

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

138 EAST LCD ADVANCEMENTS LIMITED,
Patent Owner.

IPR2024-00958
Patent 8,482,638 B2

Before KRISTEN L. DROESCH, GEORGE R. HOSKINS, and
KEVIN C. TROCK, *Administrative Patent Judges*.

TROCK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Granting-in-Part and Denying-in-Part
Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

ORDER
Granting Petitioner's Motion to Exclude Evidence
37 C.F.R. § 42.64(c)

I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, Patent Owner’s Revised Non-Contingent Motion to Amend (Paper 22) is granted as to the cancellation of claims 1, 2, and 4–6 of U.S. Patent 8,482,638 B2 (Ex. 1001, “the ’638 patent”), and denied as to cancellation of original claim 3 and as to adding proposed substitute claims 7–12 (the “substitute claims”).

A. Procedural History

Google LLC (“Petitioner”) filed a Petition, Paper 1, to institute an *inter partes* review of claims 1, 2, and 4–6 (the “challenged claims”) of the ’638 patent. 138 East LCD Advancements Limited (“Patent Owner”) did not file a Preliminary Response. We instituted *inter partes* review of the challenged claims on the grounds presented in the Petition. Paper 6.

After institution, Patent Owner filed a Non-Contingent Motion to Amend, requesting cancellation of claims 1–6 and proposing substitute claims 7–12. Paper 9, 2. Petitioner filed an Opposition to the Motion to Amend. Paper 19. We issued Preliminary Guidance as to Patent Owner’s Non-Contingent Motion to Amend. Paper 21.

Thereafter, Patent Owner filed a Revised Non-Contingent Motion to Amend. Paper 22. Petitioner filed an opposition to Patent Owner’s Revised Non-Contingent Motion to Amend. Paper 26. Patent Owner filed a Reply in support of the Revised Non-Contingent Motion to Amend. Paper 33. Petitioner filed a Sur-reply to Patent Owner’s Revised Non-Contingent Motion to Amend. Paper 37.

Petitioner also filed a Motion to Exclude (“Motion”) Exhibits 2001 (“Certified Translation of JP App. No. 2009-95202”) and 2003 (“Certificate of translation of JP App. No. 2009-95202”). Paper 34. Patent Owner filed an opposition. Paper 36. Petitioner filed a Reply. Paper 38.

An oral hearing was held on October 30, 2025. A transcript of the hearing is included in the record. Paper 42 (“Tr.”).

B. Related Proceedings

According to the parties, the ’638 patent was the subject of the following action: *Longitude Licensing Limited v. Google LLC*, No. 3:23-cv-03046 (N.D. Cal.) filed June 21, 2023, and dismissed as to the ’638 patent on November 15, 2023. Paper 1, 62; Paper 4, 1.

C. The ’638 Patent (Ex. 1001)

The ’638 patent issued on July 9, 2013, and claims priority to a Japanese Patent Application No. 2009-295202 filed on December 25, 2009. Ex. 1001, codes (30), (45). The ’638 patent relates to a digital camera capable of manual focusing and of varying the focal length of a main lens. *Id.* at 1:18–22. According to the ’638 patent, digital cameras traditionally included a double-image matching range finder that included a viewfinder optical system and a range finder optical system. *Id.* at 1:24–30. In these cameras, an image from the range finder optical system is superimposed on a viewfinder image inputted from the viewfinder optical system. *Id.* at 1:32–36. The ’638 patent recognizes, however, that these cameras include complex mechanisms and require high precision in the manufacturing tolerances and assembly. *Id.* at 1:40–46. One stated objective of the ’638 patent is to provide a digital camera for generating a composite image in which two images are superimposed by a simple mechanism. *Id.* at 1:47–50.

Figure 2 of the '638 patent (reproduced below) depicts a perspective view of a digital camera. *Id.* at 2:5.

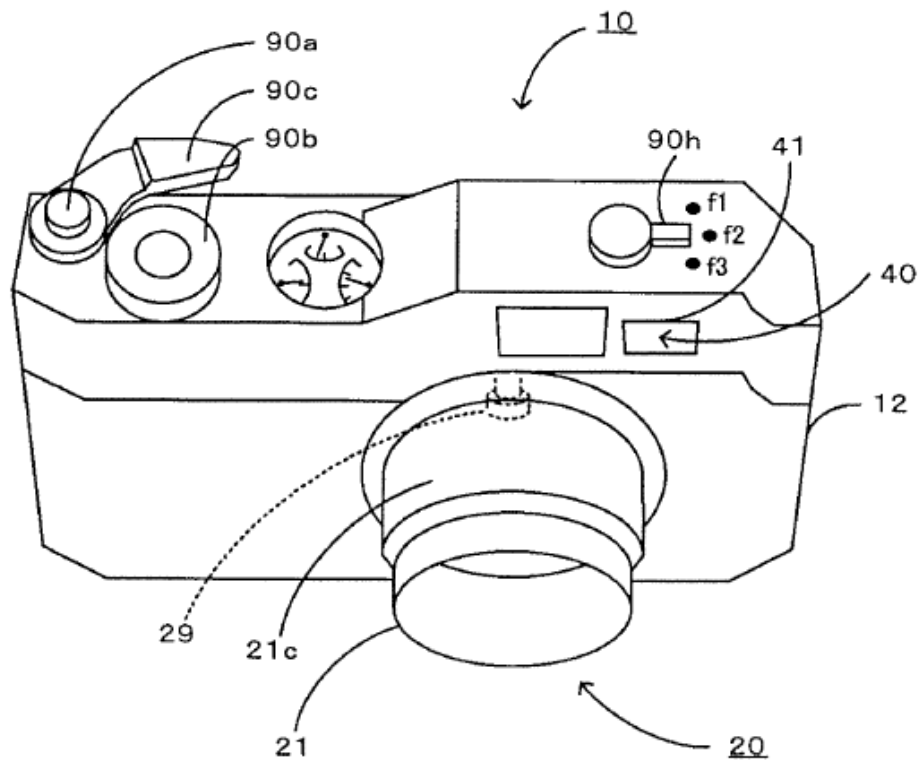


Fig. 2

Figure 2, above, depicts a perspective view showing a digital camera 10 with a main body 12, a main electronic imaging unit 20, a sub-electronic imaging unit 40, an electronic view finder (“EVF”) 82 (shown in Figure 3), and a focal point selection lever 90h. *Id.* at 2:29–46, 4:16–20. The main electronic imaging unit 20 contains an imaging lens 21 and a distancing ring 21c. *Id.* at 2:51–53. The focal point selection lever 90h selects the focal length f of the attached imaging lens 21, while the distance ring 21c changes the focal point position. *Id.* at 2:66–3:3, 4:47–49. The main electronic imaging unit 20 performs a photoelectronic conversion to an image of a subject and outputs a digital signal. *Id.* at 2:35–37.

The sub-electronic imaging unit 40 contains a pan-focus sub-lens 41, which has a fixed focal length. *Id.* at 3:25–26. The sub-electronic imaging unit 40 performs a photoelectronic conversion to an image of a subject and outputs a digital signal for generating a digital signal. *Id.* at 2:37–40.

Figure 1 of the '638 patent is shown below.

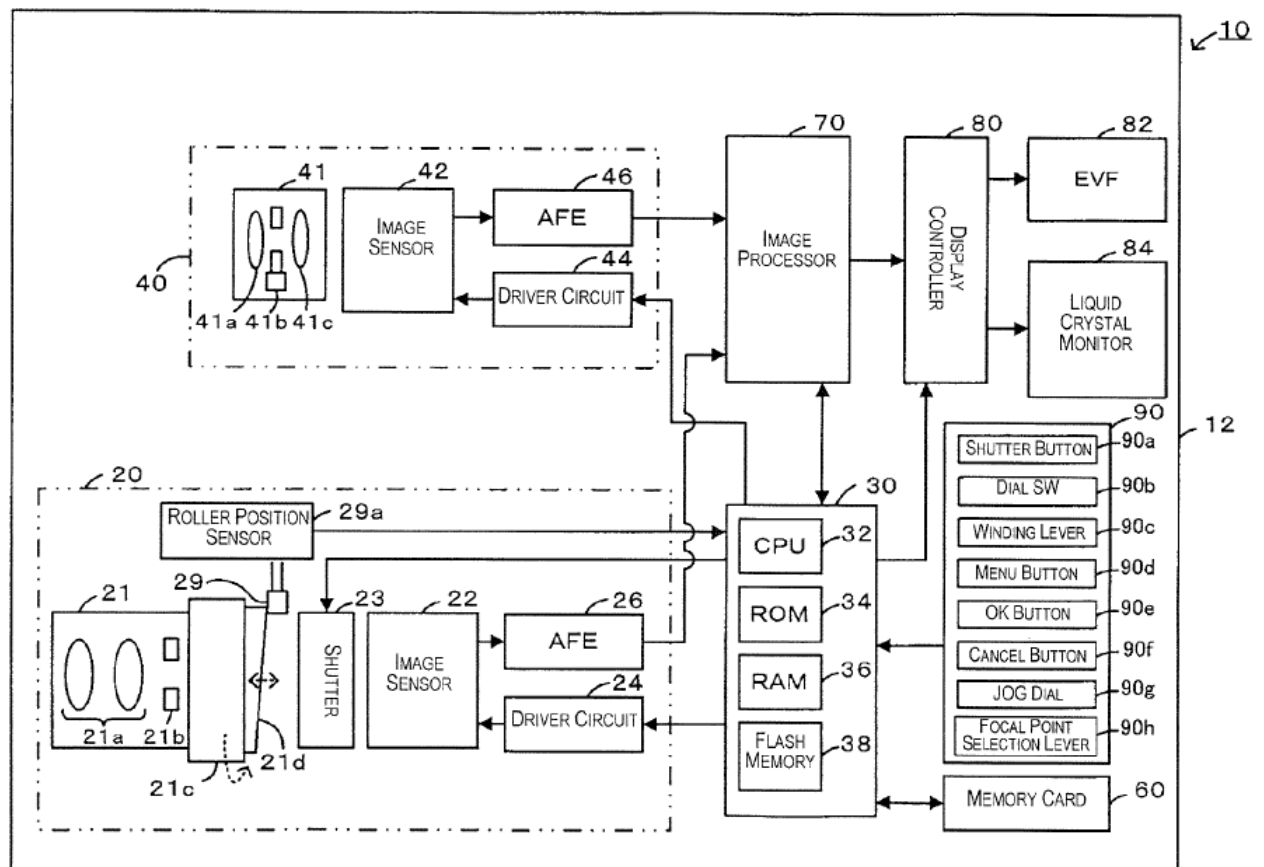


Fig. 1

Figure 1, above, is a view showing the overall configuration of digital camera 10, and includes main electronic imaging unit 20, sub-electronic imaging unit 40, EVF 82, image processor 70, and display controller 80. *Id.* at 2:29–40. Image processor 70 generates a main image and a sub-image from the digital signal outputs of the main electronic imaging unit 20 and sub-electronic imaging unit 40, respectively. *Id.* at 3:51–59. The image processor also generates a viewfinder image by superimposing a partial

image from the sub-image on to the main image. *Id.* at 3:59–4:1. Display controller 80 displays the viewfinder image in the EVF 82.

Figure 6 of the '638 patent is reproduced below.

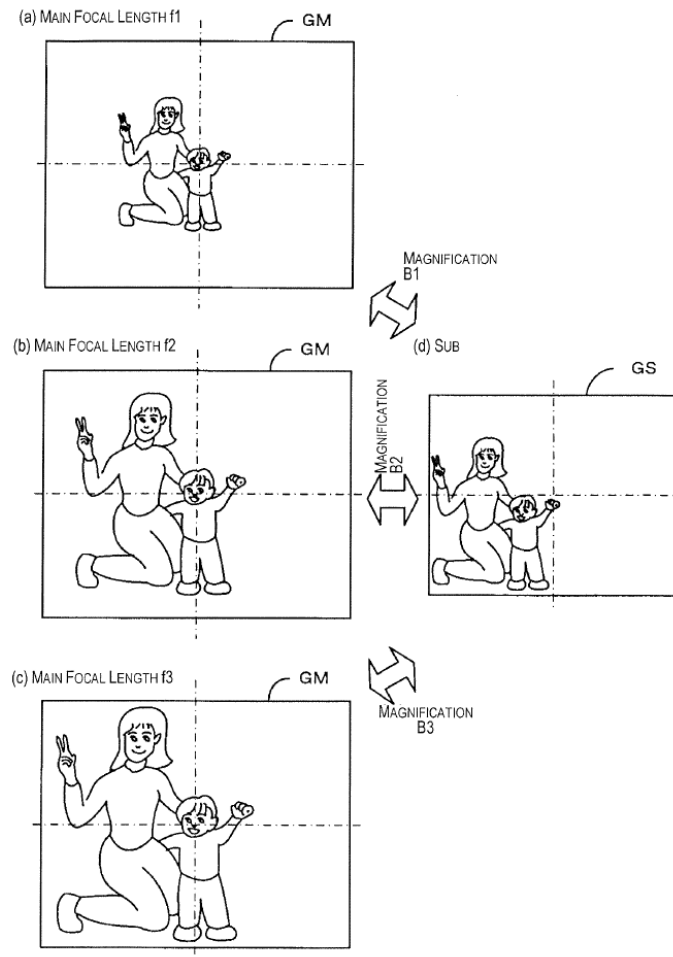


Fig. 6

Figure 6, above, illustrates the concept of a magnification rule, which is a rule for setting the magnification with respect to the sub-image so that the subject appears as the same size in the sub-image and the main image. *Id.* at 6:18–23. Figures 6(a) through 6(c) show the main image, and Figure 6(d) shows the sub-image. *Id.* at 6:23–25. The size of the subject appearing in Figures 6(a) through 6(c) changes according to the focal lengths f_1 , f_2 , and f_3 . *Id.* at 6:34–37. Adjustment magnifications, B_1 , B_2 , and B_3 , align the size of the subject image in the sub-image with the size of the subject in

the main image, and correlate with focal lengths f_1 , f_2 , and f_3 . *Id.* at 6:37–45.

