicia are only relevant to the obviousness inquiry if there is a nexus between the claimed invention and the objective indicia of nonobviousness. *In re Affinity*

Labs of Tex., LLC, 856 F.3d 883, 901 (Fed. Cir. 2017). A rebuttable presumption of nexus applies only “when [a patent owner] shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with [the claims].’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). On the other hand, a patent owner is not entitled to a presumption of nexus if the patented invention is only a component of a commercially successful machine or process. *Id.* (reaffirming the importance of the “coextensiveness” requirement).

Applying *Fox Factory*, the Board uses a two-step analysis in evaluating nexus between the claimed invention and objective evidence of nonobviousness, also referred to as secondary considerations. *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential). We first consider whether Patent Owner has demonstrated “that its products are coextensive (or nearly coextensive) with the challenged claims,” resulting in a rebuttable presumption of nexus. *Id.* at 33. If not, that “does not end the inquiry into secondary considerations”; “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* (quoting *Fox Factory*, 944 F.3d at 1373–75). For the reasons discussed below, we determine that Patent Owner does not demonstrate (i) that its products are coextensive with the challenged claims for a presumption to attach, and (ii) the requisite nexus with evidence that the secondary considerations are the direct result of the unique characteristics of the claimed invention.

a) Presumption of Nexus

Before we analyze each category of objective indicia of nonobviousness presented by Patent Owner, we first turn to whether Patent Owner has sufficiently established a presumption of nexus between its products and the challenged claims. In this regard, Patent Owner asserts that “SuperView functionality . . . embodies the ’413 patent.” Prelim. Resp. 29. As evidence supporting this assertion, Patent Owner cites to a paragraph of its Complaint at the International Trade Commission which merely states that “GoPro’s SuperView technology [is] disclosed and claimed by the ’413 patent” and describes, at a largely non-technical level, the SuperView functionality. Ex. 2006 ¶ 20.

As a threshold matter, Patent Owner cannot meet its burden in this regard by relying on incorporation by reference of arguments made elsewhere in other proceedings. 37 C.F.R. § 42.6(a)(3) (2015) (“Arguments must not be incorporated by reference from one document into another document.”).

Even considering the evidence presented, we determine that such evidence is insufficient in establishing a presumption of nexus. Specifically, Patent Owner does not compare any GoPro product to the limitations of the challenged claims and does not show that GoPro products, which include a myriad of other features, are coextensive with the challenged claims. We determine a presumption of nexus does not apply to Patent Owner’s products.

b) Specific Evidence of Objective Indicia of Non-Obviousness

We address below Patent Owner’s arguments directed to the objective indicia of copying, industry praise, commercial success, and long-felt need, including whether Patent Owner demonstrates that any secondary

considerations are the direct result of the unique characteristics of the claimed invention. Prelim. Resp. 30–40.

(1) *Copying*

Patent Owner argues there is significant evidence of copying based on Petitioner’s use of a similar sounding feature called ActionView. Patent Owner points out the similarities in the way Petitioner’s materials describe ActionView with the way Patent Owner describes its SuperView feature. Prelim. Resp. 31–32 (citing Ex. 2010, 1; Ex. 2009; Ex. 2001 ¶¶ 77–78). Finally, Patent Owner argues that others have also copied GoPro’s SuperView feature, citing software projects that purport to use the “GoPro SuperView method.” Prelim. Resp. 32 (citing Ex. 2011; Ex. 2012).

We determine that the evidence presented is insufficient to show copying of Patent Owner’s products. Copying requires evidence of efforts to replicate a specific product based on access to that product. *Tokai Corp. v. Easton Enterprises, Inc.*, 632 F.3d 1358, 1370 (Fed. Cir. 2011); *Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F.3d 1337, 1347–48 (Fed. Cir. 2013); *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). General, non-technical descriptions of features of competing products, fall short of the required evidence and do not show that Petitioner had access to Patent Owner’s products at the level required to show copying.

The cited documents of the software projects also fall short of showing replication of Patent Owner’s products. In fact, the cited documents expressly state that they are “not a 1-1 copy of the GoPro algorithm, but an attempt to reach a similar quality of output using the open-source FFmpeg encoder.” Ex. 2011, 2; Ex. 2012, 2. Thus, even if there was a nexus between Patent Owner’s products and the challenged claims, we

determine Patent Owner’s evidence of copying is insufficient to be weighed heavily in the obviousness analysis.

(2) *Industry Praise*

Patent Owner points to an article that characterizes the SuperView feature as “clever” and “designed to capture a more immersive wide angle perspective.” Prelim. Resp. 32 (quoting Ex. 2013). Patent Owner also cites reviews from users of GoPro’s products and from users of a competitor’s product. *Id.* at 33 (citing Ex. 2015; Ex. 2016; Ex. 2001 ¶¶ 81–82).

