

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUMIO CORP.,
Petitioner,

v.

FACETEC, INC.,
Patent Owner.

IPR2025-00108
Patent 11,693,938 B2

Before GARTH D. BAER, NABEEL U. KHAN, and BACH V. HOANG,
Administrative Patent Judges.

KHAN, *Administrative Patent Judge.*

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

I. INTRODUCTION

A. *Background and Summary*

Jumio Corporation. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–24 (“the challenged claims”) of U.S. Patent No. 11,693,938 B2 (“the ’938 patent,” Ex. 1001). FaceTec, Inc. (“Patent Owner”) timely filed a Preliminary Response (Paper 6, “Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 10, “Prelim. Reply”) and Patent Owner filed Preliminary Sur-Reply (Paper 14, “Prelim. Sur-Reply”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Per Board practice, if the Board institutes trial, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” See 37 C.F.R. § 42.108(a). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on at least one of the challenged claims of the ’471 patent. We exercise our discretion to institute *inter partes* review and, as required, we do so as to all the challenged claims of the ’471 patent on all the grounds of unpatentability set forth in the Petition.

B. *Related Proceedings*

The parties identify the following pending matter as involving the ’471 patent: *FaceTec, Inc. v. Jumio Corporation*, Case No. 5:24-cv-3623 (N.D. Cal.) (“California litigation”). Pet. 80; Paper 4, 2. Patent Owner additionally identifies *FaceTec, Inc. v. iProov Ltd.*, Case No. 2:21-cv-02252

(D. Nev) as related district court litigation (“Nevada litigation”). Patent Owner identifies the following AIA proceedings as related to this proceeding: IPR2025-00107, IPR2025-00108, IPR2025-00109. Paper 4, 2. Patent Owner also identifies numerous other related U.S. and international patents and applications. Paper 4, 2–4.

C. Real Parties-in-Interest

Petitioner identifies itself as a real party-in-interest. Pet. 80. Patent Owner identifies FaceTec as the real party-in-interest. Paper 4, 2.

Patent Owner argues we should deny institution under 35 U.S.C. § 312(a)(2) because the Petition does not name iProov Ltd. (“iProov”) as an RPI. Prelim. Resp. 5–18; Prelim. Sur-Reply 2–3.

We need not consider whether iProov must be named as an RPI because Patent Owner does not allege that the failure to name iProov would implicate time bar, estoppel, or anything else material to this case. Our precedential authority, *SharkNinja Operating LLC et al. v. iRobot Corp.*, controls this case, and explains that we need not determine whether a third party is an RPI to the Petitioner because “even if it were, it would not create a time bar or estoppel under 35 U.S.C. § 315.” IPR2020-00734, Paper 11, 18–19 (P.T.A.B. Oct. 6, 2020) (precedential).

Patent Owner acknowledges that, in this IPR, “the time-bar is not implicated.” Prelim. Resp. 5–6. Nevertheless, Patent Owner argues that we should reach the RPI question here because *other* IPRs challenging *different* patents implicate the time bar under 35 U.S.C. § 315(b). *Id.* at 5–6. Patent Owner’s request effectively asks us to extend the § 315(b) time bar to implicate patents not asserted in an applicable infringement complaint.

We decline to do so. The plain language of § 315(b) does not extend the time bar to any patent other than the patent subject to the instant petition:

An inter partes review may not be instituted if the petition requesting the proceeding is filed more than 1 year after the date on which the petitioner, real party in interest, or privy of the petitioner is served with a complaint alleging infringement of *the patent*

(emphasis added). Nor are we aware of any other authority which requires us to interpret § 315(b) to extend the time bar to patents other than the challenged one. Because Patent Owner admits this Petition challenging the '910 Patent is not time barred, the treatment in *SharkNinja* controls. Accordingly, on this record, we need not consider whether iProov must be named as an RPI and decline to deny institution under 35 U.S.C. § 312(a)(2).

D. The '938 Patent (Ex. 1001)

The '938 patent, titled "Facial Recognition Authentication System Including Path Parameters," issued July 4, 2023. Ex. 1001, codes (45), (54). The '938 patent describes itself as relating to:

[s]ystems and methods for enrolling and authenticating a user in an authentication system via a user's camera of camera equipped mobile device include capturing and storing enrollment biometric information from at least one first image of the user taken via the camera of the mobile device, capturing authentication biometric information from at least one second image of the user, capturing, during imaging of the at least one second image, path parameters via at least one movement detecting sensor indicating an authentication movement of the mobile device, comparing the authentication biometric information to the stored enrollment biometric information, and comparing the authentication movement of the mobile device to an expected movement of the mobile device to determine whether the authentication movement sufficiently corresponds to the expected movement.

Id. at code (57).

E. Illustrative Claim

Claims 1 and 10 are the sole independent claims of the '938 patent and claim 1 is reproduced below with limitation identifiers in brackets corresponding to claim analysis headings in the Petition. *See, e.g.*, Pet. 15–22.

1. [pre] A non-transient computer readable medium containing non-transitory machine executable code configured to determine if the three-dimensional shape is consistent with that of a human face, the non-transitory machine executable code configured to:

[1a] receive or derive first biometric data from at least one first image of a user taken with a computing device camera located at a first distance from the user;

[1b] receive or derive second biometric data from at least one second image of the user taken with the computing device camera located at a second distance from the user, the second distance being different than the first distance;

[1c] compare the first biometric data with second biometric data for expected differences that result from characteristics of a human face and the at least one first image and the at least one second image being captured at different distances from the user;

[1d] determine that the three-dimensional shape is not exhibited when the second biometric data does not have expected differences compared to the first biometric data, the expected differences comprising at least differences due to the change in the relative distance between the user's facial features and the camera when the at least one first image was captured at the first distance and the at least one second image was captured at the second distance, wherein the expected differences result from fish-eye type distortion in at least one of the at least one first image and the at least one second image and due to the three-dimensional nature of the human face and the change in distance between the camera and the user.

Ex. 1001, 38:7–45.