D. Challenged Claims 1, 2, and 4–6

Patent Owner’s Revised Non-Contingent Motion to Amend requests cancellation of claims 1–6. Paper 22, 2 (“Patent Owner respectfully requests the Board grant this motion, cancel claims 1–6, and substitute claims 7–12.”). Petitioner does not oppose Patent Owner’s request.

Section 316(d) does not permit a Patent Owner to cancel or propose substitutes for non-challenged claims. 35 U.S.C. § 316(d)(1). We therefore grant Patent Owner’s request to cancel original claims 1, 2, and 4–6 of the ’638 patent, but do not grant Patent Owner’s request to cancel claim 3, because claim 3 was not challenged by Petitioner.¹

E. Proposed Substitute Claims 7–12

Proposed substitute claim 7 is an independent claim, and proposed substitute claims 8–12 depend, directly or indirectly, from substitute claim 7. Paper 22, App. A. 1–4. Claim 7 is proposed as a substitute for original claim 1 and is set out below, showing added language underlined and deleted language struck out.

7. [7Preamble] A digital camera having a focusing function and a focal length varying function of a main lens, the digital camera comprising:

¹ In our Preliminary Guidance, we advised Patent Owner that pursuant to 35 U.S.C. § 316(d)(1) we “do not consider amendments to claims that are not challenged in this proceeding.” Paper 21, 3. Patent Owner acknowledges that “Petitioner Google LLC did not challenge claim 3 of the ’638 patent.” Paper 22, 2 n.1.

- [7a] a main imaging unit configured to generate a main image by performing a photoelectric conversion from a subject obtained via the main lens;
- [7b] a sub-imaging unit configured to generate a sub-image by performing a photoelectric conversion from the subject obtained via a sub-lens;
- [7c] a focal length acquiring unit configured to acquire the focal length of the main lens;
- [7d] a magnification setting unit configured to set a level of magnification on the basis of the focal length;
- [7e] [7e(i)] a composite image generating unit configured to [1] determine a cutout region in the sub-image, [2] cut out a partial image from the cutout region, [3] magnify at the level of magnification at least one of the main image and the sub-image, and [4] generate a composite image by [combining] superimposing the partial image on the main image [and the sub-image] by mixing pixel values of the partial image with pixel values of the main image,
- [7e(ii)] wherein the generation of the composite image occurs after at least one of the main image and the sub-image is magnified at the level of magnification;
- [7f] an image display unit configured to display the composite image; and
- [7g] wherein the magnification setting unit is configured to set the level of the magnification in order to match substantially a size of the main image and a size of the sub-image.

Paper 22, App. A, 1–2. Alpha-numeric designations suggested by Petitioner.
See Paper 26, 27–28.

F. Evidence

Petitioner relies upon the following evidence:

(1) U.S. Patent Application Publication No. US 2008/0218611 A1, published Sept. 11, 2008 (“Parulski”) (Ex. 1005);

(2) Certified translation of K.R. Patent Publication No. 10-2007-0046010 A, published May 2, 2007 (“Safonov”) (Ex. 1007);

(3) U.S. Patent No. 7,659,923 A1, issued Feb. 9, 2010 (“Johnson”) (Ex. 1018);

(4) U.S. Patent Application Publication No. US 2010/0238325 A1, published Sept. 23, 2010 (“Hoshino”) (Ex. 1021);

(5) Declaration of Robert Stevenson, Ph.D. (Ex. 1003);

(6) Reply Declaration of Robert Stevenson, Ph.D. (Ex. 1022);

(7) Third Declaration of Robert Stevenson, Ph.D. (Ex. 1024);

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of proposed substitute claims 7, 8, and 10–12 on the following grounds:

Claims Challenged	35 U.S.C. §	References
7, 8, 10–12	103(a) ²	Parulski, Safonov
7, 8, 10–12	103(a)	Parulski, Johnson
7, 8, 10–12	103(a)	Parulski, Safonov, Johnson
7, 8, 10–12	103(a)	Parulski, Hoshino

² The ’638 patent was filed before the March 16, 2013, effective date of the § 103 provisions in the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29. Ex. 1001, code (22). Accordingly, we cite to pre-AIA § 103(a).

II. ANALYSIS

A. Principles of Law

In an *inter partes* review, amended claims are not added to a patent as of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 316(d). The Board must assess the patentability of proposed substitute claims “without placing the burden of persuasion on the patent owner.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); see also *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 3–4 (PTAB Feb. 25, 2019) (precedential). Subsequent to the issuance of *Aqua Products*, the Federal Circuit issued a decision in *Bosch Automotive Service Solutions, LLC v. Matal*, 878 F.3d 1027 (Fed. Cir. 2017) (“*Bosch*”), as well as a follow-up Order amending that decision on rehearing. See *Bosch Auto. Serv. Sols., LLC v. Iancu*, No. 2015-1928 (Fed. Cir. Mar. 15, 2018) (Order on Petition for Panel Rehearing).

In accordance with *Aqua Products*, *Bosch*, and *Lectrosonics*, a patent owner does not bear the burden of persuasion to demonstrate the patentability of the substitute claims presented in the motion to amend. Rather, ordinarily, “the petitioner bears the burden of proving that the proposed amended claims are unpatentable by a preponderance of the evidence.” *Bosch*, 878 F.3d at 1040 (as amended on rehearing); see *Lectrosonics*, Paper 15 at 3–4. In determining whether a petitioner has proven unpatentability of the substitute claims, the Board focuses on “arguments and theories raised by the petitioner in its petition or opposition to the motion to amend.” *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 51 (Fed. Cir. 2020).

Patent Owner's proposed substitute claims, however, must meet the statutory requirements of 35 U.S.C. § 316(d) and the procedural requirements of 37 C.F.R. § 42.121. *Lectrosonics*, Paper 15 at 4–8.

Accordingly, Patent Owner must demonstrate: (1) the amendment proposes a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure (and any earlier filed disclosure for which the benefit of filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121.

A proposed substitute claim may be unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented 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) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere

showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

B. Level of Ordinary Skill

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Factors pertinent to determining the level of ordinary skill in the art include (1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) prior-art solutions to those problems; (4) the rapidity with which innovations are made; (5) the sophistication of the technology; and (6) the educational level of workers active in the field. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–97 (Fed. Cir. 1983). Not all factors may exist in every case, and one or more of these or other factors may predominate in a particular case. *Id.* These factors are not exhaustive, but merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). Moreover, the prior art itself may reflect an appropriate skill level. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

In the Institution Decision, we generally adopted Petitioner's proposed assessment of a person of ordinary skill in the art, as a person having a bachelor's degree in electrical engineering, computer science, or related engineering disciplines, and two years of experience in multi-lens camera systems. Paper 6, 8–9. Patent Owner does not address the level of ordinary skill in its briefing.

Petitioner's description of a person of ordinary skill in the art is consistent with the subject matter of the '638 patent. As Patent Owner does not raise an objection, or provide an alternative description, we continue to use the same assessment of a person of ordinary skill in the art that we used in the Institution Decision.

C. Claim Construction

In this proceeding, a claim is construed using the same claim construction standard that would be used to construe a claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100 (2019). We therefore apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually,

the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only terms that are in controversy need to be construed, and then 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) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

In the Institution Decision, we determined that no claim term required express construction at that stage of the proceeding. Paper 6, 10. In its briefing, Patent Owner does not address any claim construction issues. In its Opposition to the Revised Motion to Amend, Petitioner does not propose any express claim construction. To the extent that the determination of the meaning of any claim term is necessary, we use its ordinary and customary meaning in this Decision.

D. Statutory and Regulatory Requirements

1. Reasonable Number of Substitute Claims

A motion to amend must “propose a reasonable number of substitute claims.” 35 U.S.C. § 316(d)(1)(B); *see* 37 C.F.R. § 42.121(a)(3) (“A motion to amend may cancel a challenged claim or propose a reasonable number of substitute claims.”).

Patent Owner proposes the same number of substitute claims as the original challenged claims. Paper 22, 2. “There is a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.” *Lectrosonics*, Paper 15 at 4; *see* 37 C.F.R. § 42.121(a)(3). Petitioner does not argue otherwise. *See* Paper 26.

Based on the complete record, we determine that Patent Owner proposes a reasonable number of substitute claims.

2. Support in the Original Disclosure

A motion to amend may not present substitute claims that introduce new subject matter. 35 U.S.C. § 316(d); 37 C.F.R. § 41.121(a)(2)(ii). New matter is any addition to the claims without support in the original disclosure. *See TurboCare Div. of Demag Delaval Turbomach. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001) (“When [an] applicant adds a claim . . . the new claim[] . . . must find support in the original specification.”); *see also Lectrosonics*, Paper 15 at 7 (“the Board requires that a motion to amend set forth written description support in the originally filed disclosure of the subject patent for each proposed substitute claim”).

Patent Owner has identified written description support for proposed substitute claims 7, 8, and 10–12. Paper 22, 4–10. Petitioner does not challenge Patent Owner’s showing. *See* Paper 26.

Based on the complete record, we determine that the proposed substitute claims do not introduce any new subject matter.

3. Respond to a Ground of Unpatentability

“A motion to amend may be denied where . . . [t]he amendment does not respond to a ground of unpatentability involved in the trial.” 37 C.F.R. § 42.121(a)(2)(i).

Patent Owner asserts that the proposed substitute claims are patentable over the combination of references that forms the basis of the obviousness ground on which we instituted trial. Paper 22, 10–11. Petitioner does not challenge Patent Owner’s assertion that the proposed substitute claims respond to a ground of unpatentability. *See* Paper 26.

Based on the complete record, we determine that the amended language in the proposed substitute claims is responsive to a ground of unpatentability involved in this trial.

4. Scope of the Claims

A motion to amend may not enlarge the scope of the claims of the patent. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Patent Owner asserts that the substitute claims are each narrower than the corresponding original claim. Paper 22, 2–3. Petitioner does not challenge Patent Owner’s assertion. *See* Paper 26.

Based on the complete record, we determine that the proposed amendment does not seek to enlarge the scope of the claims.

E. Relevant Prior Art

1. Parulski (Ex. 1005)

Parulski is a U.S. Patent Application Publication that published on September 11, 2008. Ex. 1005, code (43). Parulski relates to a digital camera that uses multiple lenses and image sensors to provide an improved imaging capability. *Id.* ¶ 1. Parulski describes first and second imaging stages, in which the sensor output from a first imaging stage is used as a primary output image. *Id.* at code (57). The sensor output from the second imaging stage is then used as a secondary output image for modifying the primary output image. *Id.*

Figure 2A of Parulski, reproduced below, illustrates a perspective view of a digital camera. *Id.* ¶ 35.

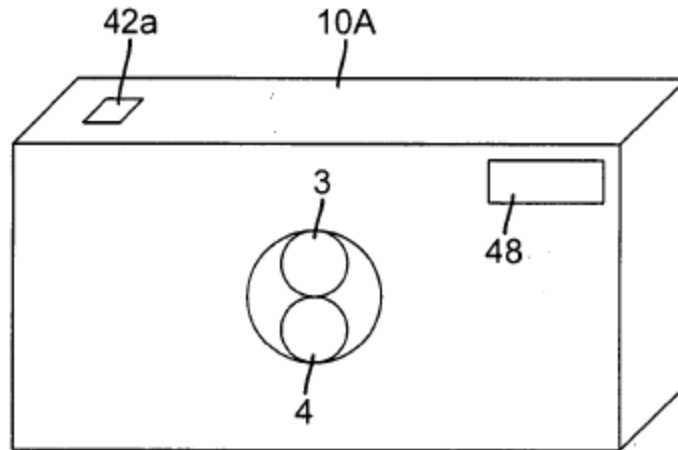


FIG. 2A

Figure 2A illustrates a frontal view of image capture assembly 10A. *Id.* ¶ 76. The image capture assembly 10A contains first zoom lens 3, second zoom lens 4, flash 48, and shutter button 42a. *Id.*

Figure 1 of Parulski, reproduced below, depicts a block diagram of a digital camera. *Id.* ¶ 34.