Praise in the industry for a patented invention and specifically praise from a competitor tends to indicate that the invention was not obvious. *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1370 (Fed. Cir. 2012); *see, also Apple Inc. v. Samsung Electronics Co., Ltd.*, 839 F.3d 1034 (Fed. Cir. 2016) (“Evidence that the industry praised a claimed invention . . . that embodies the patent claims weighs against an assertion that the same claimed invention would have been obvious. Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.”)

The article cited by Patent Owner is a general review of GoPro’s Hero camera’s that lists and describes many of the camera’s features, including SuperView. *See* Ex. 2013. Patent Owner does not provide any evidence that the author of the article is a competitor or industry participant. We find that the brief mention of the SuperView feature being “clever” followed by a description of the invention in the same words used in GoPro’s own materials, is at best, a fairly weak form of industry praise. *Compare* Ex. 2010 (GoPro’s own materials describing SuperView as allowing “an immersive, wide angle perspective” *with* Ex. 2013 (article describing SuperView as allowing “a more immersive wide angle perspective”).

Similarly, even if Patent Owner could show a nexus between this evidence and the challenged claims, reviews from users of GoPro's or its competitors' products, who are not industry participants, do not weigh heavily in our obviousness analysis.

(3) *Commercial Success*

Patent Owner argues that surveys taken of users of its products are evidence of commercial success. Prelim. Resp. 34–36 (citing Ex. 2018, 23; Ex. 2019, 14). The cited survey, however, lists many purchase drivers which are unrelated to claims of the '413 patent. Ex. 2018, 23; Ex. 2019, 14. Thus, Patent Owner does not, on this record, adequately establish commercial success is a direct result of a unique characteristic of the claimed invention.

(4) *Long Felt But Unmet Need*

Patent Owner argues there is evidence of a long-felt need and unexpected results with respect to the SuperView feature. Prelim. Resp. 36. This evidence consists of background information from the '431 patent explaining that converting between aspect ratios was a common problem in the field of image and video processing (*id.* (citing Ex. 1001, 1:6–7)) and testimony from Dr. Foroosh that at the time of the '413 patent, conventional wisdom was that introducing distortion into images was undesirable (*id.* (citing Ex. 2001 ¶ 87)). In addition, Patent Owner cites to a user manual of a camera and argues that such a camera is exemplary of conventional methods of performing aspect ratio conversions that avoided distortion. *Id.* at 37–38 (citing Ex. 2020, 120–1).

We determine that the evidence presented is insufficient to show long felt but unmet need of Patent Owner's products. The need must have been a persistent one that was recognized by those of ordinary skill in the art.

Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc., 707 F.2d 1376, 1383 (Fed. Cir. 1983); *see also Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) (“Absent a showing of long-felt need or the failure of others, the mere passage of time without the claimed invention is not evidence of nonobviousness”). The statements made in its own challenged patent do not establish a long-standing persistent need, nor do they give an indication of the length of time those in the industry recognized the need. Patent Owner also does not provide sufficient evidence of failure of others in addressing the need. Thus, even if there was a nexus between Patent Owner’s products and the challenged claims, we determine Patent Owner’s evidence of long felt need is insufficient to be weighed heavily in the obviousness analysis.

7. *Conclusion – Ground 4*

Having reviewed the parties’ arguments and weighing both the evidence of obviousness and nonobviousness we determine Petitioner has demonstrated a reasonable likelihood of prevailing on claims 1, 6, and 7 of the ’413 patent under Ground 4.

E. *Remaining Grounds 1 and 3*

We have determined that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’413 patent would have been obvious under Ground 4 and consequently we institute on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). It is, therefore, not necessary for us to provide an assessment of every challenge raised by Petitioner. In order to provide guidance to the parties, however, we address certain disputed issues raised under Ground 1 (obviousness over Fleming) and Ground 3 (obviousness over Obara and

Liu). *See* Consolidated Trial Practice Guide (November 2019)⁶ (“CTPG”), 6 (“If a trial is instituted, the Board generally will provide analysis of the strengths and weaknesses of all challenges in the petition in order to provide guidance to the parties for the upcoming trial.”). We start with an overview of the prior art and then provide guidance on the strengths and weaknesses of the disputed issues.

1. Fleming (Ex. 1004)

Fleming is titled “Method and Apparatus for Nonlinear Anamorphic Scaling of Video Images,” and relates “to scaling of video images.” Ex. 1004, code (54), ¶ 1. Fleming explains that a video image is typically scaled linearly in the vertical and/or horizontal directions to fit the entire video image onto a target display area. *Id.* at 1:24–26. Figure 3 of Fleming, reproduced below, depicts an example of nonlinear anamorphic scaling. *Id.* at 2:42–44.

