

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUMIO CORPORATION
Petitioner,

v.

FACETEC, INC.
Patent Owner.

Patent No. 11,874,910

Inter Partes Review No. IPR2025-00109

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I. GROUND 1A: DERAKHSHANI-TANII

A. Derakhshani-Tanii Teaches “verifying[/evaluating] three-dimensionality of a[/the] user” (Elements 1[pre]/10[pre]/22[pre])

FaceTec’s expert, Turk, agreed Derakhshani authenticates three-dimensionality of the user but argues it does not capture an image of the user’s face. (EX1059, 128:21-129:1; EX2061, ¶¶351, 357.) But FaceTec’s argument does not match the breadth of the ’910 independent claims, which merely require verifying/evaluating three-dimensionality of a “user,” not its face. (EX1001, Claims 1, 10; EX1060, ¶¶197-198.)

Yet even if FaceTec was correct (it is not), Derakhshani still captures an image of the face. Derakhshani’s spatial metric determines three-dimensionality using differences in landmarks at different distances from the sensor. (EX1005, 16:44-47, 17:22-26.) A landmark may be “on a particular user’s face” such as “a nose, an ear,” “a mouth,” or may be a “background object.” (EX1005, 16:51-54, 17:16-17, 17:29-36.) It would be obvious for an image having multiple “landmarks (e.g., an eye, nose, mouth, *and* ear)” to be of the head/face. (EX1005, 17:16-19; 3:5-7, 17:2-6; EX1059, 136:25-137:3.) Derakhshani also envisions capturing an image comprising an eye and a background object (landmark). (EX1005, 16:51-54.) For example, to capture both a user and a painting (example

background object) behind the user, the sensor must be far enough away such that it captures the head/face. (EX1059, 148:16-149:22; EX1060, ¶¶197, 199-202.)

FaceTec’s three counterarguments are wrong on every count. **First**, FaceTec is wrong that Derakhshani’s capture of the eye vasculature means it cannot capture the face. (POR, 40.) Derakhshani’s spatial metric determination uses multiple images captured at different distances. (EX1005, 16:44-47, 17:45-47.) For example, a close-up image may capture the eye vasculature (with enough precision) for the match score and/or liveness score, and a further-away image for the liveness score. Because the liveness score determination uses images of non-eye landmarks, the further-away image captures more than the eye, *e.g.*, it captures the eye, nose, mouth, and ear—*i.e.*, the face. (EX1005, 17:16-19.) Capturing an image of the eye vasculature does not preclude capturing an image of the head/face. In fact, Derakhshani’s authentication is “based *in part* on ... images of the white of an eye,” or in other words, images of more than the eye. (EX1005, 5:65-67; EX1060, ¶¶203-205.)

Second, FaceTec is wrong that Derakhshani cannot capture images of faces. (POR, 41-42.) It points to figures “depicting only eyes” and a non-limiting “placing [a] sensor 6-12cm from the eye” for support, but ignores other disclosures of capturing images of non-eye landmarks. (EX1005, 16:44-54 (describing images with “a nose, an ear, or a background object”), 17:16-17 (describing “landmarks

(e.g., an eye, nose, mouth, and ear)” in an image); POR, 42.) And Derakhshani’s teachings are not strictly from the figures. (POR, 42.) Turk admitted the figures do not show a disclosed embodiment (captured image of the nose, ear, mouth, and eye). (EX1059, 137:4-17; EX1005, 17:16-19.) FaceTec is wrong: Derakhshani’s capture images of non-eye landmarks is not incidental. (POR, 43; EX1060, ¶206.)

Further, a POSITA would have understood there must be a discernable difference in distance between the user and sensor in order to accurately determine the spatial metric and three-dimensionality. (EX1005, 17:55-59 (“If all the landmarks in the images undergo the *same apparent displacement* due to relative motion of the sensor, *i.e., the difference in the parallax effect for the landmarks is small*, then the subject viewed by the camera has [a] *higher likelihood of being a two-dimensional spoof attack*.”).) This distance difference means at least one image must be taken far enough away (more than 6-12 cm from the eye), thereby capturing non-eye landmarks of the face. (EX1060, ¶¶207-208.)