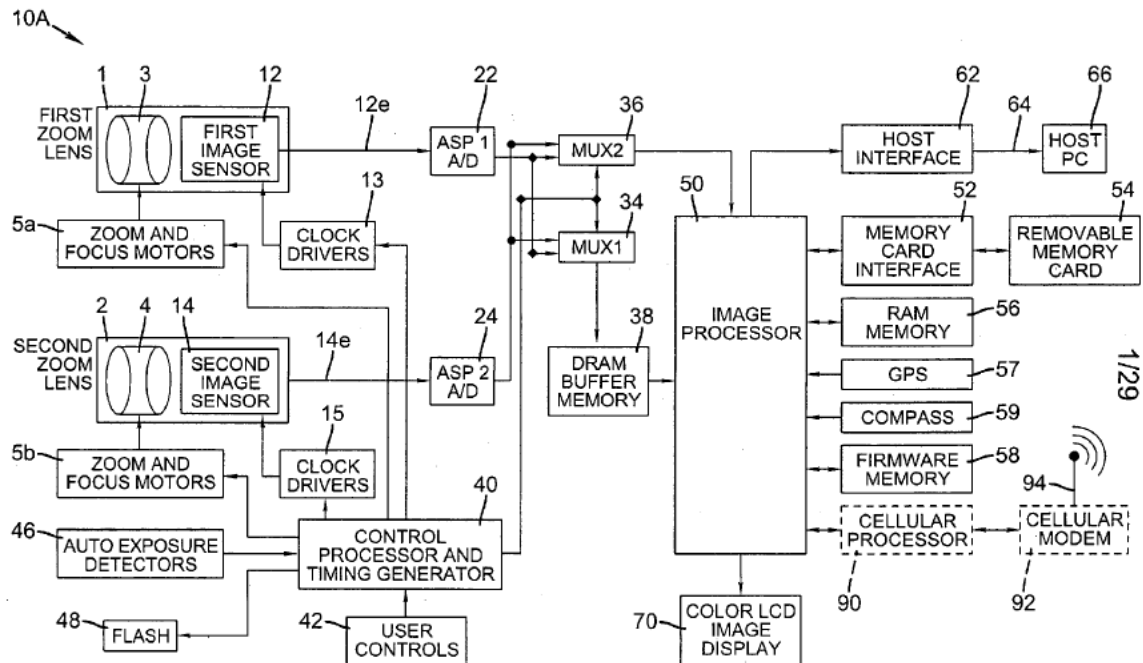


FIG. 1

Figure 1, above, depicts a block diagram of image capture assembly 10A. *Id.* ¶ 74. The image capture assembly 10A includes two imaging stages, 1 and 2. *Id.* ¶ 75. The imaging stages comprise zoom lenses 3 and 4, and image sensors 12 and 14. *Id.* ¶ 77. The first zoom lens 3 is controlled by zoom and focus motors 5a, and the second zoom lens 4 is controlled by zoom and focus motors 5b. *Id.* ¶ 75.

Figure 4 of Parulski, reproduced below, depicts a flow diagram for performing autofocus using a rangefinder with two image capture stages. *Id.* ¶ 37.

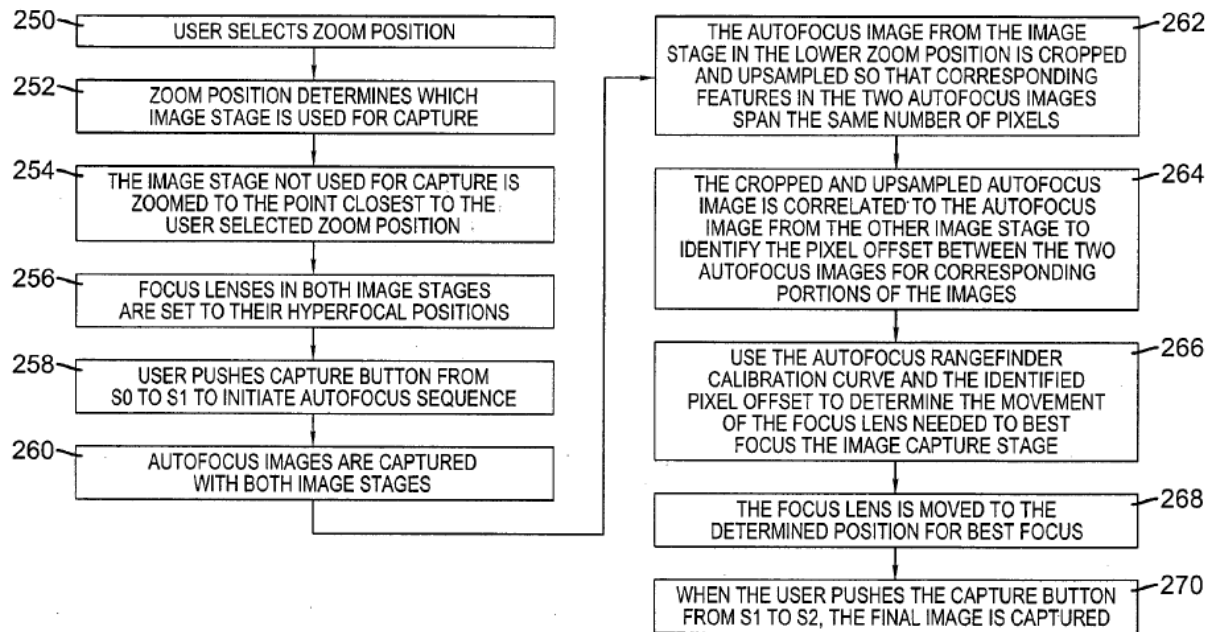


FIG. 4

Figure 4, above, illustrates a flow chart of an autofocus process using two image capture stages in a rangefinder configuration. *Id.* ¶ 92. At block 250 in Figure 4, a user determines the zoom position by adjusting a zoom control on the camera. *Id.* ¶ 92. The zoom position determines which of the first and second image capture stages is used for capturing the final image and which stage is used only for autofocus images. *Id.* At block 254, the image stage not used for capturing the final image is zoomed to a position closest to the user selected zoom position. *Id.*

At block 258, the user presses the shutter button 42a to initiate an autofocus sequence. *Id.* At block 260, autofocus images are then captured by both image capture stages. *Id.* ¶ 93. At blocks 262 and 264, the autofocus image from the image stage in a lower zoom position is cropped and correlated to the autofocus image from the other image stage to identify a pixel shift between the two autofocus images, and thereby produce a focus detection signal. *Id.* At block 266, a calibration factor is applied to the

focus detection signal to determine the distance the focus lens must be moved to produce a best focus condition for the image capture. *Id.* At block 268, the focus detection signal is applied to the zoom and focus motor 5a and the focus lens is then moved the determined distance in the image capture stage that will be used for the final image capture. *Id.*

2. *Safonov (Ex. 1007)*

Safonov is a certified English translation of Korean Patent Publication No. 10-2007-0046010 (Ex. 1006), published on May 2, 2007. Ex. 1007, code (43). Safonov relates to a method of digital image enhancement. Ex. 1007, code (57). Safonov explains that consumer photographs taken with digital cameras have low dynamic range in shadow areas. *Id.* at 5:1–2. Safonov further explains that “current technology used for local dynamic correction” has drawbacks, including not correcting the highlight tone, lacking a combination of global contrast adjustment and shadow correction, inducing halo-effects, increasing noise and JPEG artifacts in shadows, introducing posterization effects, and not automatically obtaining correction levels. *Id.* at 6.

Safonov describes a method of converting a digital image from an RGB color space to the luminance channel of the image, filtering the luminance channel by a bilateral filter, correcting shadow to increase local contrast and luminance, correcting highlight to increase local contrast and decrease luminance, and then converting the corrected image back into an RGB color space. *Id.* at code (57). Safonov also describes using alpha blending to increase the local contrast and luminance of an image. *Id.* at 7.

3. *Johnson (Ex. 1018)*

Johnson is U.S. Patent No. 7,659,923 B1, filed on June 20, 2006, and issued on February 9, 2010. Ex. 1018, codes (22), (45). Johnson is directed

to eliminating “blink-related” closed eyes in portrait photography. *Id.* at code (54). Johnson describes a system and method of eliminating closed or partially closed eyes of a subject in photography caused by a subject blinking at the moment of image capture. Johnson describes how a digital camera, configured to capture two images in quick succession, identifies regions of difference between two images that indicate that eyes are partially or fully closed in one of the two images, and creates a single composite image from the two original images, in which all eyes are open for all subjects in the image. *Id.* at code (57). Figure 4 of Johnson is shown below.

Figure 4

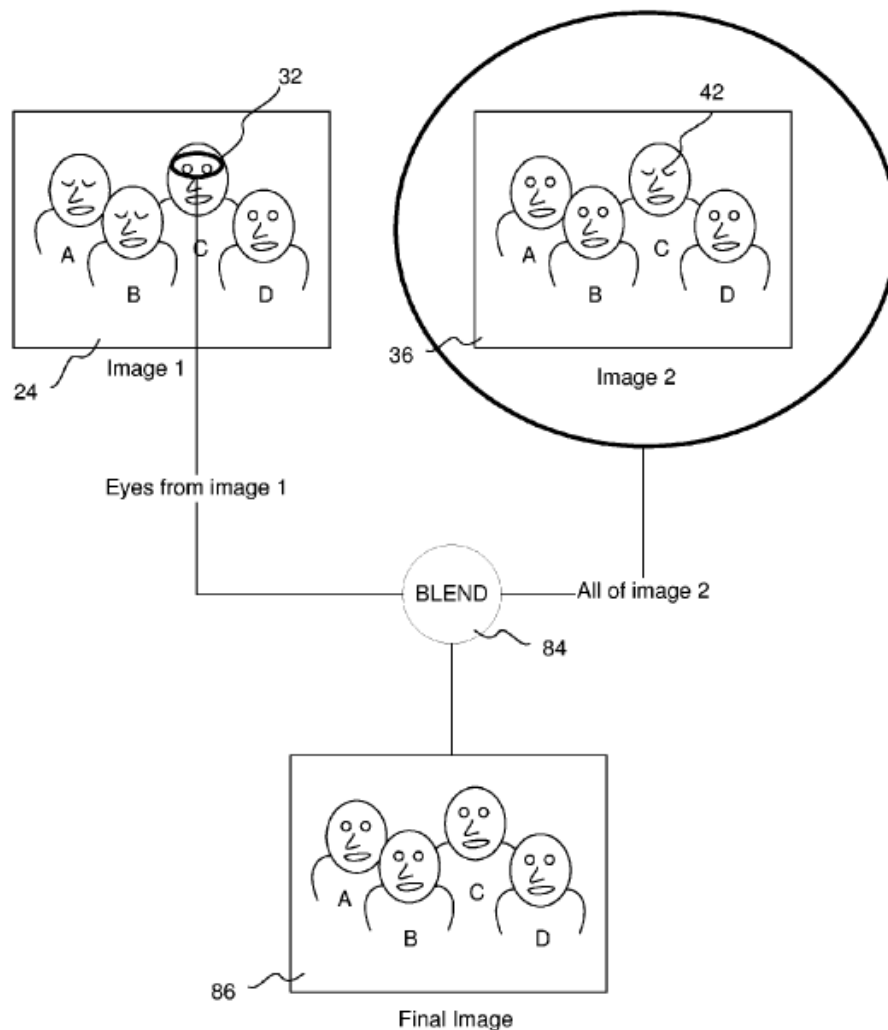


Figure 4 is a graphical representation of Johnson's blending operation. Johnson explains how the two eyes of subject C in preferred region (32) of first image (24) are blended into base image 2 where subject C has his eyes closed (42) to create the blended final image 86 where all subjects A–D have their eyes open. *Id.* Fig. 4; 3:39–50. Johnson describes an algorithm that analyzes the two images and may create a final image “by blending together elements of both images.” *Id.* at 3:11–13.