F. Evidence

The Petition relies on the following references:

Reference	Exhibit No.
US 8,437,513 B1; issued May 7, 2013 (“Derakhshani”).	1005
US 2011/0299741 A1; filed June 8, 2010; published Dec. 8, 2011 (“Zhang”).	1006
US 2002/0113884 A1; filed Feb. 15, 2002; published Aug. 22, 2002 (“Tanii”).	1007
US 2014/0028823 A1; filed May 22, 2013; published Jan. 30, 2014 (“Tahk”).	1008
US 2004/0239799 A1; filed May 25, 2004; published Dec. 2, 2004 (“Suzuki”).	1009

Petitioner also relies on the Declaration of Christopher Daft, D. Phil. (Ex. 1003) in support of its arguments. The parties rely on other exhibits as discussed below.

G. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–24 would have been unpatentable on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1A	1–10, 12–24	103	Derakhshani, Tanii
1B	11	103	Derakhshani, Tanii, Tahk
2A	1–3, 5–9, 12– 14, 16–20, 22– 24	103	Zhang, Tanii
2B	4, 10–11, 21	103	Zhang, Tanii, Tahk
2C	15	103	Zhang, Tanii, Suzuki

II. EXERCISE OF DISCRETION

A. 35 U.S.C. § 314(a)

Patent Owner argues the Board should exercise its discretion to deny institution under 35 U.S.C. § 314(a) in light of two co-pending district court cases. Prelim. Resp. 47–56. We addressed this same issue in our institution decision in IPR2025-00106. *See* IPR2025-00106, Paper 17 at 6–9. For the same reasons we explained there, we decline to exercise our discretion to deny institution based on the related district court cases.

B. 35 U.S.C. § 325(d)

Patent Owner argues that “[n]early every reference Petitioner relies on was already considered by the Office during prosecution or is cumulative of a considered reference.” Prelim. Resp. 18. Specifically, Patent Owner argues that (1) an application related to, and with the same disclosure as, Derakhshani was considered by the Office during prosecution; (2) that Zhang is cumulative of Derakhshani; (3) that Tanii is cumulative of Todoroki¹, a reference used by the Examiner in a rejection during prosecution; and (4) Suzuki is cumulative of Davis², which was also considered by the Examiner during prosecution. *Id.* at 18–36. Our analysis focuses on the Tanii reference because it is relied upon in all of Petitioner’s challenges and because our determination that Tanii is not cumulative of Todoroki resolves the 35 U.S.C. § 325(d) analysis. For the reasons given below, we decline exercising our discretion to deny institution.

¹ US Publication 2014/0169643 A1 (“Todoroki”).

² US Publication 2017/0161906 A1.

Section 325(d) of Title 35 of the United States Code addresses the relationship of proceedings before the Board with other proceedings in the Office, and provides, in part, that

[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31,^[3] the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.

35 U.S.C. § 325(d).

In evaluating arguments under Section 325(d), we use a two-part framework, determining, first, “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”). That first determination considers: (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; and (d) the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art. *Advanced Bionics* at 9–10 (citing *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, 17–18 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”).

If either condition of the first part of the framework is satisfied, we turn to the second part of the framework and determine “whether the

³ Chapter 31 (35 U.S.C. §§ 311–319) relates to *inter partes* review.

petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics* at 8.

Our § 325(d) analysis of Tanii begins, and ends, with the first part of the framework.

1. *Whether the Same or Substantially the Same Art
Previously Was Presented to the Office*

Petitioner relies on Tanii in combination with other references for all its challenges. Pet. 3. There is no dispute that Tanii was not previously presented to the Office. *See* Pet. 79; Prelim. Resp. 25; Prelim. Reply 4–5; Prelim. Sur-Reply 3–4. Instead, the dispute is whether the first part of the *Advanced Bionics* framework is satisfied because Tanii is cumulative of Todoroki. Prelim. Resp. 25–28; Prelim. Reply 4; Prelim. Sur-Reply 3–4; *see* Pet. 85.

We determine that Tanii is not substantially the same art as Todoroki because the teachings Tanii is relied upon for are materially different than the teachings Todoroki was relied upon for and Petitioner applies Tanii’s teachings differently.

Although both Todoroki and Tanii teach image distortion, the types of distortion the references are cited for are materially different.

Patent Owner states the Examiner cited paragraphs 18, 19, 64, and 89 of Todoroki in a rejection during prosecution of the ’938 patent and also during prosecution of a related application. Prelim. Resp. 25–26. These paragraphs of Todoroki teach “position distortion” correction using a motion vector calculated between two images of a face. Prelim Resp. 26–27 (citing

Ex. 2018 ¶¶ 18–19, 57, 64, 89).⁴ Patent Owner points out an example of position distortion when a face image is not captured “in a front-oriented state in a predetermined range.” *Id.* at 26; Ex. 2018 ¶ 57. Figure 4, reproduced in relevant part below, shows position distortion of a captured face image as compared to another face image. Ex. 2018 ¶ 57.

FIG.4

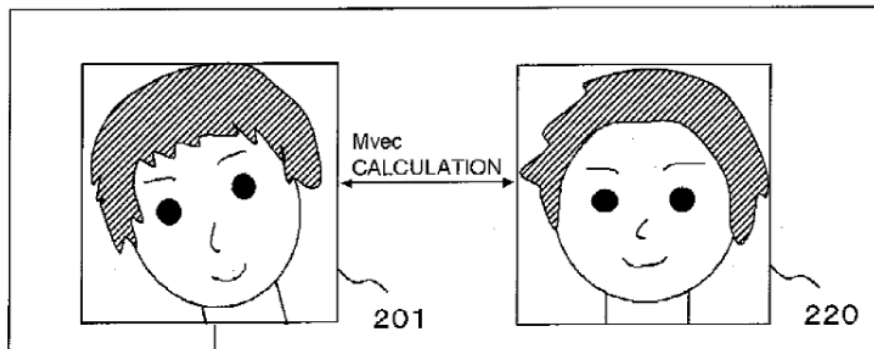


Figure 4 is a schematic view showing a face image with position distortion. Ex. 2018 ¶¶ 30, 64

Figure 4 shows input face region image 201, i.e., the imaged face, having a position distortion as compared to average face image 220, i.e., a stored reference face image. Ex. 2018 ¶ 64; *see id.* ¶¶ 40, 61, 63, 67.