And nowhere does Derakhshani suggest a primary purpose of capturing the eye vasculature, or that it relies on images of the eyes only for the spatial metric determination or user authentication. (POR, 31-32, 43; EX1059, 126:4-13 (Turk agreeing spatial metric determination not solely based on eye characteristics), 136:16-24 (Turk agreeing Derakhshani captures images of more than the eye); EX1060, ¶¶202, 205.)

Third, FaceTec is wrong that the eye vasculature and face need to be captured simultaneously both with enough precision. (POR, 43.) The spatial metric determination may use a close-up image that captures the eye vasculature in focus (having enough precision) and a further-away image that captures a landmark in focus (eye vasculature is blurred). (EX1059, 144:7-16.) The match score determination may use the close-up image. (EX1060, ¶¶209-210.)

FaceTec is also wrong that Tanii does not detect a face. (POR, 44-46.) Tanii teaches detecting the size of an object. (EX1007, [0074].) By detecting the size of an object, *i.e.*, a face, Tanii detects the face. (EX1007, [0061].) Turk agreed. (EX1059, 174:17-175:2, 175:5-14.) Tanii further “extract[s] the contours of the main object” and “identif[ies] the region ... of the main object based on the location of clear edges in the image ... [and] the color distribution of the image.” (EX1007, [0067], [0069], [0076].) Both techniques (the extracting and the identifying) are ways to identify the face. (EX1060, ¶211.)

B. Derakhshani-Tanii Teaches “comparing the first data to the second data to determine whether expected differences exist” (Elements 1[d5]/10[f]) And “comparing one or more aspects of the user’s head ... to determine whether expected differences, between the first image and the second image, exist” (Element 22[d])

Apart from 1[pre]/10[pre]/22[pre] and its repeat flawed argument that Tanii does not detect a face (§ I.A), FaceTec’s arguments for claim 1 all hinge on

(mis)understanding Petitioner's combination and whether Tanii detects three-dimensionality or expected distortion. (POR, 44-45.) FaceTec is wrong.

Tanii teaches detecting three-dimensionality and expected distortion. It applies different levels of correction depending on the detected distance between the object and phone: no correction "where the distance to the main object equals or exceeds the threshold value D1," low degree of correction where the distance is "less than the threshold value D1," and high degree of correction where the distance is "less than the threshold value D2." (EX1007, [0101]; *see also* [0136] (discussing "automatically determin[ing] whether or not correction is needed."), Claim 7; EX1059, 175:15-176:15.) Because the detected distance affects "expected distortion," and this distortion is due to three-dimensionality, Tanii identifies and assesses three-dimensionality and expected distortion. (EX1059, 174:2-11, 177:4-178:14, 60:18-21; EX1060, ¶¶212-215.)

Lastly, FaceTec's attack on Tanii's warp correction does not respond to Jumio's combination. (POR, 44-45.) Jumio relies on Tanii's teachings of distance-induced distortion in a face, not warp correction. (Petition, 13-15.) It would be obvious to combine Tanii's teachings of distance-induced distortion together with Derakhshani's authentication system. (Petition, 13-17.) The Board already rejected FaceTec's attempt to rewrite the Petition's combination and should do so again here. (DI, 17-18.) Moreover, it makes no difference whether

Tanii operates the same for a *non-face* because the '910 claims are directed to verifying/evaluating a *user*. (POR, 45; EX1060, ¶216.)

C. FaceTec Fails To Rebut The Petition's Motivation To Combine Derakhshani And Tanii

A POSITA would be motivated to combine Derakhshani and Tanii because Derakhshani's approaches require a camera with extreme sensitivity, and Tanii teaches an obvious alternative for mobile phones having wide angle lenses. (Petition, 14-15.) FaceTec's rebuttal—that Derakhshani and Tanii are incompatible—fails. Mobile phones having wide angle lenses were known at the time (EX1059, 12:12-21), and applying Tanii's teachings to Derakhshani's system uses well-known optics principles. (EX1003, ¶884.) FaceTec does not dispute this. And like Tanii, Derakhshani's system already captures images of the face. (§ I.A; EX1060, ¶¶217-220.)

FaceTec's other arguments fail. To start, FaceTec has the Petition's combination wrong. (POR, 60-62.) The Petition's combination is not "Tanii's distortion correction with Derakhshani's eye-vasculature authentication." (POR, 45.) The Petition combined Derakhshani's system and method with Tanii's distance-induced approach. (Petition, 13-17.) And contrary to FaceTec's assertions, Tanii teaches evaluating distance-induced distortions, including determining the level of correction. (§ I.B; POR, 61; EX1060, ¶¶217-218.)