4. *Hoshino (Ex. 1021)*

Hoshino is a U.S. Patent Application filed on March 19, 2010, and published on September 23, 2010. Ex. 1021, codes (22), (43). Hoshino is directed to an image processor and recording medium. *Id.* at code (54). Hoshino describes an image combining process to combine a background image and a foreground image by specifying a foreground area to be present in front of the foreground image and combining the background image and the foreground image such that the foreground area is disposed in front of the foreground image. *Id.* ¶ 7. As part of this image blending process, Hoshino describes “alpha blending” whereby “the pixels of the subject-background image E1 each are given a weight represented by an alpha (α) value where $0 \leq \alpha \leq 1$ with which the subject image D is alpha blended with a predetermined background.” *Id.* ¶ 39. Hoshino explains that

[t]he subject image subgenerator combines the subject image D and a predetermined monochromatic image (not shown) such that among the pixels of the subject-background image E1, pixels with an alpha value of 0 are not displayed to the monochromatic image and that pixels with an alpha value of 1 are displayed, thereby generating image data of the non-display area-subject image P2.

Id. ¶ 40.

F. Patentability Analysis

The Petition challenges the patentability of original claims 1, 2, and 4–6 as obvious under 35 U.S.C. § 103(a). Paper 1, 1. Subsequent to the Institution Decision (Paper 6), Patent Owner filed a Revised Non-Contingent Motion to Amend (Paper 22), requesting the cancellation of original claims 1–6, and proposing substitute claims 7–12. Paper 22, 2. Because we are granting Patent Owner’s Revised Non-Contingent Motion to Amend cancelling original claims 1, 2, and 4–6, we do not address the patentability of these original claims. Instead, we address Petitioner’s challenge to the patentability of the proposed substitute claims. *See Intuitive Surgical, Inc. v. Ethicon LLC*, IPR2018-00933, Paper 31 at 3, note 5 (PTAB Dec. 3, 2019); *NXP USA, Inc. v. Impinj, Inc.*, IPR2020-00514, Paper 37 at 9 (PTAB Aug. 11, 2021) (“As Patent Owner’s non-contingent Revised Motion to Amend cancels all of the challenged claims, we address only Patent Owner’s proposed substitute claims 22–36.”).

G. Obviousness Based on Parulski and Safonov (Ground 1)

Petitioner contends proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined teachings of Parulski and Safonov. Paper 26, 3–16. Patent Owner disputes Petitioner’s contention, in particular Petitioner’s showing with respect to a rationale to combine Parulski and Safonov and limitation [7e(i)], “*a composite image generating unit configured to . . . [4] generate a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image.*” Paper 33, 2–8. Patent Owner argues that there is no motivation to combine Parulski and Safonov, and that the asserted prior art does not disclose

limitation [7e(i)[4]. *Id.* We first consider Petitioner’s rationale to combine the asserted references.

1. Rationale to Combine

Petitioner contends that a person of ordinary skill in the art “would have been motivated to use Safonov’s alpha blending as part of Parulski’s composite image generating unit to combine the main image and the sub-image when creating the composite, augmented, or enhanced image.” Paper 1, 56 (citing Ex. 1003 ¶¶ 169–176).

According to Petitioner, “both Parulski and Safonov relate to cameras that combine multiple images into a single enhanced image,” thus a person of ordinary skill in the art “would have known that the alpha blending disclosed in Safonov was a common, conventional technique used when combining images because it permits one image to be overlaid on the other, and the alpha channel or transparency can be used to smooth away differences in the images.” Paper 1, 56–57 (citing Ex. 1001, 7:21–35; Ex. 1003 ¶ 170; Ex. 1007, 7; Ex. 1009 ¶¶ 3, 7).

Petitioner asserts that a person of ordinary skill in the art “would have further been motivated to use the well-known alpha-blending technique in Safonov with Parulski’s composite image generating unit when creating the composite image because the alpha-blending translucency would have helped smooth over the altered region, allowing the added sub-image to be more seamlessly integrated into the main image.” Paper 1, 57 (citing Ex. 1003 ¶¶ 171–172; Ex. 1009 ¶ 3). Petitioner asserts that “to the extent Parulski’s replacement is silent on the replacement method, a POSITA would have looked to Safonov’s alpha blending to mix pixels of two images as a known way to combine Parulski’s main image and sub-image.” Paper 26, 6–7 (citing Ex. 1003 ¶¶ 94–103, 169–179; Ex. 1024 ¶¶ 72–87).

Petitioner argues that a person of ordinary skill in the art “would have found it desirable to combine Parulski’s main and sub-images by using alpha blending (mixing pixels) to minimize or hide at least the edges where the main image and the sub-image meet.” Paper 26, 7 (citing Ex. 1025 ¶ 76). According to Petitioner, a person of ordinary skill in the art “would have been motivated to do this to, for example, smooth the transition between the sub-image that has less blur or improved dynamic range compared to the main image.” Paper 26 (citing Ex. 1003 ¶¶ 93–97, 168–170; Ex. 1024 ¶ 76; Ex. 1025, 1; Ex. 1026, 1, 7, 21).

According to Petitioner’s witness, Dr. Stevenson, a person of ordinary skill in the art

would have found it obvious to use alpha blending to mix pixels of Parulski’s replacement sub-image portion and the main image to improve the dynamic range of the composite image (e.g., to improve contrast in highlights or shadows) and/or to blend away any differences in resolution, sharpness, color variation, or gain settings, thereby cohesively integrating the sub-image into the main image (e.g., superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image).

Ex. 1024 ¶ 76. “Indeed,” Petitioner argues, “the very purpose of alpha blending is to use the ‘alpha channel’ to mix pixels from two images such [that] the resulting pixel represents the combination of the two pixels in the replaced area at the overlapping portions, like the overlapping portions of the main image and the sub-image in Parulski.” Paper 26, 7 (citing Ex. 1009 ¶¶ 3, 7; Ex. 1003 ¶¶ 98–100; Ex. 1024 ¶ 78; Ex. 1007, 7; Ex. 1025, 1–3).

Petitioner argues that “[b]ecause Safonov teaches an example method to achieve Parulski’s goal when combining images, a POSITA would have been motivated to use Safonov’s alpha blending in Parulski[’s] composite

image generation by superimposing the partial image on the main image by mixing pixel values, as recited in [limitation] [7e(i)[4]].” Paper 26, 9 (citing Ex. 1024 ¶¶ 77–87).

Petitioner also asserts that a person of ordinary skill in the art “would have been motivated to incorporate Safonov’s alpha blending into Parulski’s creation of a modified image to further enhance the quality of the modified image to achieve Parulski’s goal of the modified image having ‘relatively low noise and good sharpness.’” Paper 1, 58 (citing Ex. 1005 ¶ 31; Ex. 1003 ¶ 176). “For example,” Petitioner explains, “Safonov discloses that the alpha blending can enhance the modified image by increasing contrast and modifying the luminance, which is one known way of achieving Parulski’s desired improvements.” Paper 1, 58 (citing Ex. 1007, 7; Ex. 1003 ¶ 176).

Petitioner also asserts that a person of ordinary skill in the art “would have been motivated to incorporate Safonov’s alpha blending into creating the composite image because it was a well-known technique used in image editing, image processing, and image combination software to combine multiple images into a single composite image, and thus represents a known technique in the art that would have yielded predictable results.” Paper 1, 57 (citing Ex. 1009 ¶ 3; Ex. 1003 ¶ 173).

Petitioner argues that

because alpha blending was a conventional technique in the prior art for combining two images, a POSITA would have recognized that it was a known, predictable solution that would have had a reasonable expectation of success to combine Parulski’s main image and sub-image into a composite image and, therefore, would have been obvious to try as a method of combining the main image and the sub-image.

Paper 1, 58 (citing Ex. 1003 ¶¶ 174–175).

Petitioner also contends that a person of ordinary skill in the art “would have had a reasonable expectation of success in using Safonov’s alpha blending to enhance Parulski’s modified image because it would have merely involved incorporating a known image blending technique that was known to be used with digital camera images and was well within the POSITA’s skill to incorporate.” Paper 1, 58 (citing Ex. 1003 ¶ 177).

Petitioner asserts that a person of ordinary skill in the art would have recognized that incorporating Safonov’s alpha blending into Parulski’s composite image generating unit would have required only the application of known, conventional software and image processing techniques for alpha blending and then applying the alpha blending to portions of the second image (sub-image) over a “corresponding portion[]” of the first image (main image) to obtain the enhanced or modified image with “relatively low noise and good sharpness,” improved focus depth, increased local contrast, and reduced luminance. Paper 1, 59 (citing *id.* at 54–59; Ex. 1003 ¶ 178; Ex. 1005 ¶¶ 31, 138–140, 145).

Petitioner argues that “[u]sing alpha blending to combine the main image and the sub-image would have been merely the straightforward application of known, conventional techniques applied to Parulski’s already-disclosed combination of the main image and the sub-image . . . used according to their known functions to yield predictable results (creating a composite image using the processes disclosed in Parulski). Paper 1, 59 (citing *id.* at 20–27, 54–59; Ex. 1003 ¶ 178).

“Thus,” Petitioner argues “Parulski in combination with Safonov discloses or renders obvious ‘a composite image generating unit configured to generate a composite image by combining the main image and the sub-

image, after at least one of the main image and the sub-image is magnified at the level of magnification.” Paper 1, 59 (citing Ex. 1003 ¶¶ 166–179).

Patent Owner contends that “there is no motivation to combine Parulski and Safonov.” Paper 33, 5. Patent Owner argues that “Petitioner fails to demonstrate that, as of 2009, a POSITA would have been motivated to modify Parulski to minimize or hide edges where the primary image and the secondary image meet.” Paper 33, 6. Patent Owner argues that Petitioner’s reliance on Yadav (Ex. 1009) is inappropriate because Yadav “was not published until May 16, 2013, more than three years after the priority date of the ’638 patent,” and that a person of ordinary skill in the art “could not have read Yadav at the time the ’638 patent was filed” and so “could not have been motivated based upon it.” Paper 33, 6. Patent Owner also argues that Petitioner relies on “unexplained citations to several paragraphs of its expert, Dr. Stevenson’s declarations,” and that “these unexplained citations are insufficient to establish a motivation to modify the cited references.” *Id.*

Patent Owner further argues that a person of ordinary skill in the art “would not have looked to Safonov . . . because Safonov’s alpha blending does not achieve [Petitioner’s stated] motivation.” *Id.* at 7. Patent Owner asserts that “Safonov’s alpha blending fixes shadows and highlights within a *single* image using a particular algorithm to generate intermediate images from which the alpha coefficients are derived.” *Id.* (citing Ex. 1007 at 7, 10). “Parulski,” Petitioner asserts, “begins with two images, neither of which are subject to the bilateral filtering necessary to create the alpha coefficients in Safonov.” Paper 33, 7.

According to Patent Owner, “nothing in Safonov indicates that the alpha blending algorithm disclosed is usable to minimize or hide edges from

multiple images, which is Petitioner’s alleged motivation to combine.” *Id.* at 8. Patent Owner asserts that “Safonov is explicit that the disclosed alpha blending method corrects highlights and shadows within a single source image.” *Id.* (citing Ex. 1007, 1). Patent Owner also asserts that Petitioner’s argument to improve “dynamic range” fails because “Safonov’s alpha blending in the context of a single image by a particular method would [not] have motivated a POSITA to use alpha blending in the context of Parulski’s multiple image combination.” Paper 33, 8.

We disagree with Patent Owner. Patent Owner argues that Petitioner’s reliance on Yadav (Ex. 1009) is improper because Yadav “was not published until May 16, 2013, more than three years after the priority date of the ’638 patent.” However, under 35 U.S.C. § 102(e)(1), a published patent application, such as Yadav, is deemed to be prior art as of its *filing* date, not its *publication* date as Patent Owner asserts. *See Lynk Labs, Inc. v. Samsung Elecs. Co., Ltd.*, 125 F. 4th 1120, 1126–27 (Fed. Cir. 2025) (“[U]nder § 102(e)(1), even if a patent application was *published* after a claimed invention, it may serve as prior art to the invention if the application was *filed* before the invention.”). Yadav was filed on September 14, 2009 (Ex. 1009, code (22)), before the ’638 patent’s earliest possible priority date of December 25, 2009 (Ex. 1001, code (30)), making it prior art.

Patent Owner also argues that “Safonov’s alpha blending fixes shadows and highlights within a ***single*** image” whereas “Parulski begins with two images” and “nothing in Safonov indicates that the alpha blending algorithm disclosed is usable to minimize or hide edges from multiple images.” Paper 33, 7–8. We disagree. Safonov teaches using alpha blending to improve dynamic range or contrast of images by blending high-

contrast images (D_s , D_h) with each other and a source image I . Ex. 1007, 7–8; Ex. 1024 ¶ 75. Dr. Stevenson testifies, and we agree, that

Safonov applies alpha blending to at least two images—a “source image I ,” “detail image D_s ” and/or “digital image D_h ,” where D_s may be used to “increase the local contrast and luminance of the source image I using the ... alpha blending formula of I and D_s ,” and D_h may be used to “to increase the local contrast of the source image I and also reduce luminance using the ... alpha blending formula of I and D_h .”