Petitioner’s use of Tanii, on the other hand, relies on a different type of face distortion where “an unnatural image results in which the perspective is exaggerated” because a camera images a face too closely. Ex. 1007 ¶¶ 5–7, 47; *see* Pet. 9–11. Figures 3B and 4B of Tanii are reproduced side-by-side below to illustrate Tanii’s perspective exaggeration.

⁴ Petitioner characterizes this distortion “motion-induced” distortion. Prelim. Reply 4 (citing Ex. 2018 ¶ 68); Ex. 2018 ¶ 65. We use Todorki’s terminology, “position distortion.” Ex. 2018 ¶ 57.

Fig.3B

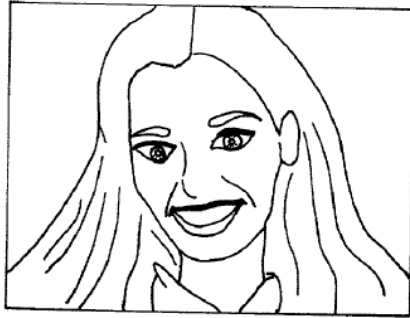


Fig.4B



Figures 3B and 4B are drawings show, respectively, not warped and warped images of a face. Ex. 1007 ¶¶ 19–20.

Figure 3B of Tanii shows an imaged face which is “natural” and undistorted; Figure 4B, in comparison, shows a distorted, “unnatural,” or “warp[ed]” image exhibiting perspective distortion. Ex. 1007 ¶¶ 19, 21, 47–48. Tanii recognizes that the perspective distortion shown in Figure 4B is caused when a three-dimensional object imaged by a cellular phone is too close to the cellular phone. Ex. 1007 ¶¶ 47–48; *see id.* ¶¶ 5–7.

Patent Owner’s characterization that Tanii and Todoroki both correct “forward and rearward distortion” of face images is too reductive, ignoring the material differences in the relied upon information. Prelim. Resp. 27; Prelim. Sur-Reply 4. Todoroki’s “forward and rearward distortion” is an “enlargement or reduction” in the size of the captured face, suggesting distortion resulting from the change in apparent size of the face when it is captured at different distances from the camera. *See* Ex. 2018 ¶ 68. Tanii’s perspective distortion, on the other hand, is an “exaggerated” face resulting from the three-dimensionality of the captured face. Ex. 1007 ¶ 48 (“this unnatural image is caused because, where the center area of the main object protrudes toward the imaging portion 2 relative to the peripheral areas, i.e., where the main object has an essentially convex configuration that protrudes

toward the imaging portion 2”); *see id.* ¶ 49, Fig. 5. Accordingly, Todoroki and Tanii do not teach the same types of distortion.

Patent Owner asserts those differences are irrelevant. Prelim. Sur-Reply. 3–4. They are not; those differences are reflected in the manner in which Petitioner applies Tanii. Petitioner discusses at length how its combination relies on the specific type of perspective distortion Tanii teaches. Pet. 12 (“Tanii . . . leverages geometric distortion arising from the interaction between the shapes of objects being imaged and the camera’s lens.”) (citation omitted); *see id.* 13–15, 17–22. Petitioner also bases its motivation to combine Derakhshani and Tanii on a specific characteristic of Tanii’s geometric distortion. *See* Pet. 12. Tanii discloses that “images of a face close to the camera—in which the face occupies most the image—will exhibit significant distortion. . . . But when the face is further from the camera and occupies less of the image, less distortion will be apparent.” Pet. 12 (citing Ex. 1007 ¶ 47). This characteristic of geometric distortion is relied upon by Petitioner for motivation to modify Derakhshani from using different focus distances to using different actual distances. These specific disclosures relied upon by Petitioner from Tanii demonstrate that Petitioner does not rely on Tanii in the same manner as the Examiner relied on Todoroki for during prosecution.

2. Conclusion

For the above reasons, we determine Tanii is not substantially the same art as Todoroki. Patent Owner does not argue that Petitioner presents the same or substantially the same arguments previously presented to the Office and we do not discern overlap between the arguments. *See* Prelim. Resp.

Accordingly, we determine that Tanii is not the same or substantially the same art as Todoroki and that Petitioner does not present the same or substantially the same arguments previously presented to the Office. Because the first part of the *Advanced Bionics* framework is not met, we need to reach the second part. We therefore decline exercising our discretion to deny institution under § 325(d).

III. ANALYSIS OF ASSERTED GROUNDS

A. *Principles of Law*

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

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) any objective evidence of obviousness or non-obviousness⁵. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art;

⁵ Neither party has introduced any objective evidence of nonobviousness.

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

Petitioner’s declarant, Dr. Sarhan, opines that a person of ordinary skill in the art in the field “would have been a person having at least a Bachelor’s Degree in electrical engineering, computer science, or computer engineering, or undergraduate training in an equivalent field and at least two years of relevant experience in electronics technology.” Ex. 1051 ¶ 30. Dr. Sarhan further opines that “[a]dditional graduate education could substitute for professional experience, and significant work experience could substitute for formal education.” *Id.*

Patent Owner does not contest Petitioner’s proposed level of ordinary skill. *See generally* Prelim. Resp.

For purposes of this Decision, we adopt Petitioner’s proposed level of ordinary skill, which is supported by Dr. Sarhan’s testimony, except that we find that the phrase “at least” in Petitioner’s proposed definition creates a vague, open-ended upper bound for the level of ordinary skill, and we therefore do not adopt that aspect of the proposal.