FaceTec also has the Petition's motivation to combine wrong. The Petition's motivation to combine is not that images taken at different distances from the sensor have different distortion, but rather Tanii's distance-induced distortions approach allows using Derakhshani's system in mobile phones with wide angle lenses. (POR, 45; Petition, 14-15; EX1060, ¶¶217-218.)

D. Derakhshani-Tanii Teaches “verifying the presence of one or more features[/ears] ... in the at least one first image, and verifying the absence or reduced visibility of the one or more features [/ears] ... in the at least one second image” (Claims 3/12)

Derakhshani teaches verifying the presence of ears in both first and second images: “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* with different focus distances.” (EX1005, 16:51-54; *also* 17:45-55 (“determining 714 the spatial metric comprises determining parallax of ... landmarks that *appear in a plurality of images*. ... This *parallax effect may be measured* and used as a spatial metric that reflects the three-dimensional nature of a subject”); EX1059, 141:10-22, 146:6-9 (Turk agreeing of the presence of landmarks in the images); EX1060, ¶221.)

Derakhshani also teaches verifying reduced visibility of ears. Both experts agree Derakhshani's blurred landmark (“degree of focus is low for a landmark”) has reduced visibility due to reduced resolution/definition. (EX1059, 142:12-

143:21.) Turk contradicted FaceTec’s argument by testifying Derakhshani captures one image (a first image) with a landmark in focus and another image (second image) with the same landmark being blurry, the comparison of which is part of and allows for determining the spatial metric. (EX1059, 144:11-16, 145:9-12; POR, 46 (FaceTec arguing “a blurry ear would not allow for calculation of spatial metrics”); EX1060, ¶222.)

And FaceTec’s attack on Tanii is meritless. (POR, 47.) The Petition relies on Derakhshani—not Tanii—for “verifying” presence/reduced visibility/absence of the ear. (Petition, 34-36; EX1060, ¶223.)

E. Derakhshani-Tanii Teaches “comparing the first data, second data, or both to enrollment data” (Element 5[a])

As the Board already found, the Petition consistently mapped Derakhshani’s “landmarks” and “features” to “first data” and “second data.” (DI, 27.) The Petition argued Derakhshani’s “landmark” may be a “user’s eye, nose, ears, and *other features*.” (Petition, 23, 32 (arguing Derakhshani “process[es] the images to identify *feature landmarks*.”); EX1060, ¶224.)

FaceTec’s rebuttal that “landmarks” and “features” are not synonymous falls flat. (POR, 48-49.) Both “landmarks” and “features” are data of the reference record. The “relative positions of *landmarks* on a particular user’s face . . . [for] generat[ing] a three-dimensional model [] is stored as part of a *reference record*.”

(EX1005, 17:32-36; EX1059, 134:8-135:15.) And “features” are extracted and “compare[d] . . . to [the] *reference record* in order to authenticate the user.” (EX1005, 4:19-24, 7:19-34, 9:59-67, 13:62-14:9; EX1059, 135:16-136:1; EX1060, ¶225.)

FaceTec’s attempt to improperly separate “landmarks” from the eye vasculature is also clearly wrong because Derakhshani names the eye as a landmark. (EX1005, 17:16-17 (“*landmarks (e.g., an eye, nose, mouth, and ear)*”); POR, 47.) FaceTec’s argument that liveness detection is not part of Derakhshani’s authentication is wrong too. (POR, 48 (“Eye *liveness detection* uses image landmarks . . . *Authentication, in contrast*, extracts biometric features . . . “).) As Turk testified, Figure 6 shows all steps of Derakhshani’s authentication process including determining the liveness score. (EX1059, 124:20-125:1; EX1005, 16:59-67, Fig. 6; EX1060, ¶225.)

F. Derakhshani-Tanii Teaches “biometric data“ (Claims 7/16) And “the first data and the second data comprise a map[ping] of facial features” (Claims 8/17)

Derakhshani discloses “an eye, nose, mouth, and ear” (what FaceTec refers to as “image” landmarks)—*i.e.*, “biometric data.” (EX1005, 17:16-19; EX2061, ¶387.) FaceTec argues “image landmarks” are not a mapping of facial features. (POR, 49.) This is wrong. Per Turk, the “eyes, nose, mouth, eyebrows, forehead and such” are features of a face. (EX1059, 42:22-43:5; EX1060, ¶¶226-229.)