⁶ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

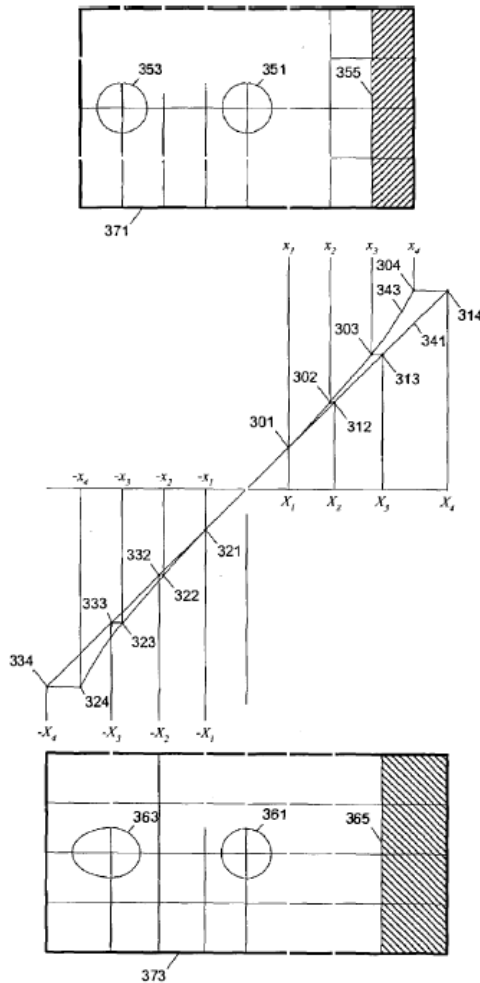


Fig. 3

Figure 3, above, illustrates nonlinear scaling in the horizontal direction. Ex. 1004, 5:33–34. As shown in Figure 3, image 371 is scaled nonlinearly in the horizontal direction to increase the width to that of image 373. *Id.* at 5:17–19. Circle 351 in the center strip of image 371 is displayed as circle 361 in the center strip of image 373, while circle 353 is distorted as curve 363. *Id.* at 5:27–29. Fleming explains that “the nonlinear scaling in the example preserves the original feature of the video image in the area of interest, the center strip.” *Id.* at 5:29–32.

2. *Overview of Obara (Ground 3)*

Obara is titled “Information Processing Apparatus and Image Processing Method,” and relates to “a function for displaying non-linear enlarged image data on a display device without using a dedicated circuit.” Ex. 1006, code (54), ¶ 11. Obara describes non-linear scaling of an original image such that a central area of the image is horizontally reduced while the size of the original image data “is horizontally altered with enlargement ratios that gradually increase toward both ends.” *Id.* ¶ 52.

3. *Overview of Liu (Ground 3)*

Liu is titled “Image Scaling Method and Apparatus,” and “relates to image processing technologies.” Ex. 1005, code (54), 1:13–15. Liu discloses “an image scaling method and apparatus to reduce distortion of a scaled image.” *Id.* at 2:3–5. Liu describes determining “the distribution direction of the main objects in the source image” and scaling the source image “to the target image through a proper nonlinear scaling method according to the distribution direction.” *Id.* 2:25–30. In one embodiment, the scaling takes into account “the distribution of the main objects in the image,” and determines “the segments of the source image and the corresponding scaling factor” according to the distribution. *Id.* at 8:30–34. This approach, according to Liu, “reduces the distortion caused in the scaling process, and brings a good visual effect.” *Id.* at 8:34–37.

4. *Whether the Prior Art Teaches “Determine a Portion Within the Input Image”*

Petitioner argues that Fleming (Ground 1) and Obara (Ground 3) teach “determin[ing] a portion within the input image.” For Ground 1, Petitioner argues that Fleming maintains the original aspect ratio in an area of interest that is a square region at the center of the image. Pet. 15 (citing Ex. 1004,

4:39–40, 5:1–2, 5:17–66, Figs. 2, 3). For Ground 3, Petitioner argues that Obara vertically divides the image into blocks and that blocks in the central area are horizontally reduced. Pet. 56–57 (citing Ex. 1006 ¶¶ 53, 62, Fig. 6; Ex. 1002 ¶¶ 163–165).

Patent Owner argues that Petitioner provides no explanation as to how the prior art determines a portion within the input image prior to applying a transformation to the input image. Prelim. Resp. 12–16.

As guidance to the parties, we note the cited art appears to support Petitioner’s contentions even accepting Patent Owner’s interpretation of the claim requiring that the determining limitation occur prior to the transformation limitation. For example, Fleming discloses that “it is desirable to maintain the original aspect ratio in an area of interest” and therefore “the image in the area of interest is presented in the target display area with reduced distortion.” Ex. 1004, 4:38–45. This indicates that in Fleming the area of interest is determined before the transformation takes place. Similarly, Obara discloses vertically dividing the image into vertical image blocks (certain of these blocks are understood to be the central area) and then horizontally reducing or enlarging the blocks. Ex. 1006 ¶¶ 52–62.