C. Claim Construction

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

In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of

the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Only claim terms in controversy require express construction, “and only to the extent necessary to resolve the controversy.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

Neither Petitioner not Patent Owner identify any terms for construction. *See* Pet. 6–7; Prelim. Resp. At this stage of the proceeding, we do not see the need to expressly construe any claim terms, as the threshold question of institution can be decided without doing so. A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner’s Response, Petitioner’s Reply, Patent Owner’s Sur-reply, or otherwise during trial, as permitted by our rules.

*D. Obviousness over the Combination of Derakhshani and Tanii
(Ground 1A)*

Petitioner argues claims 1–10 and 12–24 of the ’938 patent would have been obvious over Derakhshani in combination with Tanii. Pet. 7–42.

Below we provide a brief overview of Derakhshani and Tanii and then analyze Petitioner's contentions in light of Patent Owner's arguments.

1. Derakhshani (Ex. 1005)

Derakhshani is titled "Spoof Detection for Biometric Authentication," was filed August 10, 2012 and issued on May 7, 2013. Ex. 1005, codes (54), (22), (45). Derakhshani describes itself as relating to:

technologies relating to biometric authentication based on images of the eye. In general, one aspect of the subject matter described in this specification can be embodied in methods that include obtaining images of a subject including a view of an eye. The methods may further include determining a behavioral metric based on detected movement of the eye as the eye appears in a plurality of the images, determining a spatial metric based on a distance from a sensor to a landmark that appears in a plurality of the images each having a different respective focus distance, and determining a reflectance metric based on detected changes in surface glare or specular reflection patterns on a surface of the eye. The methods may further include determining a score based on the behavioral, spatial, and reflectance metrics and rejecting or accepting the one or more images based on the score.

Ex. 1005, code (57).

2. Tanii (Ex. 1007)

Tanii is titled "Data Recording and Playback System and Method," was filed on February 15, 2002 and was published on August 22, 2002. Ex. 1007, codes (54), (22), (43). Tanii describes itself as relating to:

[a] warp corrector 201, which corrects warp in which the perspective is exaggerated when an image is captured with the user's face at close range, is included in a cellular phone 1 having an imaging portion 2. The warp corrector 201 performs processing to enlarge the peripheral areas of the image relative to the center, and generates corrected image data 232. As a result, a natural image of the user's face can be displayed on the display 11 of the cellular phone or sent.

Ex. 1007, code (57).

3. *Combination of Derakhshani and Tanii*

Petitioner argues that “a POSITA would have been motivated to combine Derakhshani and Tanii because both identify and account for the three-dimensionality of a face when capturing an image.” Pet. 11 (citing Ex. 1003 ¶ 603). According to Petitioner, Derakhshani uses changes in focus distance and/or parallax effect, whereas Tanii looks for distortions in a face caused by the interaction between the camera’s lens and the distance from the imaged object. *Id.* Petitioner argues that Tanii merely recognizes an obvious alternative to evaluating the depth of a face and Petitioner contends that “a POSITA would have been motivated to incorporate Tanii’s evaluation into Derakhshani.” *Id.* Thus, when evaluating multiple images taken at either different focus distances, as Derakhshani teaches, or actual distances, as Tanii teaches, the different types of diffraction in these images provide information about an object’s depth. *Id.* at 12–13 (citing Ex. 1003 ¶ 607).

Petitioner notes that to implement Derakhshani’s focus-distance approach requires a camera with the ability to set a focal plane with extreme sensitivity and that cameras in mobile phones often do not have this ability. Pet. 13 (citing Ex. 1003 ¶ 608; Ex. 1007 ¶ 7). Therefore, especially in the case of mobile phones, “a POSITA would have been motivated to modify Derakhshani . . . to capture at least two images at different *actual* distances and evaluate whether they exhibit different degrees of distance-induced (barrel/fish-eye) distortion, as Tanii suggests.” *Id.* at 13–14 (citing Ex. 1003 ¶ 610). Petitioner argues that both techniques involve the application of well-known optics principles and Tanii already taught a mechanism to identify such distance-induced distortions and thus indicate when the face

being captured has depth. Pet. 14 (citing Ex. 1003 ¶ 610; Ex. 1007 ¶ 56). Thus, the modification would have been nothing more than the use of known technique to improve similar devices or a simple substitution. *Id.* at 14.

Patent Owner argues that the combination of Tanii with Derakhshani would destroy the basic objective of Derakhshani. Prelim. Resp. 43. This is because Derakhshani, according to Patent Owner, requires distortion to determine whether a face is three-dimensional. *Id.* at 44–45 (citing Ex. 1003 ¶¶ 182, 400, 885). Tanii, however, works to correct the distortion that Derakhshani requires to operate. *Id.* at 45 (citing Ex. 1003 ¶ 110–112).

At this stage of the proceeding, we are persuaded that Petitioner has established a reasonable likelihood that a person of ordinary skill would have combined the teachings of Derakhshani and Tanii for the reasons provided by Petitioner and summarized above. Patent Owner’s argument that Tanii would destroy Derakhshani’s basic objective does not address Petitioner’s specifically proposed combination. “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). As noted above, Petitioner proposes to modify “Derakhshani . . . to capture at least two images at different *actual* distances and evaluate whether they exhibit different degrees of distance-induced (barrel/fish-eye) distortion, as Tanii suggests.” *Id.* at 14–15 (citing Ex. 1003 ¶ 141). Thus, Petitioner relies on Tanii for its teaching of evaluating distance induced distortions in a face caused by the camera’s lens and the distance from the object. Pet. 11–12. Petitioner does not propose to modify Derakhshani by incorporating Tanii’s teaching of correcting the distortion. At this stage of

the proceeding, we do not agree with Patent Owner that combining Tanii with Derakhshani would destroy Derakhshani's basic objective. Further, at this stage, we also agree that improving Derakhshani's spoof detection and substituting techniques for spoof detection adequately supports the combination. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

4. *Analysis of Claim 1*

Petitioner contends that the combination of Derakhshani and Tanii teaches each of the limitations of claim 1, supporting its contentions with evidence from the asserted prior art and from the testimony of Dr. Daft. Pet. 15–22. Patent Owner raises arguments regarding claim 1 which we address in a separate section below. *See infra* § IV.G. None of these arguments directly dispute whether the cited portions of the relied upon references disclose the respective limitations of claim 1 for which they are relied upon. Thus, Petitioner's contentions with respect to the limitations of claim 1, which we summarize below, are undisputed at this stage of the proceeding.