Ex. 1024 ¶ 75 (citing Ex. 1007, 7–8).

Dr. Stevenson also testifies, and we agree, that “Safonov’s process combines two images using alpha blending and provides a method to achieve Parulski’s similar objective of replacing image portions to ‘broaden[]’ the ‘dynamic range’ of the main image, by using ‘under- or over-exposed’ images to ‘capture detail’ in ‘highlights’ or ‘shadows’ that are then ‘replac[ed]’ in the main image to create an improved composite image.” Ex. 1024 ¶ 84. “Because Safonov teaches an example method to achieve Parulski’s goal when combining images, a POSITA would have been motivated to use Safonov’s alpha blending in Parulski[’s] composite image generation by superimposing the partial image on the main image by mixing pixel values.” *Id.*

Dr. Stevenson provides competent, credible testimony that is supported by the teachings of Safonov and Parulski. Patent Owner has not provided declaration testimony to rebut Dr. Stevenson’s testimony or to support Patent Owner’s assertions. As a result, Patent Owner’s assertions are founded mostly on attorney argument, and the testimony of Dr. Stevenson stands unrebutted by evidence. *See Invitrogen Corp. v. Clontech Lab., Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005) (“Unsubstantiated attorney argument regarding the meaning of technical evidence is no substitute for

competent, substantiated expert testimony.”); *Icon Health & Fitness, Inc. v. Strava Inc.*, 849 F.3d 1034, 1046 (Fed. Cir. 2017) (“Attorney argument is not evidence or explanation in support of a conclusion.”); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979) (“Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight.”).

Accordingly, we find that Petitioner has established by a preponderance of the evidence that one of ordinary skill in the art at the time of the invention would have had reason to combine the teachings of Parulski and Safonov in the manner described and would have had a reasonable expectation of success in that endeavor.

2. *Proposed Substitute Claims 7, 8, and 10–12*³

As noted above, under Ground 1 Petitioner contends proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined teachings of Parulski and Safonov. Paper 26, 3–16. Claim 7 is the only independent proposed substitute claim, and the remaining proposed claims depend from claim 7, directly or indirectly. Paper 22, App. A. Petitioner’s contentions under Ground 1 are supported by the testimonial evidence of Dr. Stevenson. Ex. 1024 ¶¶ 44–151.

Under Ground 1, Patent Owner does not contest Petitioner’s evidence and arguments with respect to proposed dependent claims 8 and 10–12. *See* Paper 33, 2–8. Moreover, with respect to proposed independent claim 7,

³ 35 U.S.C. § 316(d)(1) does not permit Patent Owner to cancel or propose substitutes for non-challenged claims. Petitioner did not challenge original claim 3 in the Petition (*see* Paper 1, 1) or the patentability of proposed substitute claim 9 (*see* Paper 26, 3–25). Accordingly, we do not reach Patent Owner’s proposed substitute claim 9.

Patent Owner only contests Petitioner's evidence concerning limitation [7e(i)[4], which recites "*a composite image generating unit configured to . . . generate a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image.*" *Id.* at 2–5.

We have considered Petitioner's undisputed evidence and arguments concerning proposed substitute claims 7, 8, and 10–12, including the unrebutted testimony of Dr. Stevenson. *See* Paper 26, 3–16; Ex. 1024 ¶¶ 44–151. For these undisputed proposed substitute claims and limitations, we determine that Petitioner has established by a preponderance of the evidence that the combined teachings of Parulski and Safonov meet the particular limitations of these proposed substitute claims and that a person of ordinary skill in the art at the time of the invention would have combined the teachings of Parulski and Safonov in the manner described and would have had a reasonable expectation of success in so doing.

We now consider the parties' evidence and arguments with respect to disputed limitation [7e(i)[4], "*a composite image generating unit configured to . . . generate a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image.*"

In its Opposition, Petitioner asserts that "Parulski discloses the composite image generating unit that replaces portions of the first image ('main image') obtained using the first imaging stage 1 with a 'corresponding portion' of the second image ('sub-image') obtained using the second imaging stage 2 to create an enhanced or modified image." Paper 26, 4 (citing Paper 1, 21; Paper 19, 3–7). According to Petitioner, the "composite image provides an improved image with, for example, 'relatively

low noise and good sharpness.” Paper 26, 4 (citing Paper 1, 21; Paper 19, 3–4; Ex. 1024 ¶ 84; Ex. 1005 ¶¶ 30–31).

Petitioner also asserts “that the combination of Parulski and Safonov in the Petition renders obvious the claimed ‘superimposing the partial image on the main image by mixing pixel values.’” Paper 26, 13. Petitioner argues that a person of ordinary skill in the art “would have found it obvious to improve on Parulski’s replacement by using alpha blending or . . . would have found it obvious to look to alpha blending as [a] way to achieve Parulski’s replacement with the goal of ‘gener[ating] an enhanced image’ with improved ‘dynamic range.’” Paper 26, 13 (citing Ex. 1005, Abstr., ¶¶ 26, 30–31, 59, 64, Fig. 26; Ex. 1024 ¶ 84).

Petitioner argues that Safonov “alpha blends (mixes pixels) from different images, such as one with high contrast in shadows or one with high contrast in highlights, with a main or source image to improve the source image’s image quality.” Paper 26, 14 (citing Ex. 1007, 7–8; Ex. 1024 ¶¶ 32–35, 75, 78). Petitioner explains that

Safonov applies alpha blending to at least two images—a “source image I,” “detail image Ds” and/or “digital image Dh,” where Ds may be used to “increase the local contrast and luminance of the source image I using the . . . alpha blending formula of I and Ds,” and Dh may be used “to increase the local contrast of the source image I and also reduce luminance using the . . . alpha blending formula of I and Dh.”

Paper 26, 14 (citing Ex. 1007, 7–8). Petitioner asserts that “[w]hen the alpha blending occurs, at least these two images are blended together, and also with the original source image” and “detail image Ds and digital image Dh “are distinct images from each other and the source image.” Paper 26, 15.

Petitioner points out that “Patent Owner does not dispute that Parulski discloses generating an enhanced composite image created by combining a

main image and partial image.” Paper 26, 13 (citing Paper 22, 12–13). “Moreover,” Petitioner continues, “Patent Owner does not dispute that Safonov teaches alpha blending by mixing pixel values.” Paper 26, 13 (citing *id.* at 3–16). Petitioner asserts that “both Parulski and Safonov combine their images to achieve greater dynamic ranges (e.g., contrast in shadows/highlights) and increase sharpness.” *Id.* (citing Ex. 1024 ¶ 84).

According to Patent Owner, however, “Petitioner does not dispute that Parulski fails to disclose ‘*a composite image generating unit configured to . . . generate a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image,*’” as recited in limitation [7e[i]][4]. Paper 33, 2 (citing Paper 26, 4, 6). Patent Owner asserts that “Petitioner also does not dispute that Parulski only teaches that portions of a first image are completely ‘replaced’ by portions of a second image.” *Id.* at 2–3 (citing Paper 26, 4) (emphasis omitted).

Patent Owner also asserts that Safonov “does not teach using alpha blending to mix pixel values for the purpose of combining portions of one image with corresponding portions of another image. Instead, Safonov discloses that alpha blending can be used to combine a source image with a filtered version of that same image.” Paper 33, 3. “Thus,” Patent Owner argues, “Safonov also does not disclose ‘generat[ing] a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image.’” *Id.*

According to Patent Owner, “Safonov uses alpha blending as part of a feedback loop according to a particular formula that is used to correct highlights and shadows within a *single* image, not to combine a partial image and main image.” *Id.* at 4 (citing Ex. 1007, 7). Patent Owner argues

that a person of ordinary skill in the art “would not have found it obvious to use Safonov’s alpha blending with Parulski’s combination of a primary and secondary image because the very alpha coefficients used in Safonov depend on the filtering operation (within Safonov’s feedback loop) performed on a single source image.” Paper 33, 4 (citing Ex. 1007, 10). Patent Owner asserts that “Petitioner does not explain why a POSITA would have found it obvious to use (or even *could* have used) Safonov’s filtering and alpha blending adapted for a single input image with Parulski’s *two* images.” Paper 33, 4.

Patent Owner, however, acknowledges that “alpha blending may have been *generally* known to exist,” but argues instead that “the *specific use* of alpha blending to generate a composite image by superimposing a partial image on a main image by mixing pixel values . . . was *not* known or obvious.” *Id.* at 5.

We disagree with Patent Owner. The test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Accordingly, one cannot show non-obviousness by attacking references individually where, as here, obviousness is based on combinations of references. *Id.* Patent Owner’s arguments that neither Parulski nor Safonov separately teach limitation [7e[i]][4] are therefore unavailing, for it is what the combined teachings of Parulski and Safonov would have suggested to one of ordinary skill in the art at the time of the claimed invention that is the test for obviousness.

Here, Petitioner provides substantive evidence to demonstrate that one of ordinary skill in the art at the time of the claimed invention would have found it obvious to use Safonov’s teaching of alpha blending to improve

Parulski's process for producing modified or enhanced images from primary and secondary images. Paper 26, 3–16; Ex. 1024 ¶¶ 72–88; *see also* Paper 1, 20–27; Ex. 1003 ¶¶ 166–179.

For example, Dr. Stevenson testifies, and we agree, that Parulski discloses replacing portions of the first image (main image') obtained using the main lens of the first imaging stage 1 with a "corresponding portion" of the second image ('sub-image') obtained using the lens of the second imaging stage 2 to create an enhanced or modified image with "relatively low noise and good sharpness." Ex. 1003 ¶ 90 (citing Ex. 1005 ¶¶ 31, 138–140, 145). Parulski discloses a type of image augmentation or modification in which "an image is captured from the primary capture unit at one focus position and another image is captured from the scene analysis capture unit (the secondary image capture unit) at another focus position. Then, the two images are combined into a modified image with a broadened depth of field." Ex. 1005 ¶ 139.

Parulski explains that a secondary image "may be used by the processing stage for a number of purposes, including without limitation: to sharpen portions of the primary image . . . to modify the dynamic range of the primary image . . . to provide scene analysis data . . . or to obtain a modified image with relatively low noise and good sharpness." Ex. 1005 ¶ 31.

Safonov discloses "a method of digital image enhancement" involving "correcting shadow to increase local contrast and luminance, respectively, and correcting highlight to increase local contrast and decrease luminance," whereby "the quality of photographs can be improved." Ex. 1007, code (57). Safonov describes using a "detail image" D_s with high local contrast in shadows and a "digital image" D_h with high local contrast in the highlight

area, and using those images “to increase the local contrast and luminance of the source image I” using an “alpha blending formula.” *Id.* at 7.

Dr. Stevenson testifies that alpha-blending as described in Safonov was a common, well-known technique for combining images dating back to at least the 1980s. Ex. 1024 ¶¶ 78–81.

Dr. Stevenson also testifies that a person of ordinary skill in the art would have found it obvious to use Safonov’s alpha blending as part of generating the composite image when combining the main image and sub-image. For example, a POSITA would have understood that the combined image should be created in a way that minimizes or hides the edges where the main image and sub-image meet, and would have recognized that blending the images would have smoothed the transition to prevent the user from seeing where the second image was used to replace part of the main image. In my opinion, a POSITA would have found it obvious to use alpha blending on some (e.g., edges) or all of the sub-image portion added to the main image, such as where the sub-image has been superimposed over the main image because it has less blur or improved dynamic range compared to the main image, to blend away any differences in resolution, color variation, or gain settings, thereby cohesively integrating the sub-image into the main image.

Ex. 1024 ¶ 76.

Dr. Stevenson further testifies that a person of ordinary skill in the art would have been motivated to use alpha blending

to improve Parulski’s replacement using sub image portions to smooth the transition between the sub image and the main image, so that the integration does not expose differences in resolution, sharpness, color balance, or gain settings. For example, where Parulski uses a higher-quality sub image to enhance regions of the main image (e.g., with improved dynamic range or reduced blur), alpha blending would have allowed those enhancements to be incorporated without introducing artifacts at the borders, thereby yielding a more cohesive and visually natural composite image. Thus, a

POSITA would have found it obvious to use alpha blending to mix pixels of Parulski's replacement sub-image portion and the main image to improve the dynamic range of the composite image (e.g., to improve contrast in highlights or shadows) and/or to blend away any differences in resolution, sharpness, color variation, or gain settings, thereby cohesively integrating the sub-image into the main image (e.g., superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image).

Id.