G. Derakhshani-Tanii Teaches “reflection of the illumination from a face of the user” (Claim 18), “face of the user is held steady” (Claim 19), And “user’s head is the user’s face” (Claim 24)

For claims 18/19/24, FaceTec again makes the same wrong argument that Derakhshani captures images of the eyes, not face. (POR, 43-44; § I.A; EX1060, ¶230.)

II. GROUND 2A: ZHANG-TANII

A. Zhang-Tanii Teaches “comparing the first data to the second data to determine whether expected differences exist” (Elements 1[d5]/10[f]) And “comparing one or more aspects of the user’s head ... to determine whether expected differences, between the first image and the second image, exist” (Element 22[d])

For elements 1[d5]/10[f]/22[d], FaceTec makes three arguments.

First, FaceTec disputes whether Zhang’s comparison of color/intensity values is determining “expected differences” having “expected distortion.” (POR, 49-50.) Zhang’s color/intensity value differences indicate the image is of a live face having a 3D structure for authenticating the user. (EX1059, 30:12-22, 32:14-19.) Zhang explains “[i]f the image difference meets the threshold value, then the face in the first and second images is determined to be a live face (act 314).” (EX1006, [0034].) As Turk testified, this “binary decision” of authenticating based on color/intensity value differences exceeding a threshold is predetermined (EX1059, 27:12-30:11)—*i.e.*, expected. And a live face having a three-dimensional structure exhibits the distortion of the ’910. (EX1060, ¶¶231-234.)

The prior art confirms. Derakhshani explains “the intensity or color scale can be zoomed in to reveal more subtle changes in the level of the detected image signal. If the captured images are of a *live eye*, it is expected that the range of *color or intensity values detected will continue to vary continuously*. In contrast, a spoofed image (e.g., a digital photograph presented to the sensor) may exhibit large discontinuous jumps corresponding to halftones.”). (EX1005, 19:30-37.) Thus, a live face exhibits expected distance-induced distortion via differences in color/intensity values. (EX1060, ¶232.)

Second, FaceTec argues feature point data used to generate a homography matrix is different from feature point data used to compare images. (POR, 52-53.) FaceTec misreads Zhang. Zhang teaches matching feature points across first and second images by “identifying the locations of the same feature points in each of the two images.” (EX1006, [0028]-[0029].) Zhang uses the feature points to generate the homography matrix. (EX1006, [0028]-[0029].) When comparing the images, Zhang uses the same extracted feature points having respective “locations” to determine color/intensity value differences. (EX1006, [0031]; EX1060, ¶¶237-239.)

FaceTec’s rebuttal—that the “location” for comparing the first and second images refers to the same pixel positions and not to the same “location” for generating the homography matrix—does not make sense. (POR, 53.) A POSITA

would have understood that “location” refers to the color/intensity value of the same feature point being compared because, otherwise, a difference in color/intensity value may not indicate a live face/3D structure, as Zhang requires. For example, a first image may have an eye corner at a pixel position and a second image may have a mouth corner at the same pixel position (due to, *e.g.*, user movement). The comparison may result in different color/intensity values at the pixel position due to color differences between the corners of the eye and mouth. Such difference would occur whether a live face/3D structure or a flat surface. (EX1060, ¶¶237-239.)

Third, FaceTec accuses Jumio of confusing Zhang’s “feature points” with “facial-feature locations.” (POR, 51.) To begin, FaceTec is wrong that the Petition inconsistently mapped Zhang’s “feature points” data and “facial-feature location” to “first data.” Feature points data are data that characterize an individual’s unique physical characteristics, and feature point location is data that characterizes their location—both are data of the feature points. The Petition properly cited the relevant passages, both of which describe feature point data relevant to the limitation at issue. (Petition, 60-61, 63-64; POR, 53-54.) [0027] (for element 1[d2]) discusses processing to create feature point data, and [0031]-[0032] (for element 1[d5]) discuss comparing feature point data in the first and second images. (EX1060, ¶¶235-236.)