We have reviewed Petitioner's contentions and determine that, at this stage of the proceeding, Petitioner has demonstrated a reasonable likelihood that the combination of Derakhshani and Tanii teaches the preamble and limitations of claim 1 for the reasons provided by Petitioner, summarized below. Our determination is not final and based only on the current record and arguments. At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims.

a) *1[pre] – “A non-transient computer readable medium containing non-transitory machine executable code configured to determine if the three-*

dimensional shape is consistent with that of a human face, the non-transitory machine executable code configured to”

Petitioner contends that Derakhshani teaches the preamble⁶ by disclosing a ““computing device” with ‘a machine-readable repository,’ (*Derakhshani*, 7:15-23), that can run a ‘computer program’ with ‘instructions that, when executed, perform one or more methods, such as those described.’” Pet. 15 (citing Ex. 1005, 22:51–64, 24:61–25:8).

According to Petitioner Derakhshani further discloses the computer program involves an authentication process that verifies the user’s face is three-dimensional by capturing multiple images of a user’s face and calculating a “spatial metric” representing the face’s three-dimensionality. Pet. 16 (citing Ex. 1005 1:11–25, 3:14–15, 16:44–18:4; Ex. 1003 ¶614).

b) [1a] – *“receive or derive first biometric data from at least one first image of a user taken with a computing device camera located at a first distance from the user”*

Petitioner argues that for three-dimensional verification, “two or more images of a subject” are captured using Derakhshani’s computing device’s camera and that a POSITA would have understood that an image would have been captured at a first distance because some distance must exist between the user and camera to capture an image of the user’s face. Pet. 16 (citing Ex. 1005 1:44–46, 16:44–17:11, 17:45–18:4; Ex. 1003 ¶ 617).

Petitioner relies on Derakhshani’s disclosure that “a landmark (e.g., an iris, an eye corner, a nose, an ear, or a background object) may be identified and located in the plurality of images” arguing that facial-landmark

⁶ Because we determine that Petitioner has demonstrated a reasonable likelihood that Derakhshani teaches the preamble, we need not make a determination, at this stage of the proceeding, whether the preamble is limiting.

identification constitutes deriving “biometric data.” Pet. 16 (citing Ex. 1005, 16:44–54, 17:45–64).

c) [1b] – “receive or derive second biometric data from at least one second image of the user taken with the computing device camera located at a second distance from the user, the second distance being different than the first distance”

Petitioner contends that Derakhshani alone or in combination with Tanii discloses limitations 1[b]. Pet. 17. Petitioner argues that Derakhshani teaches limitation 1[b] by disclosing that “two or more images of a subject” are captured using its camera and that it processes the images, including a second image, to extract biometric feature points. Pet. 17, 19 (citing Ex. 1005, 1:44–46, 16:44–17:11, 17:45–18:4; Ex. 1003 ¶ 627). When relying on Derakhshani alone, Petitioner cites to Derakhshani’s focus-distance approach and Derakhshani’s parallax approach. *Id.* at 17–18.

For Derakhshani’s focus-distance approach, Petitioner contends that a POSITA would have understood the distance between the user and the camera would need to change if the camera has a fixed focus distance (like in many mobile devices).” Pet. 17 (citing Ex. 1003 ¶ 621). Thus, Petitioner argues that it would have been obvious that when using the focus-distance approach with a fixed-focus-distance camera, Derakhshani captures multiple images from multiple distances. *Id.*

For Derakhshani’s parallax approach, Petitioner contends that Derakhshani’s disclosure that a “plurality of images are taken from different perspectives” due to the camera being “rotated or slid,” or moved naturally due to “involuntary haptic motion,” teaches taking a second image of user from a second distance that is different than the first to evaluate for parallax. Pet. 17–18 (quoting Ex. 1005, 17:45–18:4).

When relying on the combination of Derakhshani and Tanii, Petitioner argues that a POSITA would have been motivated to modify Derakhshani in view of Tanii to expressly capture a second image at a second distance, and look for different degrees of distance-induced distortions to verify the face is three-dimensional. Pet. 18–19 (citing Ex. 1007 ¶ 48; Ex. 1003 ¶ 626).

d) [1c] – “compare the first biometric data with second biometric data for expected differences that result from characteristics of a human face and the at least one first image and the at least one second image being captured at different distances from the user”

Petitioner argues Derakhshani discloses that, for either the focus-distance or parallax approach, biometric features are compared between each of the images to match them. Pet. 19 (citing Ex. 1005, 16:66–17:2 (“comparing the degree of focus for a landmark in images with different focus distances”); 17:45–64 (evaluating relative displacement of identified landmarks); Ex. 1003 ¶ 629).

Petitioner argues “when combining Derakhshani and Tanii, a POSITA would have understood the biometric data from the first and second images would be compared (as Derakhshani already discloses for the focus-distance and parallax approaches) to determine whether the images exhibit expected differences in the amount of distance-induced distortion. Pet. 20 (citing Ex. 1003 ¶ 632).

e) [1d] – “determine that the three-dimensional shape is not exhibited when the second biometric data does not have expected differences compared to the first biometric data, the expected differences comprising at least differences due to the change in the relative distance between the user’s facial features and the camera when the at least one first image was captured at the first distance and the at least one second image was captured at the second distance, wherein the expected differences result from fish-eye type distortion in at least one of the at least one first image and the at least one second image and due to the three-dimensional nature

of the human face and the change in distance between the camera and the user”

Petitioner argues Derakhshani discloses determining a face is **not** three-dimensional when the facial landmarks (e.g., biometric data) match between the two images. Pet. 21 (citing Ex. 1003 ¶ 634). For the focus-distance approach, a match exists if the facial landmarks do not exhibit different degrees of clarity (blurriness or clarity) between images, indicating the features are on the same plane (and thus lack depth). *Id.* (citing Ex. 1003 ¶ 634). For the parallax approach, a match exists if all facial landmarks are displaced by the same amount, again indicating the features are on the same plane. *Id.*