We credit Dr. Stevenson's testimony, which is consistent with, and supported by, the disclosures of Parulski and Safonov. Dr. Stevenson's testimony stands unrebutted by evidence, as Patent Owner has not provided declaration testimony to support Patent Owner's assertions. As a result, Patent Owner's assertions are founded mostly on attorney argument, and unsubstantiated attorney argument regarding the meaning of technical evidence is not a substitute for competent, substantiated expert testimony. *See Invitrogen*, 429 F.3d at 1068; *Icon Health & Fitness*, 849 F.3d at 1046 ("Attorney argument is not evidence or explanation in support of a conclusion."); *Payne*, 606 F.2d at 315 ("Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight.").

Based upon consideration of the entire record, we are persuaded by Petitioner's evidence and arguments, notwithstanding any evidence or arguments provided by Patent Owner, and determine that Petitioner has demonstrated by a preponderance of the evidence that the combined teachings of Parulski and Safonov meet the limitations of proposed substitute claims 7, 8, and 10–12, and that a person of ordinary skill in the art at the time of the invention would have had sufficient reason to combine

their teachings in the manner proposed and would have had a reasonable expectation of success in so doing.

H. Obviousness Based on Parulski and Johnson (Ground 2)

For Ground 2, Petitioner contends proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined teachings of Parulski and Johnson. Paper 26, 16–19. Petitioner provides the testimonial evidence of Dr. Stevenson in support of its contentions. Ex. 1024 ¶¶ 152–165.

With respect to proposed substitute independent claim 7, Petitioner contends that “Parulski (thus, the combination of Parulski and Johnson) discloses or renders obvious [7preamble]-[7d], [7e(i)[1-3]], [7e(ii)], and [7f]-[7g], as explained in Ground 1 and the Petition and Opposition to MTA.” Paper 26, 16 (citing *id.* at 3–16; Ex. 1024 ¶ 152). Patent Owner does not contest Petitioner’s evidence or arguments directed to these limitations of substitute independent claim 7. *See* Paper 33, 9–11.

Petitioner also asserts that Patent Owner “does not dispute that a POSITA would have been motivated to combine Parulski and Johnson.” Paper 26, 17–18 (citing Paper 22, 22–23; Paper 19, 14–17).

With respect to limitation [7e(i)[4]], Petitioner contends that “Parulski in combination with Johnson renders obvious a ‘composite image generating unit configured to ... generate a composite image by superimposing the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image.’” Paper 26, 17–19; Ex. 1024 ¶¶ 152–164.

Petitioner asserts that “Patent Owner disputes only whether Johnson discloses ‘mixing of pixel values.’” Paper 26, 18 (citing Paper 22, 23).

According to Petitioner, “Patent Owner’s argument relies on the single instance of the phrase ‘effectively replace’ in Johnson.” *Id.* Paper 26, 18 (citing Paper 22, 23). Petitioner argues that “this interpretation fails at least because it does not account for the word ‘effectively’ in the context of Johnson’s disclosure.” *Id.* “When read in context,” Petitioner argues, “‘effectively replace’ does not mean replacement without any mixing.” *Id.* (citing Ex. 1024 ¶ 156). “For example,” Petitioner points out, “Johnson discloses that ‘[s]ince both images are preferred sources for one or more regions, the final image is generated by blending.’” *Id.* (citing Ex. 1018, 3:39–40). Petitioner adds that “Johnson goes on to explain that ‘the first image (the two eyes of subject C32) are blended into the base image to create the blended final image.’” *Id.* (citing Ex. 1018, 3:40–45). Petitioner notes that “Johnson also describes the composite image as having ‘blended elements [that] come from two images,’ which a POSITA would have understood refers to alpha blending.” *Id.* (citing Ex. 1018, 3:62–65; Ex. 1024 ¶ 156). Petitioner asserts that “‘effectively replace’ refers to the fact that the original image and final image look similar, except that the eyes are open; it does not mean the pixels are not mixed.” *Id.* (citing Ex. 1025 ¶ 156). “Thus,” Petitioner concludes, “Johnson discloses Patent Owner’s interpretation of ‘mixing pixel values.’” *Id.* at 19 (citing Ex. 1024 ¶ 156).

Patent Owner disagrees. According to Patent Owner, “Johnson repeatedly refers to its process as blending *images*, but is silent as to mixing *pixel values*. In other words, when a portion of one image completely replaces a corresponding portion of another image, it can be said that the two *images* have been blended.” Paper 33, 9. According to Patent Owner, “[t]hat replacement, however, does not teach that the replacement is done by mixing *pixel* values. Indeed, Johnson never uses the words ‘pixel,’ ‘mix,’

‘mixed,’ or ‘mixing’ or ‘alpha blending.’” *Id.* (citing Ex. 1018).

Patent Owner asserts that

Johnson teaches “the first image 46 is used as a base image 74, and the preferred regions from the second image are blended into the first image 76. This creates a single blended third image 82.” EX1018 at 3:16-19; *see also id.* at 3:21-25. In other words, Johnson uses “blending” as a synonym for combining images, but does not explain how to do so, let alone doing so by mixing pixel values. Johnson teaches that the “blending” operation “effectively replaces” a portion of the first image with a portion of the second image. *Id.* at 3:39-40. Johnson’s sole embodiment teaches that “[t]he region of each eye from Subject C 32 is blended 84 into the content of the second image 36, which effectively replaces the closed eyes of Subject C 42, creating a single final image 86 **where all subjects have open eyes.**” *Id.* at 3:47-50. If the pixel values of the two images were mixed, then the image would show a mixed image in which the eyes are **both** open and closed. In other words, both eyes would not be open. Thus, Johnson uses “blending” as a synonym for combining images (or portions of images), and not to describe mixing of pixel values. Johnson performs the same complete replacement as Parulski.

Paper 33, 9–10.

Patent Owner also asserts that

Petitioner does not attempt to assert that a POSITA would have been motivated to combine Parulski and Johnson to achieve the invention claimed in the RMTA, and therefore fails to meet its burden under 37 C.F.R. 42.121(d)(2). *See Opp.* 17-18. Even so, Dr. Stevenson’s uncited testimony regarding motivation to combine is unavailing. Dr. Stevenson asserts, without explanation, that a POSITA would have understood Johnson’s discussion of blending (*e.g.*, combining) two images to constitute alpha blending pixels, despite no disclosure in Johnson regarding pixels or alpha blending. This testimony is unsupported, based on impermissible hindsight, and entitled to little or no weight.

Paper 33, 10–11 (citing *TQ Delta v. CISCO Sys., Inc.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019)).

We disagree with Patent Owner. With respect to Petitioner’s rationale to combine Parulski and Johnson and expectation of success, Petitioner provided a substantial discussion of this topic in its initial opposition to Patent Owner’s Non-Contingent Motion to Amend. *See* Paper 19, 14–17. Petitioner’s discussion of its rationale to combine the teachings of Parulski and Johnson and expected success is supported by the declaration testimony of Dr. Stevenson. *See* Ex. 1022 ¶¶ 156–163. After Patent Owner revised its Motion to Amend to further limit proposed substitute independent claim 7, Dr. Stevenson supplemented his testimony on rationale to combine and expectation of success. *See* Ex. 1024 ¶¶ 157–164.

Dr. Stevenson testifies, and we agree, that a person of ordinary skill in the art reading Johnson would understand that Johnson’s use of the term “effectively replace” does not mean “replacement without any mixing.” Ex. 1024 ¶ 156. Dr. Stevenson explains that, for example, Figure 4 of Johnson “illustrates ‘blend[ing]’ (superimposing) an eye region (partial image) of ‘image 1’ (sub-image) with the corresponding eye region in ‘image 2’ (main image) to generate a ‘final image’ (composite image) having ‘elements of both images’ (characteristics of both images).” *Id.* (citing Ex. 1018, 1:59–61, 3:46–50, Fig. 4). Dr. Stevenson further testifies, and we agree, that a person of ordinary skill in the art “would have understood Johnson’s blending to be alpha blending,” because “[b]lending helps eliminate or minimize the boundaries of the replacement open-eye portion that was superimposed onto the original image.” Ex. 1024 ¶ 156 (citing Ex. 1009 ¶¶ 3, 7; Ex. 1007, 7–8; Ex. 1025, 1–3, Ex. 1026).

For proposed substitute dependent claims 8 and 10–12, Petitioner

contends that Parulski (and the combination of Parulski and Johnson) discloses or renders obvious substitute claims 8 and 10–12, as explained in Ground 1 and the Petition. Paper 26, 19 (citing *id.* at 16; Ex. 1024 ¶ 165). Patent Owner does not contest Petitioner’s evidence or arguments with respect to these proposed substitute dependent claims. Paper 33, 9–11.

Based upon consideration of the entire record, we are persuaded by Petitioner’s evidence and arguments, notwithstanding any evidence or arguments provided by Patent Owner, and determine that Petitioner has demonstrated by a preponderance of the evidence that the combined teachings of Parulski and Johnson meet the limitations of proposed substitute claims 7, 8, and 10–12, and that a person of ordinary skill in the art at the time of the invention would have had sufficient reason to combine their teachings in the manner proposed and would have had a reasonable expectation of success in so doing.

I. Obviousness Based on Parulski, Safonov, and Johnson (Ground 3)

For Ground 3, Petitioner contends proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined teachings of Parulski, Safonov, and Johnson. Paper 26, 19–22. Petitioner provides the testimonial evidence of Dr. Stevenson in support of its contentions. Ex. 1024 ¶¶ 166–172.

With respect to proposed substitute independent claim 7, Petitioner contends that “[i]t is undisputed that Parulski (thus, the combination of Parulski, Johnson, and Safonov) discloses or renders obvious [7preamble]-[7d], [7e(i)[1-3]], [7e(ii)], and [7f]-[7g], as explained in Ground 1 and the Petition.” Paper 26, 19 (citing *id.* at 3–4; Ex. 1024 ¶ 166).

With respect to limitation [7e(i)[4]], Petitioner contends that “[a]s explained in Ground 2, Parulski and Johnson render obvious [7e(i)[4]].” Paper 26, 19. Petitioner asserts that

Patent Owner’s disputes regarding Johnson do not address the situation where Safonov [is] used to alpha-blend as Johnson’s described “blending.” See RevMTA 22-23. Nor has Patent Owner disputed that there is a motivation to combine Parulski, Johnson, and Safonov as in Petitioner’s Opposition to MTA to use “alpha blending” as the “blending” to improve the final composite image quality. Opp. MTA 18-19. For this reason, the RevMTA has failed to show that substitute claim 7 is patentable over the combination of Parulski, Johnson, and Safonov.

Paper 26, 19–20.

One problem with this particular assertion, however, is that it recites an incorrect burden of proof. Contrary to Petitioner’s assertion, it is not Patent Owner’s burden “to show that substitute claim 7 is patentable over the combination of Parulski, Johnson, and Safonov” as Petitioner articulates. *Id.* Rather, it is *Petitioner’s* burden to show that Patent Owner’s proposed substitute claim 7 is *not* patentable. “A patent owner does not bear the burden of proof on the patentability of its proposed amended claims. Rather, the petitioner bears the burden of proving that the proposed amended claims are unpatentable by a preponderance of the evidence.” *Bosch*, 878 F.3d at 1040. Despite Petitioner’s misstatement, we assess the evidence of record and the parties’ arguments using the proper standard as articulated in *Bosch*.

Petitioner points out that “[a]s explained in Ground 1, Patent Owner does not dispute that Safonov discloses performing combining two images using alpha blending to ‘superimpos[e] the partial image on the main image by mixing pixel values of the partial image with pixel values of the main image’ as in substitute [7e(i)[4]].” Paper 26, 20 (citing *id.* at 4–16).

The entirety of Patent Owner's Reply to Petitioner's evidence and arguments on Ground 3 is as follows:

The combination of Parulski, Johnson, and Safonov fails to disclose the proposed amended claims because there is no motivation to combine the references as asserted by Petitioner. Petitioner asserts that a POSITA "because alpha blending was known to allow, and would have allowed, the partial image (in the Parulski-Johnson combination) to be more seamlessly integrated into the main image and minimized or mitigated the visual transition between the superimposed portion and the main image." Opp. at 21. Petitioner's assertion is wrong for the same reasons stated above. Safonov cannot and would not have been extended to combine multiple images (as in Parulski or Johnson) due to Safonov's specific filtering requirements, and neither Parulski nor Johnson teach mixing pixel values.

Paper 33, 11.

Patent Owner's stated position is problematic for a number of reasons. First, with respect to the motivation to combine, Patent Owner's position is simply a blank denial with no stated reasoning as to why Petitioner's position is wrong ("because there is no motivation to combine the references"). *Id.* Patent Owner then appears to try and incorporate a prior position ("Petitioner's assertion is wrong for the same reasons stated above"), but fails to provide any citation to the record for us to follow. Finally, Patent Owner's argument that "Safonov cannot and would not have been extended to combine multiple images," is unsupported attorney argument and merits little weight when considering technical issues such as filtering requirements and mixing pixel values. *See Invitrogen*, 429 F.3d at 1068 ("Unsubstantiated attorney argument regarding the meaning of technical evidence is no substitute for competent, substantiated expert testimony."); *Icon Health & Fitness*, 849 F.3d at 1046 ("Attorney argument is not evidence or explanation in support of a conclusion."); *In re Payne*, 606

F.2d at 315 (“Arguments of counsel unsupported by competent factual evidence of record are entitled to little weight.”).