Finally, for Tanii, FaceTec recycles its earlier arguments from Ground 1A. (POR, 54-55.) The Board should reject FaceTec's arguments and find Zhang-Tanii teaches the challenged claims of Ground 2A. (§ I; EX1060, ¶240.)

B. FaceTec Fails To Rebut The Petition's Motivation To Combine Zhang And Tanii

The Petition offered three theories for combining Zhang and Tanii. FaceTec does not dispute the first theory (modifying Zhang to capture images at different distances having different degrees of distance-induced distortion). (Petition, 52-54.)

In the second theory, a POSITA would be motivated to use Tanii's distance-induced distortion method, instead of Zhang's homography matrix, to generate Zhang's warped image because this reduces spoofing. (Petition, 54-55.)

FaceTec's counterargument fails because a POSITA would have understood Tanii's method accounts for distance-induced distortions including making ears in the warped image more apparent using Tanii's high degree of correction.

(EX1007, [0101]; EX1060, ¶¶241-242.)

The third theory involves comparing the close image to the far image directly without Zhang's generation of a warped image, thereby eliminating the associated mathematical steps. (Petition, 55-56.) FaceTec argues this comparison does not yield the alleged result. (POR, 63.) This is incorrect. Comparing a

distorted image with a non-distorted image yields differences indicating a 3D structure because the distance-induced distortion causes changes in the images. (EX1003, ¶¶1020-1022.)

Finally, FaceTec’s arguments that Tanii’s teachings relate to correcting image distortion and leaves significant gaps fail as discussed in § II.B. (POR, 64; EX1060, ¶241.)

C. Zhang-Tanii Teaches “verifying the presence of one or more features[/ears] ... in the at least one first image, and verifying the absence or reduced visibility of the one or more features [/ears] ... in the at least one second image” (Claims 3/12)

For claims 3/12, FaceTec repeat its arguments from Ground 1A. (POR, 55.) Zhang’s “feature points are feature points of the face,” “such as a corner of an eye, a corner of a mouth, a tip of a nose, and so forth”—*i.e.*, facial features that fit squarely within the ’910’s description of “biometric data.” (EX1006, [0027]; EX1059, 50:11-14 (Turk agreeing with this description); EX1001, 6:31-41; EX1060, ¶243.)

D. Zhang-Tanii Teaches “biometric data” (Claims 7/16)

For claims 7/16, FaceTec repeat its arguments from Ground 1A. (POR, 55.) Zhang’s “feature points are feature points of the face,” “such as a corner of an eye, a corner of a mouth, a tip of a nose, and so forth”—*i.e.*, facial features that fit squarely within the ’910’s description of “biometric data.” (EX1006, [0027];

EX1059, 50:11-14 (Turk agreeing with this description); EX1001, 6:31-41;
EX1060, ¶244.)

III. GROUND 2C: ZHANG-TANII-HOYOS

Claim 18 requires “detect[ing] a reflection of the illumination from a face of the user.” Although Turk’s declaration argued Hoyos detects a reflection off the eye only, he agreed during his deposition the reflection off the eye in the [0018] embodiment is for the second image only. (EX1059, 123:6-10; EX2061, ¶¶419-422; POR, 56-57.) He also testified Hoyos’ reflection being “primarily on the cornea” means it could come from elsewhere (EX1059, 123:11-124:8; EX1010, [0035]), like the face. Nevertheless, Hoyos still satisfies claims 18. Nothing in claim 18 requires a unique reflective properties, as FaceTec argues. (POR, 57; EX1060, ¶¶245-247.)

IV. UNDISPUTED CLAIMS

Separate from challenging the independent claims, FaceTec does not dispute Jumio’s showings for claims 2, 4, 6, 9, 11, 13, 15, 20, 21, and 23 (Ground 1A, Derakhshani-Tanii), claim 14 (Ground 1B, Derakhshani-Tanii-Tahk), claims 2, 5, 6, 8, 9, 11, 15, 17, 19, 20, 21, 23, and 24 (Ground 2A, Zhang-Tanii), claims 4, 13, and 14 (Ground 2B, Zhang-Tanii-Tahk).