Petitioner argues that although Derakhshani does not disclose that the expected difference is a “fish-eye” distortion caused by changing the distance between the camera and face, when modifying Derakhshani in view of Tanii, a POSITA would have understood that the combination would evaluate whether facial features exhibit different degrees of distance-induced, “fish-eye” distortion. Pet. 21(citing Ex. 1003 ¶ 635).

f) Conclusion – Claim 1

For the foregoing reasons, we determine Petitioner has established a reasonable likelihood that the combination of Derakhshani and Tanii teaches the limitations of claim 1 and a reasonable likelihood that Petitioner will prevail in demonstrating that claim 1 is unpatentable as obvious over Derakhshani and Tanii. Our determination is not final and based only on the current record and arguments. At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims.

5. *Analysis of Dependent Claims 2–10 and 12–24*

Petitioner addresses each of the limitations of dependent claims 2–10 and 12–24 providing support from Derakhshani in combination with Tanii and from Dr. Daft’s testimony. Pet. 22–42. Because Petitioner demonstrates a reasonable likelihood of success in proving that at least one claim of the ’938 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every claim in the ground challenged by Petitioner, especially, as in this case, when Patent Owner does not separately argue those claims. Those challenges, in our view, are best left for trial after full development of the record.

E. *Obviousness over the Combination of Zhang and Tanii (Ground 2A)*

Petitioner argues claims 1–3, 5–9, 12–14, 16–20, and 22–24 of the ’938 patent would have been obvious over Zhang and Tanii. Pet. 46–74. Below we provide a brief overview of Zhang and then analyze Petitioner’s contentions in light of Patent Owner’s arguments.

1. *Zhang (Ex. 1006)*

Zhang is titled “Distinguishing Live Faces from Flat Surfaces” and was filed on June 8, 2010 and was published on December 8, 2011. Ex. 1006, codes (54), (22), (43). Zhang describes itself as relating to:

Multiple images including a face presented by a user are accessed. One or more determinations are made based on the multiple images, such as a determination of whether the face included in the multiple images is a 3-dimensional structure or a flat surface and/or a determination of whether motion is present in one or more face components (e.g., eyes or mouth). If it is determined that the face included in the multiple images is a 3-dimensional structure or that that motion is present in the one or

more face components, then an indication is provided that the user can be authenticated. However, if it is determined that the face included in the multiple images is a flat surface or that motion is not present in the one or more face components, then an indication is provided that the user cannot be authenticated.

Ex. 1006, code (57).

2. *Combination of Zhang and Tanii*

Petitioner argues that a person of ordinary skill in the art “would have been motivated to combine Zhang and Tanii because both concern identifying and accounting for the three-dimensionality of a face when capturing an image.” Pet. 48. According to Petitioner, the two references differ because Zhang looks for distortions in a homography transform, whereas Tanii looks for distortions caused by the interaction between the user’s face and the camera’s lens. *Id.*

Petitioner identifies several ways in which a POSITA would be motivated to combine Zhang and Tanii. For example, Petitioner argues that a POSITA would have been motivated to use Zhang’s existing process, but take advantage of the distance induced distortions at two different distances which would allow Zhang’s procedure to identify the two images as different due to the differences in the distance-induced distortions and thus allow it to verify three dimensionality. Pet. 49–50 (citing Ex. 1003 ¶¶ 743–744).

Petitioner also identifies a second way in which Zhang and Tanii would be combined. Petitioner argues that instead of Zhang warping an image using a homography transform, it could instead warp a close image using Tanii’s distortion-correction procedure and then compare that image to a far image and if the two are sufficiently similar that would indicate a three-dimensional face. A POSITA would be motivated to combined Zhang and

Tanii in this way because it would reduce spoofing of Zhang's system and provide a simpler mathematical operation that requires less computational resources. Pet. 50–52 (citing Ex. 1003 ¶¶ 746–750).

Alternatively, the combination could be further simplified by eliminating the need to mathematically transform an image and instead compare the two images directly to each other to determine whether they exhibit the expected differences in degree of distance-induced distortions. Pet. 51–52 (citing Ex. 1003 ¶¶ 748).

Patent Owner makes the same arguments here as it did for the combination of Derakhshani and Tanii, arguing that Tanii corrects the distortion that Zhang requires to detect whether a face is three-dimensional. Prelim. Resp. 43–45. Specifically, Patent Owner argues that Zhang generates a warped image that it then compares to a second image to detect whether a face is three-dimensional and that Tanii works to correct this distortion preventing Zhang from accomplishing its goal of detecting a three-dimensional face. *Id.* at 44–45.

At this stage of the proceeding, we are persuaded that Petitioner has established a reasonable likelihood that a person of ordinary skill would have combined the teachings of Zhang and Tanii for the reasons provided by Petitioner and summarized above. As before, we disagree with Patent Owner's arguments because it does not address Petitioner's proposed combinations. One of Petitioner's proposed combinations (identified above as the second combination) is still able to detect a three-dimensional face even with Tanii's distortion correction. Additionally, Petitioner's alternative combination does not incorporate Tanii's distortion correction, and instead merely uses the distortion as part of detecting a three-dimensional face. We

therefore disagree that the combination would render the system non-functional.

3. *Analysis of Claim 1*

Petitioner contends that the combination of Zhang and Tanii teaches each of the limitations of claim 1, supporting its contentions with evidence from the asserted prior art and from the testimony of Dr. Daft. Pet. 53–66. Patent Owner raises arguments regarding claim 1 which we address in a separate section below. *See infra* § IV.G. None of these arguments directly dispute whether the cited portions of the relied upon references disclose the respective limitations of claim 1 for which they are relied upon. Thus, Petitioner’s contentions with respect to the limitations of claim 1, which we summarize below, are undisputed at this stage of the proceeding.