On this record, we find Petitioner’s position to be stronger than Patent Owner’s position on this point.

5. *Whether Petitioner Has Provided a Sufficient Reason to Include Non-Uniform Shifting in a Camera*

Claim 1, recites “[a]n image capture apparatus, comprising: an image sensor . . . [and] one or more physical processors configured [to] . . . apply a transformation [that] non-uniformly shifts the pixels.” Ex. 1001, 8:65–9:21. Claim 1, therefore, requires that the components that non-uniformly shift pixels be included in an image capture apparatus such as a camera.

Fleming, Obara, and Liu, however, do not expressly disclose such a camera. Nevertheless, Petitioner argues that it would have been obvious for “Fleming’s data processing system to be included within a digital camera” (Pet. 37) and for “Obara’s image processing unit and CPU 111 to be included within a camera” (Pet. 71). As a rationale for including these components in a camera, Petitioner argues that at the time of the invention in 2013 digital cameras captured images using an aspect ratio that was different than the aspect ratio that they used to store the images or the aspect ratio used to display the images on their LCD displays. Pet. 28, 71, 72 (citing Ex. 1004, 16:9–11, Ex. 1002 ¶¶ 99–100, 200–202). According to Petitioner, “[s]ince the aspect ratio of the captured image was different than the aspect ratio of the stored file or the LCD display included in the camera, it would have been obvious for the digital camera to include data processing systems to transform the captured image into an output image (having the aspect ratio of the stored file or LCD display) to be presented on the camera display.” *Id.* at 28. Petitioner argues that a “POSITA would have been motivated to have on-camera processing and display capabilities because it would have been less burdensome, cheaper, and saves time. *Id.* at 28–29 (citing Ex. 1002 ¶¶ 99–100.)

Patent Owner argues that “Petitioner does not provide a single shred of evidence that any cameras in 2013 had an ‘aspect ratio of the captured image [that] was different than the aspect ratio of the stored file or the LCD display included in the camera.’” Prelim. Resp. 19. Supported by Dr. Foroosh’s testimony, Patent Owner asserts that “it would be nonsensical to design a camera to capture images in one aspect ratio and store or display them in a different aspect ratio” and that “it would, in fact, be ‘less

burdensome, cheaper, and save[] time’ to use the same aspect ratio.” Prelim. Resp. 19 (citing Ex. 2001 ¶ 59).

Having reviewed the parties’ contentions, the record appears to be more consistent with Patent Owner’s argument. Petitioner does not appear to rely on any evidence in Grounds 1 and 3, other than the Dr. Katsaggelos’s testimony, for its assertion that in 2013, cameras captured images in one aspect ratio and stored or displayed those images in a different aspect ratio. Dr. Katsaggelos testifies that while the aspect ratios of images captured by an image sensor were 3:2 or 4:3 the aspect ratios of “the files that stored the captured images may be in a format for a different aspect ratio, such as 16:9 (e.g., for landscape orientation), or the LCD displays within the camera may have a different aspect ratio, such as 16:10 (for viewing the captured image).” Ex. 1002 ¶¶ 100, 201. Like Petitioner, Dr. Katsaggelos also does not cite to any evidence supporting this testimony. While expert testimony is often offered on the issue of whether there would have been a reason to modify the prior art, because the reason proffered here rests on a specific factual assertion, the absence of underlying facts or data means that Dr. Katsaggelos’s testimony would be given little weight in the obviousness analysis. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”)

With regard to this issue, at this stage of the proceeding, we agree with Patent Owner that Petitioner’s argument is unsupported by sufficient evidence.

III. CONCLUSION

Petitioner has demonstrated a reasonable likelihood of prevailing in showing the unpatentability of at least one challenged claim of the '413 patent. At this stage of the proceeding, however, we have not made a final determination with respect to the patentability of the challenged claims.

IV. ORDER

For the foregoing reasons, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 6, and 7 of the '413 patent is instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '413 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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Patent 10,015,413 B1

FOR PETITIONER:

Alex Yap
Mehran Arjomand
Jean Nguyen
MORRISON & FOERSTER LLP
ayap@mofo.com
marjomand@mofo.com
jnguyen@mofo.com

FOR PATENT OWNER:

James Glass
John McKee
Quincy Lu
QUINN EMANUEL URQUHART & SULLIVAN LLP
jimglass@quinnemanuel.com
johnmckee@quinnemanuel.com
quincylu@quinnemanuel.com