V. TANII IS ANALOGOUS ART

FaceTec’s lead argument for analogous art rests—again—on twisting the Petition’s combinations. Because FaceTec is wrong that the combinations involve Tanii’s warp correction, the Board should find Tanii is analogous art and again reject FaceTec’s arguments. (§ I.C, II.B; DI, 25-26.)

First, the Petition’s combinations rely on Tanii’s teachings of identifying and accounting for distance-induced distortions of three-dimensional faces in images (same function) captured using a camera (same structure). (Petition, 13-14, 52-53.) Thus, Tanii is in the same field of endeavor. (EX1060, ¶¶248-250.)

Second, Tanii is reasonably pertinent to one of the problems the ’910 inventors faced: “this long[er]-understood issue” (Turk’s words) of a three-dimensional face exhibiting distortions when the camera and face are close together during image capture. (EX2061, ¶430.) Tanii recognizes the same problem: “[w]hen the user’s face is close to the camera when such an optical system is used, the exaggeration warp becomes more noticeable.” (EX1007, [0007]; EX1060, ¶¶251-253.)

FaceTec’s argument about the problem being known does not determine Tanii’s pertinence. (POR, 59.) Further, FaceTec’s attempt to redefine Tanii’s purpose is meritless. (POR, 60.) Tanii’s purpose is to account for “warp that causes the image to appear as if the perspective were exaggerated”—not strictly to

correcting distortion. (EX1007, [0006].) As for *In re Clay*, the court stated “[i]f [the prior art] is directed to a different purpose, the inventor would accordingly have had *less motivation or occasion to consider it*”—not that it would *prevent* a POSITA from considering it, as FaceTec alleges. 966 F.2d 656, 659 (Fed. Cir. 1992); (POR, 60; EX1060, ¶¶251, 253.)

VI. THE PETITION IS NOT TIME BARRED

FaceTec alleges iProov is an RPI/privy using the same arguments from the POPR the Board and the Director already rejected. (*Compare* POR, 64-75 vs. POPR, 7-18; DI, 2-3; Paper 23.) Jumio’s Reply (Paper 10) to the POPR shows iProov is neither an RPI nor a privy of Jumio.

- iProov could have filed an IPR but did not, thereby showing it did not desire review (*ATI* Factor 1). (Paper 10, 1.)
- iProov did not direct, control, fund, or work on the Petition (*ATI* Factor 2)—more on that below—as FaceTec argues. (EX1049, ¶4; EX1055, 3, 5; EX2086, 91:7-20, 93:8-24.) Jumio never discussed the Petition nor its substance with iProov, and any alleged coordination on invalidity contentions took place *after* the Petition was filed. (Paper 10, 1-2; EX1049, ¶6.) In fact, Jumio found the art in the Petition, including its own patent Derakhshani, independently. (Paper 10, 3; EX1049, ¶5.)

- iProov is not funding the IPR (*Taylor* Factors 1, 2). (Paper 10, 3.)
- iProov and Jumio have an arms-length customer-supplier business relationship with a standard indemnity agreement (*ATI* Factors 3, 4). (Paper 10, 2.)
- iProov intervened in district court because it and Jumio have diverging interests, including Jumio having its own liveness technology that does not rely on iProov technology, showing Jumio does not adequately represent iProov (*Taylor* Factor 3). (Paper 10, 3.)

FaceTec’s remaining arguments are meritless. (POR, 64.)

First, FaceTec is wrong the iProov/Jumio agreement *requires* Jumio to give

iProov [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

FaceTec also incorrectly argues iProov confirmed to the court the conditions were met. (POR, 72-73.) iProov’s “indemnification obligation” in EX2006 refers to the *existence* of an indemnification clause in the agreement (“[t]he iProov-Jumio Agreement includes an indemnification obligation”)—it does not mean iProov is

indemnifying Jumio. (EX2006, ¶7.) iProov is not. No payments or consideration have been exchanged under the agreement. (EX1055, 3-6.) And FaceTec’s argument that Jumio refused to provide an explanation/evidence for the absence of a payment/consideration is illogical. (POR, 73.) There is no evidence of payment/consideration because iProov is not indemnifying Jumio.

Second, the Board should reject FaceTec’s grab-bag of attacks on Jessica Kaiser. (POR, 75-79.) Her investigation was to *confirm* the accuracy of her declaration statements—not because she lacked personal knowledge of these facts. (EX2086, 12:4-16, 69:4-9.) Her testimony regarding allegedly lacking personal knowledge concerns coordination of the invalidity contentions. (EX2086, 68:14-24.)