We have reviewed Petitioner’s contentions and determine that, at this stage of the proceeding, Petitioner has demonstrated a reasonable likelihood that the combination of Zhang and Tanii teach the preamble and limitations of claim 1 for the reasons provided by Petitioner, summarized below. Our determination is not final and based only on the current record and arguments. At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims.

a) *1[pre] – “A non-transient computer readable medium containing non-transitory machine executable code configured to determine if the three-dimensional shape is consistent with that of a human face, the non-transitory machine executable code configured to”*

Petitioner contends that Zhang teaches the preamble⁷ by disclosing a computing device that can run software stored in a computer readable

⁷ Because we determine that Petitioner has demonstrated a reasonable likelihood that Zhang teaches the preamble, we need not make a

medium. According to Petitioner, Zhang's computing device determines whether a face is a three-dimensional structure or a flat surface. Pet. 52–53 (citing Ex. 1006 ¶¶ 66–71, Fig. 6; Ex. 1003 ¶ 751–753).

b) [1a] – “receive or derive first biometric data from at least one first image of a user taken with a computing device camera located at a first distance from the user”

Petitioner argues that Zhang authenticates a user by capturing a first image at a first distance. Pet. 53 (citing Ex. 1006 ¶¶ 21, 16, 26–27; Ex. 1003 ¶¶ 755–758).

c) [1b] – “receive or derive second biometric data from at least one second image of the user taken with the computing device camera located at a second distance from the user, the second distance being different than the first distance”

Petitioner contends that Zhang alone or in combination with Tanii discloses limitations 1[b]. Pet. 53 (citing Ex. 1003 ¶ 759–762). According to Petitioner, Zhang authenticates a user by capturing a second image and processing that image to derive feature-point biometric data. Pet. 53 (citing Ex. 1006 ¶¶ 26–27; Ex. 1003 ¶ 760). Petitioner argues that it would have been obvious that the second image is captured at a second distance because in order to perform a homography transform, as disclosed by Zhang, multiple images would be taken from different perspectives of the face leading to the images being taken at different distances from the face. *Id.* at 54–55 (citing Ex. 1003 ¶ 761; Ex. 2013, 22–25).

Additionally, Petitioner argues that Tanii teaches that distortions caused by camera lenses can indicate depth in the object being captured and that, therefore, a POSITA would have been motivated to modify Zhang in

determination, at this stage of the proceeding, whether the preamble is limiting.

view of Tanii to capture a second image at a second distance. Pet. 55 (citing Ex. 1003 ¶ 762).

d) [1c] – “compare the first biometric data with second biometric data for expected differences that result from characteristics of a human face and the at least one first image and the at least one second image being captured at different distances from the user”

Petitioner argues that Zhang compares a first biometric data (e.g., the facial-feature locations in the first warped image) and second biometric data (e.g., the facial-feature locations in the second image) for determining whether differences between the two exist, in which differences between the two images would be expected due to movement of the image capture component 102 (camera). Pet. 56 (citing Ex. 1006 ¶¶ 25, 31, 32; Ex. 1003 ¶¶ 764–765).

Additionally, Petitioner argues that based on Tanii’s teachings would motivate a POSITA to compare the first and second of Zhang’s images to evaluate whether one image exhibits expected distance-induced distortion when the user’s face is captured at a close distance versus a further distance. Pet. 56–57 (citing Ex. 1003 ¶ 766). Petitioner, therefore, concludes that “a POSITA would have appreciated that, when modifying Zhang to evaluate differences caused by distance-induced distortions, the presence of such distortions (due to the change in distance of the camera) indicates a three-dimensional face.” *Id.* at 57.

e) [1d] – “determine that the three-dimensional shape is not exhibited when the second biometric data does not have expected differences compared to the first biometric data, the expected differences comprising at least differences due to the change in the relative distance between the user’s facial features and the camera when the at least one first image was captured at the first distance and the at least one second image was captured at the second distance, wherein the expected differences result from fish-eye type distortion in at least one of the at least one first image

and the at least one second image and due to the three-dimensional nature of the human face and the change in distance between the camera and the user”

Petitioner argues that “Zhang discloses ‘if the image differences [between the first and second image after undergoing homography transformation] does not meet the threshold value, then the face in the first and second images is determined to be a flat surface and thus a picture of a face.’” Pet. 57 (citing Ex. 1006 ¶¶ 31–34). While Zhang does not expressly disclose a “fish-eye” type distortion, Petitioner argues that when Zhang is modified by Tanii, a POSITA would have understood that images would be evaluated for distance-induced distortion, i.e. “fish-eye” distortion depending on distance from the camera. *Id.* at 57–58 (citing Ex. 1003 ¶ 769).

f) Conclusion – Claim 1

For the foregoing reasons, we determine Petitioner has established a reasonable likelihood that the combination of Zhang and Tanii teaches the limitations of claim 1 and a reasonable likelihood that Petitioner will prevail in demonstrating that claim 1 is unpatentable as obvious over Derakhshani and Tanii. Our determination is not final and based only on the current record and arguments. At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims.

4. Analysis of Dependent Claims 2–3, 5–9, 12–14, 16–20, and 22–24

Petitioner addresses each of the limitations of dependent claims 2–3, 5–9, 12–14, 16–20, and 22–24 providing support from Zhang and Tanii along with Dr. Daft’s testimony. Pet. 58–74. Because Petitioner demonstrates a reasonable likelihood of success in proving that at least one claim of the ’938 patent is unpatentable, we institute on all grounds and all

claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every claim in the ground challenged by Petitioner, especially, as in this case, when Patent Owner does not separately argue those claims. Those challenges, in our view, are best left for trial after full development of the record.

F. Whether Tanii is Analogous Art

A prior art reference is analogous to a claimed invention if it is either from the same field of endeavor or reasonably pertinent to the particular problem with which the inventor is involved. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). Patent Owner argues Tanii is non-analogous art to the '938 patent because it is not in the same field endeavor as the '938 patent and is not reasonably pertinent because Tanii's "critical feature" is correcting distance-induced image distortion whereas the problem addressed by the '938 patent is preventing spoofing in a facial recognition system by detecting whether an image includes a three-dimensional face.