With respect to proposed substitute dependent claims 8 and 10–12, Petitioner states that “Parulski (and the combination of Parulski, Safonov, and Johnson) discloses or renders obvious substitute claims 8 and 10–12, as explained in Ground 1 and the Petition.” Paper 26, 22 (citing *id.* at 12–16; Ex. 1024 ¶ 172). Patent Owner, however, provides no reply to Petitioner’s position concerning the proposed substitute dependent claims 8 and 10–12, other than what has already been discussed with respect to limitation [7e(i)[4]] in Ground 3, *supra*. See Paper 33, 11.

1. Rationale to Combine

Petitioner asserts that a person of ordinary skill in the art would have been motivated to use Safonov’s well-known alpha-blending technique as the disclosed “blend[ing]” when combining image portions in the Parulski-Johnson combination because alpha blending was known to allow, and would have allowed, the partial image (in the Parulski-Johnson combination) to be more seamlessly integrated into the main image and minimized or mitigated the visual transition between the superimposed portion and the main image. Paper 26, 20–21 (citing Ex. 1009 ¶ 3; Ex. 1003 ¶¶ 171–172; Ex. 1024 ¶ 169; see Paper 26, Grounds 1, 2).

Petitioner also asserts a person of ordinary skill in the art “would have been motivated to utilize alpha blending because it was a well-known technique used to edit, process, and combine images, and thus represents a known technique in the art that would have yielded predictable results.” Paper 26, 21 (citing Ex. 1009 ¶ 3; Ex. 1003 ¶ 173; Ex. 1024 ¶ 169). Petitioner points out that “Patent Owner does not dispute either of these showings or identified any error in the combination of Parulski, Johnson,

and Safonov from Petitioner’s Opposition.” *Id.* (citing Paper 22, 22–23; Paper 19, 18–19).

As for expectation of success, Petitioner points out that “Patent Owner does not dispute that a POSITA would have had a reasonable expectation of success in using Safonov’s alpha blending as the ‘blend[ing]’ in the Parulski-Johnson combination because it would have merely involved incorporating a known image-blending technique used when combining multiple digital camera images and was well within the POSITA’s skill to incorporate.” Paper 26, 21 (citing Ex. 1024 ¶ 170; Paper 19, 18–19). “Thus,” Petitioner concludes, “the Parulski-Johnson-Safonov combination still renders obvious the claimed composite image generating unit of substitute claim 7 and, accordingly, substitute claim 7.” *Id.* at 22 (citing Ex. 1024 ¶ 171).

Based upon consideration of the entire record, and despite Petitioner’s misstatement of the burden of proof, we are persuaded by Petitioner’s evidence and arguments, notwithstanding any evidence or arguments provided by Patent Owner, and determine that Petitioner has demonstrated by a preponderance of the evidence that the combined teachings of Parulski, Safonov, and Johnson meet the limitations of proposed substitute claims 7, 8, and 10–12, and that a person of ordinary skill in the art at the time of the invention would have had sufficient reason to combine their teachings in the manner proposed and would have had a reasonable expectation of success in so doing.

J. Obviousness Based on Parulski and Hoshino (Ground 4)

Petitioner contends that proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined

teachings of Parulski and Hoshino. Paper 26, 22–25. Patent Owner, however, disputes this contention, asserting that Hoshino is not prior art.⁴ See Paper 22, 23–25; Paper 33, 11–12.

Hoshino is a published United States patent application, which was filed on March 19, 2010. Ex. 1021, code (22). Patent Owner asserts that “Hoshino is only prior art under [35 U.S.C.] § 102(e) as of March 19, 2010.” Paper 22, 24. The ’638 patent was filed on December 22, 2010 (after Hoshino was filed), but claims priority to the filing date of Japanese Patent Application No. 2009-295202 on December 25, 2009, which pre-dates Hoshino’s filing date by almost 3 months. Ex. 1001, codes (30), (45).

In an *inter-partes* review proceeding, the Petitioner must demonstrate by a preponderance of the evidence that the challenged claims are unpatentable—including showing that the references relied upon are prior art patents or printed publications. See 35 U.S.C. §§ 311(b), 316(e); *Nobel Biocare Servs. AG v. Intradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”).

The burden of persuasion always remains with the Petitioner and that burden never shifts to the patentee. *In re Magnum Oil Tools Int’l, Ltd*, 829 F.3d 1364, 1375 (Fed. Cir. 2016); *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039 (Dec. 20, 2019) (precedential) (holding Petitioner bears burden of proving unpatentability by a preponderance).

⁴ Patent Owner does not dispute that the proposed combination of Parulski and Hoshino asserted by Petitioner meets all the limitations of proposed substitute claims 7, 8, and 10–12. See Paper 33, 11–12.

The '638 patent states that “[t]his application claims priority to Japanese Patent Application No. 2009-295202 filed on Dec. 25, 2009.” Ex. 1001, 1:9–10. Patent Owner wishes to rely on the asserted filing date of December 25, 2009, of this Japanese patent application for purposes of establishing priority. Paper 22, 4–10, 23–25. 37 C.F.R. § 42.63(b) requires that “[w]hen a party relies on a document or is required to produce a document in a language other than English, a translation of the document into English and an affidavit attesting to the accuracy of the translation must be filed with the document.”

Patent Owner provides the following Updated Exhibit List as Paper 41 in the Record.

EXHIBIT LIST

Exhibit Number	Description
EX2001	Certified Translation of JP App. No. 2009-95202
EX2002	JP App. No. 2009-295202
EX2003	Certificate of translation of JP App. No. 2009-95202
EX2004	Email correspondence regarding Morningside deposition

Patent Owner indicates that Exhibit 2001 is a certified translation of JP App. No. 2009-95202, and that Exhibit 2003 is a “Certificate of translation of JP App. No. 2009-95202.” Patent Owner also indicates that it “provided a declaration by a project manager at Morningside IP that attests ‘[t]o the best of my knowledge, the aforementioned documents are a true, full and accurate translation of the specified documents,’” and that “[t]he Board has previously found that such declarations are sufficient, including

with respect to a project manager from the very same company, Morningside IP.” Paper 22, 24 (citing *Globus Medical, Inc. v. Moskowitz Family LLC*, IPR2020-01306, Paper 7 at 18–20 (PTAB Jan. 8, 2021) (“*Globus Medical*”).

Petitioner, however, asserts that Patent Owner “has not established that substitute claims 7–12 are entitled to a priority date of December 25, 2009,” because Patent Owner “has not provided a proper certified translation from which priority can be established because the declarant does not speak Japanese and therefore cannot confirm the accuracy.” Paper 26, 23 (citing Papers 10, 12; Ex. 1023, 15:20–22, 16:1–17:1). Petitioner asserts that “Patent Owner also failed to produce the declarant for a deposition, which violates the Board’s rules on routine discovery.” *Id.* “Without this priority claim,” Petitioner argues, “the earliest priority date is the filing date of the ’638 patent: December 22, 2010, making Hoshino prior art.” *Id.*

Petitioner also has filed a Motion to Exclude Exhibits 2001 and 2003. Paper 34. The Motion to Exclude has been fully briefed. *See* Papers 34, 36, and 38. Because Patent Owner does not dispute Petitioner’s proposed combination of Parulski and Hoshino on the merits (*see* Paper 33, 11–12), the resolution of Petitioner’s Motion to Exclude may determine the outcome of Petitioner’s challenge under Ground 4. Accordingly, we now address Petitioner’s Motion to Exclude Exhibits 2001 and 2003.

1. Petitioner’s Motion to Exclude

Petitioner’s Motion to Exclude challenges Patent Owner’s compliance with 37 C.F.R. § 42.63(b), which requires an English language translation and an affidavit attesting to the accuracy of the translation of a foreign language document relied on by a party; Federal Rule of Evidence (“FRE”)

602⁵ concerning the need for personal knowledge; FRE 901 concerning authenticating or identifying evidence; and the Board’s Consolidate Trial Practice Guide. Paper 34, 1. Petitioner’s Motion seeks to exclude Exhibit 2001, which Patent Owner identifies as a “Certified Translation of JP App. No. 2009-95202” and Exhibit 2003, which Patent Owner identifies as a “Certificate of translation of JP App. No. 2009-95202”. Paper 41.

Exhibit 2003 is a one-page document dated February 13, 2025, entitled “Translation Certification” under the letterhead of “Morningside A Questel Company.” Ex. 2003. It states: “This is to certify that the attached translation [presumably Exhibit 2001 in the record here] is an accurate representation of the documents received by this office. The translation was completed from Japanese to English (USA).” *Id.* It is signed by Oscar Ojeda, a “Project Manager” at Morningside, who attests that “[t]o the best of my knowledge, the aforementioned documents are a true, full and accurate translation of the specified documents.” Petitioner deposed Samuel Wu, who is Mr. Ojeda’s supervisor at Morningside, concerning Exhibits 2001–2003. *See* Ex. 1023 (Remote Deposition of Samuel Wu dated June 10, 2025).

Petitioner argues that “[t]he Board should exclude Patent Owner’s Exhibits 2001 and 2003 . . . because the declarant of Exhibit 2003 lacks personal knowledge as to the accuracy of the alleged translation presented as Exhibit 2001.” Paper 34, 1. According to Petitioner, “[t]he declarant is not the translator and does not speak Japanese (the language of the source

⁵ FRE 602 states, “A witness may testify to a matter only if evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter. Evidence to prove personal knowledge may consist of the witness’s own testimony.”

document).” *Id.* Petitioner points out that “the declarant’s supervisor acknowledged that the declarant lacks the ability to identify errors or confirm the accuracy of the translation.” *Id.* Petitioner argues that “Patent Owner also failed to produce this declarant for deposition, which deprived Petitioner of the opportunity to depose him on the accuracy of the translation.” *Id.* “Moreover,” Petitioner argues, “the declarant’s supervisor . . . also does not speak Japanese (the source language), further precluding Petitioner from being able to obtain cross-examination testimony regarding the substance.” *Id.* Petitioner argues that “Patent Owner failed to comply with 37 C.F.R. § 42.63(b) because the certification in Exhibit 2003 is not reliable and the declarant was not made available for cross-examination.” *Id.* Petitioner contends that “Exhibit 2003 should be excluded,” and “[w]ithout the required certification, Exhibit 2001 should also be excluded.” *Id.*

Patent Owner responds by arguing that “the Board has previously held that a certification under 37 C.F.R. § 42.63(b) does not need to be signed by someone with personal knowledge,” citing *Globus Medical*). Paper 36. 1. Patent Owner contends that “37 C.F.R. § 42.63(b) does not require that EX2003 be signed by the translator or one with personal knowledge of the translation’s accuracy.” *Id.* at 3. Patent Owner also argues that “FRE 901’s personal knowledge requirement does not apply to Certificates of Translation because the Board’s rules specify otherwise.” *Id.* at 5. Patent Owner also contends that it complied with its discovery obligations by “providing a representative of the translation company that Patent Owner hired . . . for deposition.” *Id.*

Rule 42.63(b) *requires* that “an affidavit attesting to the accuracy of the [English] translation” of a foreign language document relied on by a

party *must* be filed with the translation. 37 C.F.R. § 42.63(b) (2015) (emphasis added). The Board’s Trial Practice Guide provides that “a party presenting a witness’s testimony by affidavit should arrange to make the witness available for cross-examination.” Consolidated Trial Practice Guide (“CTPG”), 23.⁶ Rule 42.62(a) also makes clear that in general, “the Federal Rules of Evidence *shall* apply” to Board proceedings unless otherwise excepted. 37 C.F.R. § 42.62(a) (2015) (emphasis added).

Here, Patent Owner contends that “the ’638 patent has a priority date of December 25, 2009 by virtue of its priority claim to Japanese Pat. App. No. 2009-295202.” Paper 22, 24. Patent Owner filed a Japanese language document as Exhibit 2002, an English language document as Exhibit 2001, and a translation certification as Exhibit 2003.