Prelim. Resp. 37; *see id.* at 37–43. On this record, we disagree.

First, Patent Owner has not identified any logical reason or case law to support its position that only a prior-art reference's "critical feature" counts in the reasonably-pertinent inquiry. *See* Prelim. Resp. 40–42. Here, Tanii's relevant teaching is that a three-dimensional face exhibits distortions when a cellular phone camera and a face are close together during image capture. Ex. 1007 ¶¶ 47, 48, Fig. 4B; *see* Pet. 9–11. Because that teaching is reasonably pertinent to the '938 patent's particular problem of detecting whether a face is two-dimensional (i.e., a photograph) or three-dimensional, we agree with Petitioner that Tanii is analogous art. *See* Ex. 1003 ¶ 110.

Second, because Tanii and the '938 patent both address processing “distortions of [3D] faces in images captured using a camera,” we disagree with Patent Owner that Tanii is from a different field of endeavor than the '938 patent. Prelim. Reply 5 (citing Ex. 1001, 28:36–59; Ex. 1007 ¶¶ 5, 7; *see Netflix, Inc. v. DivX LLC*, 80 F.4th 1352, 1359 (Fed. Cir. 2023) (explaining that the field-of-endeavor test is “not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field”).

G. Particularity

Patent Owner asserts the Petition lacks particularity as required by 35 U.S.C. § 312(a)(3) for two reasons. Prelim. Resp. 46–53. First, Patent Owner alleges that Petitioner relies on inconsistent mapping between claim 1 and dependent claim 5. *Id.* at 46–48. Second, Patent Owner alleges Petitioner’s reliance on Zhang is inconsistent. *Id.* at 48–49. These reasons do not convince us the Petition lacks the requisite particularity. Our detailed discussion follows.

1. Inconsistent Mapping of Claim 1 and Claim 5

Independent claim 1 recites “first biometric data” and “second biometric data” and its dependent claim 5 recites “first data” and “second data.” Ex. 1001, 38:17–26, 57–65. In claim 1, Petitioner relies on Derakhshani’s disclosure of “*facial-landmark[s]*” as teaching the recited “first biometric data” and “second biometric data.” Pet. 16 (citing Ex. 1005, 17:45–64 (“a landmark (e.g. an iris, an eye corner, a nose, an ear, or a background object) may be identified and located in the plurality of images.”) (emphasis added). In claim 5, Petitioner relies on “*extracted features* from the captured images” to meet the “first data” and “second

data” recited in claim 5. *See id.* at 25 (citing Ex. 1005, 4:19–24, 7:19–34, 8:60–64, 9:31–34, 9:59–67, 13:62–14:9; 17:32–36) (emphasis added).

Patent Owner’s argument that Petitioner contradictorily relies on “landmarks” to teach first and second “biometric data” in claim 1 and “features” to teach first and second “data” in claim 5 splits hairs. Prelim. Resp. 46–48. We understand Petitioner to use the terms “landmarks” and “features” synonymously. For example, Petitioner asserts that, in *Derakhshani*, a “landmark” may be a “user’s eyes, nose, ears, and *other features*.” Pet. 17 (emphasis added) (citations omitted). Similarly, Petitioner synonymously uses the terms “landmarks” and “features” when describing “processing the images to identify *feature landmarks*.” Pet. 30 (emphasis added). Accordingly, we determine Petitioner does not contradict itself or inconsistently map *Derakhshani* to the claims.

2. *Inconsistent Reliance on Zhang*

Petitioner argues that Zhang’s disclosure of “feature-point biometric data” derived from processing captured images teaches “first biometric data” and “second biometric data” as recited in limitations 1[a] and 1[b] of claim 1. Pet. 53 (citing Ex. 1006 ¶¶ 26–27). For limitation 1[c], Petitioner states Zhang’s “first biometric data” is met by “the facial-feature locations in the first warped image.” Pet. 56.

Patent Owner argues that Petitioner’s mapping of “first biometric data” to “biometric data from a warped version of the first image” in limitation [1c] is inconsistent with Petitioner’s mapping of “first biometric data” from a first captured image in limitation [1a]. Prelim. Resp. 48–49. Patent Owner’s argument is unavailing. Feature-points are described as “a corner of an eye, a corner of a mouth, a tip of a nose, and so forth.” Ex. 1006 ¶ 27. Thus, feature points, relied on for limitation [1a] are facial-

feature locations, relied on for limitation [1c]. Patent Owner’s argument distinguishes between different *images*, namely, a captured image and a warped version of the captured image. *See id.* But Petitioner relies on feature-point biometric data to teach “first biometric data” in both limitation [1a] and in limitation [1c]. That is, the extracted facial feature points correspond to the “first biometric data,” not the images themselves. Accordingly, we determine Petitioner does not inconsistently map Zhang to the claims.⁸

H. Remaining Grounds 1B, 2B, and 2C

Because Petitioner demonstrates a reasonable likelihood of success in showing that at least one claim of the ’938 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge raised by Petitioner, especially, as in this case, when Patent Owner does not separately argue all grounds. Those challenges, in our view, are best left for trial after full development of the record.

IV. CONCLUSION

Petitioner has demonstrated a reasonable likelihood of prevailing in showing the unpatentability of at least one challenged claim of the ’938 patent and we institute on all grounds raised and all claims challenged in the

⁸ Patent Owner argues “to the extent the ground is understood, it cannot establish a *prima facie* case of obviousness.” Prelim. Resp. 49. That argument is better suited to Patent Owner’s arguments on the merits of Petitioner’s challenge, not to whether Petitioner’s presents its challenge with particularity. Further, Patent Owner does not explain why Zhang’s extracted facial features do not meet the claimed “first data.” *See id.*

Petition. At this stage of the proceeding, however, we have not made a final determination with respect to the patentability of the challenged claims.

V. ORDER

For the foregoing reasons, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–24 of the '938 patent is instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '938 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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