Although Mr. Ojeda signed Exhibit 2003 attesting to the accuracy of the Japanese to English language translation based upon his knowledge, Petitioner argues that “Patent Owner disregarded its routine discovery obligations and did not produce Mr. Ojeda for a deposition.” Paper 34, 6. Petitioner asserts that “Mr. Ojeda is not the person who translated the priority application into English and is not capable of verifying the accuracy or correctness of the translation because he does not speak Japanese.” *Id.* at 5 (citing Ex. 1023, 16:10–17:1). Petitioner contends that “Patent Owner . . . did not produce the actual translator for a deposition.” *Id.* at 6. “Instead,” Petitioner argues, “Patent Owner provided [Mr.] Samuel Wu, the Managing Director of Morningside Translations, who did not prepare the translation,

⁶ [https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=](https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=TrialPracticeGuideConsolidated)
TrialPracticeGuideConsolidated.

does not speak Japanese, and cannot attest to the accuracy of the translation.” *Id.*; *see also* Ex. 1023.

At his deposition, Mr. Wu testified that he did not recognize Exhibit 2002, the Japanese document that Patent Owner is relying on for priority in this proceeding, and testified that he “had not seen this exhibit.” Ex. 1023, 12:7–9. Mr. Wu also testified that he did not translate and “did not prepare” Exhibit 2001, which is the purported English language translation of the Japanese document, Exhibit 2002. *Id.* at 13:8–10, 14:15–18. Mr. Wu testified that he did not know who translated the Japanese document and “would actually have to look at the translation certification to know which of the linguists worked on which document.” *Id.* at 13:18–14:4. Mr. Wu confirmed that Mr. Ojeda, who signed the translation certification, does not speak Japanese and did not translate the Japanese document, Exhibit 2002. *Id.* at 15:20–22, 16:1–5. Mr. Wu also testified that he did not believe that Mr. Ojeda would be able to determine whether there were any inaccuracies in the translation because Mr. Ojeda does not speak Japanese. *Id.* at 16:6–17:1.

Patent Owner cites to *Globus Medical* for the proposition that even though the Board’s rules “require a translation,” they “do not require the certification to be signed by someone with personal knowledge of the translation.” Paper 36, 1. *Globus Medical*, however, is an institution decision, not a final written decision, and therefore was based on a preliminary, typically incomplete record.⁷ Indeed, the panel in *Globus*

⁷ *Globus Medical* has not been designated as precedential or informative by the Patent Trial & Appeal Board. *See* <https://www.uspto.gov/patents/ptab/precedential-informative-decisions>.

Medical acknowledged the preliminary nature of an institution decision and the parties' ability to supplement or correct a preliminary record, noting that "[e]ven if the certification is deficient, this failure is not fatal, as the Board routinely allows a Petitioner to correct such a declaration. *Globus Medical*, Paper 7 at 20.

This proceeding, however, has now moved far beyond the institution phase. If the parties had wanted, or needed, to supplement or correct the record in this proceeding, they had ample opportunity to do so. The parties have now completed discovery, including the cross-examination of any witnesses or affiants. The parties have also presented their final oral arguments to the Board and the case has been submitted for a final written decision based on a complete record.

In particular, Patent Owner has had ample opportunity to comply with the Board's rules or to correct any deficiencies in the record. For example, Patent Owner initially filed Exhibit 2001, the ostensible English language translation, on March 24, 2025, without an accompanying translation certification or the original Japanese language document. Petitioner timely filed an objection to Patent Owner's Exhibit 2001, putting Patent Owner on notice of its concerns and asserting that Exhibit 2001 "does not comply with 37 C.F.R. § 42.63(b)," as it "appears to be a translation of Japanese Patent Application Number 2009-295202, but does not include the required certificate attesting to the accuracy of the translation or the original Japanese language version of the application as required by 37 C.F.R. § 42.63(b)." Paper 10. Thereafter, on April 2, 2025, Patent Owner apparently served Petitioner with an Exhibit 2002 and Exhibit 2003, to which Petitioner timely filed an objection on April 9, 2025, asserting that Exhibit 2002

appears different from the version submitted to the USPTO when claiming priority in the file history of the '638 patent (*see* Exhibit 1002 at 69-96). Petitioner objects to Exhibit 2003 under 37 C.F.R. § 42.63(b) and/or FRE 901 for lack of personal knowledge because the declarant is not the translator and not able to testify to the accuracy of the translation.

Paper 12. It wasn't until May 5, 2025, that Patent Owner filed Exhibit 2002, a Japanese language document, and Exhibit 2003, Mr. Ojeda's translation certification, with the Board.

Patent Owner also asserts that it complied with its discovery obligations "by providing a representative of the translation company that Patent Owner hired, Morningside Translations ('Morningside'), for deposition." Paper 36, 1. We disagree. The Board's Consolidated Trial Practice Guide makes clear that "a party presenting a witness's testimony by affidavit should arrange to make the witness available for cross-examination." CTPG, 23. Patent Owner, however, did not provide the affiant that signed the translation certification, Mr. Ojeda, for deposition. Instead, Patent Owner provided a different individual for deposition, Mr. Wu.

Mr. Wu, however, did not sign an affidavit attesting to the accuracy of the Japanese to English translation of Exhibits 2002 and 2001. Indeed, Mr. Wu testified that he did not recognize Exhibit 2002, the Japanese language document that Patent Owner is relying on for priority in this proceeding. Ex. 1023, 12:7–9. Mr. Wu also testified that he did not translate and "did not prepare" Exhibit 2001, the purported English language translation of the Japanese document. *Id.* at 13:8–10, 14:15–18. Mr. Wu testified that he did not know who translated the Japanese document and

“would actually have to look at the translation certification to know which of the linguists worked on which document.” *Id.* at 13:18–14:4.

Moreover, Mr. Wu confirmed that Mr. Ojeda, who signed the translation certification, does not speak Japanese and did not translate the Japanese document, Exhibit 2002. *Id.* at 15:20–22, 16:1–5. Mr. Wu also testified that he did not believe that Mr. Ojeda would be able to determine whether there were any inaccuracies in the translation because Mr. Ojeda does not speak Japanese. *Id.* at 16:6–17:1. This testimony calls into question the veracity of the affidavit signed by Mr. Ojeda and submitted by Patent Owner to comply with 37 C.F.R. § 42.63(b), which requires “a translation of the document into English and an affidavit attesting to the accuracy of the translation.” It is difficult to reconcile the affidavit of Mr. Ojeda attesting that “the aforementioned documents are a true, full and accurate translation of the specified documents,” with the testimony of Mr. Ojeda’s supervisor, Mr. Wu, confirming that Mr. Ojeda does not speak Japanese, did not translate the Japanese document into English, and that Mr. Ojeda would not be able to determine whether there were any inaccuracies in the translation because Mr. Ojeda does not speak Japanese. Ex. 1023, 15:20–22, 16:1–5, 16:6–17:1.

Patent Owner’s failure to provide for deposition the person who signed the affidavit filed with the Board attesting to the accuracy of the Japanese to English translation of the foreign language document Patent Owner is relying upon to establish priority over the prior art is simply unacceptable. Under these circumstances, Petitioner is unable to question the affiant and cannot directly test the affiant’s veracity or challenge the affiant’s basis for making the statements in the affidavit. One purpose of our evidentiary rules and procedures is to provide the parties with a fair

opportunity to assess and challenge any adverse evidence presented by a party in a proceeding. Patent Owner's failure to provide Mr. Ojeda for deposition so that Petitioner can directly question the basis for Mr. Ojeda's statements in his affidavit, contravenes the Board's Trial Practice Guide and frustrates the purpose of the Board's rules requiring a party who relies on a foreign language document to provide an English language translation of the document and an affidavit *attesting to the accuracy of the translation*. 37 C.F.R. § 42.63(b) (2015) (emphasis added); CTPG, 23 ("a party presenting a witness's testimony by affidavit should arrange to make the witness available for cross-examination").

Upon consideration of the complete record, we find that Patent Owner's failure to make the affiant, Mr. Ojeda, available for deposition contravenes 37 C.F.R. § 42.63(b) (2015) and the Board's Trial Practice Guide. Accordingly, we GRANT Petitioner's motion to exclude Exhibits 2001 and 2003.

2. Proposed Combination of Parulski and Hoshino

For Ground 4, Petitioner contends that proposed substitute claims 7, 8, and 10–12 are unpatentable as obvious under 35 U.S.C. § 103(a) over the combined teachings of Parulski and Hoshino. Paper 26, 22–25. Patent Owner does not challenge Petitioner's evidence or arguments on the merits, but instead, only challenges whether Hoshino qualifies as prior art to the '638 patent. Paper 33, 11–12.

We granted Petitioner's Motion to Exclude Exhibits 2001 and 2003 because Patent Owner failed to comply with 37 C.F.R. § 42.63(b) (2015) and the Board's Trial Practice Guide. *See* Sec. II.J.1, *supra*. Patent Owner, therefore, is unable to establish a foreign application priority claim, making the filing date of the '638 patent in the United States, December 22, 2010, its

earliest priority date. Ex. 1001, code (22). Hoshino, which was filed in the United States on March 19, 2010, and published on September 23, 2010, therefore qualifies as prior art to the '638 patent under 35 U.S.C. § 102(e). Ex. 1021, code (22).

With respect to proposed substitute independent claim 7, Petitioner provides evidence and argument that Parulski in combination with Hoshino discloses or renders obvious [7preamble]–[7d], [7e(i)[1–3]], [7e(ii)], and [7f]–[7g]. Paper 26, 23 (citing *id.* at 3–16; Ex. 1024 ¶ 173).

With respect to limitation [7e(i)[4]], Petitioner also provides evidence and argument that Hoshino discloses a “camera device” including an “image processing subunit” (composite image generating unit) that “extracts [a] subject image D [(cut out a partial image)] from [a] subject-background picture E1 based on the difference information” and “combines the subject image D” with a “background image P1” (main image) using alpha blending. Paper 26, 24 (citing Ex. 1021 ¶¶ 21, 35, 37, 39–40, 118, Figs. 2, 4).

“For example,” Petitioner points out, “Hoshino generates ‘combined image[s] P3’ and ‘P4’ by ‘superimpos[ing]’ the extracted subject image D (cutout partial image) on a ‘background image P1’ (main image).” Paper 26, 24 (citing Ex. 1021 ¶¶ 11, 16–17, 100, 118, Figs. 7A–8B); *see also* Ex. 1021, Fig. 4 (describing combined image-producing process). Petitioner explains that “[s]ubject image D is ‘alpha blend[ed]’ (e.g., by mixing pixels) and superimposed on the background image.” Paper 26, 24 (citing Ex. 1021 ¶¶ 48–52, 86–104, 115–118, Figs. 4, 7A–8B); *see also* Ex. 1021 ¶ 38; Ex. 1024 ¶¶ 175–176.

Patent Owner does not dispute that Hoshino’s alpha blending when combining two images is “*mixing pixel values of the partial image with pixel*

values of the main image” as claimed. *See* Paper 22, 10–25; Paper 33, 11–12. Patent Owner also does not dispute that a person of ordinary skill in the art would have been motivated to combine Parulski and Hoshino in the manner proposed by Petitioner and would have had a reasonable expectation of success in doing so. *Id.*

With respect to proposed substitute dependent claims 8 and 10–12, Petitioner contends that “Parulski (and the combination of Parulski and Hoshino) discloses or renders obvious substitute claims 8 and 10–12, as explained in Ground 1 and the Petition.” Paper 26, 25 (citing *id.* at 12–16; Ex. 1024 ¶ 181).

Based upon consideration of the entire record, we are persuaded by Petitioner’s evidence and arguments, and determine that Petitioner has demonstrated by a preponderance of the evidence that the combined teachings of Parulski and Hoshino meet the limitations of proposed substitute claims 7, 8, and 10–12, and that a person of ordinary skill in the art at the time of the invention would have had sufficient reason to combine their teachings in the manner proposed and would have had a reasonable expectation of success in so doing.

III. CONCLUSION

For the foregoing reasons, we cancel claims 1, 2, 4–6 of the ’638 patent, and we deny Patent Owner’s motion to amend the ’638 patent to add proposed substitute claims 7–12. In summary:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
7, 8, 10–12	103(a)	Parulski, Safonov		
7, 8, 10–12	103(a)	Parulski, Johnson		
7, 8, 10–12	103(a)	Parulski, Safonov, Johnson		
7, 8, 10–12	103(a)	Parulski, Hoshino		

Motion to Amend Outcome	Claims
Original Claims Cancelled by Amendment	1, 2, 4–6
Substitute Claims Proposed in the Amendment	7–12
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	7, 8, 10–12
Substitute Claims: Not Reached	9

IV. ORDER

Accordingly, it is

ORDERED that Patent Owner’s Revised Non-Contingent Motion to Amend (Paper 22) is *granted-in-part* as to its non-contingent request to cancel claims 1, 2, 4–6;

FURTHER ORDERED that Patent Owner’s Revised Non-Contingent Motion to Amend (Paper 22) is *denied-in-part* as to cancelling original claim 3 and adding substitute claims 7–12; and

FURTHER ORDERED that Petitioner’s Motion to Exclude Exhibits 2001 and 2003 (Paper 34) is *granted*.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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