FaceTec attacks Kaiser for not remembering whether she spoke with all of the Perkins IPR team. (POR, 76.) However, her declaration did not concern facts about speaking with of the Perkins IPR team. Instead, it concerned facts about iProov not directing, controlling, or funding the Petition, iProov not providing or suggesting the prior art in the Petition, and the post-Petition filing communications with iProov about invalidity contentions. (EX1049, ¶¶4-6.)

And FaceTec is wrong that Kaiser admitted to gaps in her investigation. (POR, 76.) She did not need to “speak” with Jumio to *send* it drafts. Consistent with her declaration, she testified she was “not aware of ... any conversations

between IProov and Jumio,” including after the Petition was filed. (EX2086, 44:17-45:8, 74:8-11.) Further, details about billing correspondence do not change that iProov did not fund the Petition.

Lastly, FaceTec’s request that it be allowed to make inferences because of Jumio’s objections is unfounded. (POR, 77-78.) FaceTec has not shown why Kaiser’s statement (“iProov did not direct, control, or fund the Petitions”) is incorrect. (EX1049, ¶4.) iProov is not an RPI/privy.

VII. LEVEL OF ORDINARY SKILL IN THE ART

FaceTec proposes a POSITA level with work experience in “biometric security, facial authentication, *and* three-dimensional computer vision.” (POR, 28-29.) But the patent broadly defines the field as encompassing “biometric security.” (EX1001.) Neither the claims nor specification mentions “three-dimensional computer vision,” or suggests FaceTec’s need to understand mathematical modeling. (POR, 28.) And it is unclear how someone with experience in “facial authentication” does not already have experience in “biometric security.”

FaceTec also resorts to attacking Dr. Daft’s qualifications. (POR, 29-30.) There is no dispute that Dr. Daft meets Petitioner’s level of skill. FaceTec’s challenge is thus premised only under FaceTec’s level which, as discussed above, fails to recognize that the patent defines the field as encompassing biometric security. But Dr. Daft more than qualifies even based on the skills highlighted by

FaceTec. He has over two years experience in *computer vision* (EX2082, 73:8-20 (describing computer vision experience involving interpreting images)), and over two years experience in *biometrics and biometric security* (EX2082, 73:21-75:8 (describing biometrics and biometric security experience involving biometric fingerprint recognition for *user authentication*)) as of the time of the '910. (EX1060, ¶¶6-8; *see also* EX1001 (referring to fingerprint authentication as “Related Art”).)

Finally, FaceTec imagines Dr. Daft reaching conclusions a POSITA would never reach. (POR, 30.) Yet FaceTec does not even discuss Dr. Daft’s actual conclusions—some of which are associated with optical effects, where he has over 25 years of experience. (EX2082, 71:2-16, 72:18-73:7.) For example, Dr. Daft explained it would be obvious to combine Derakhshani and Tanii because Tanii’s distance-induced distortions approach is an obvious alternative to Derakhshani’s approaches. (EX1003, ¶¶603-611.)

VIII. NO OBJECTIVE INDICIA OF NONOBVIOUSNESS

FaceTec’s secondary considerations evidence does not rebut the strong case of obviousness above. FaceTec fails to show nexus, either under a presumption or in fact, between its objective evidence and the claimed “invention.”

A. No Presumption Of Nexus

A presumption of nexus only applies “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Teva Pharms. Int’l GmbH v. Eli Lilly & Co.*, 8 F.4th 1349, 1360 (Fed. Cir. 2021). Even though FaceTec bears the burden, it provides only two conclusory paragraphs on nexus. (POR, 6-7.) Turk is similarly conclusory. (EX2061, ¶¶455-458.) The thin analyses fail to show the objective evidence is tied to a product *coextensive* with the independent claims.¹

FaceTec’s objective evidence is based on the ZoOm product.² (EX2061, ¶456, EX1059, 82:10-16; EX2062.) When ZoOm is initiated by a user, the software performs several actions to ultimately provide a “high confidence decision” that “a real live human being [is] in front of the camera and not some sort of spoof or attack.” (EX1082, 75:6-21; EX2059, ¶49 (liveness determination is “multilayered”); [REDACTED]) [REDACTED]

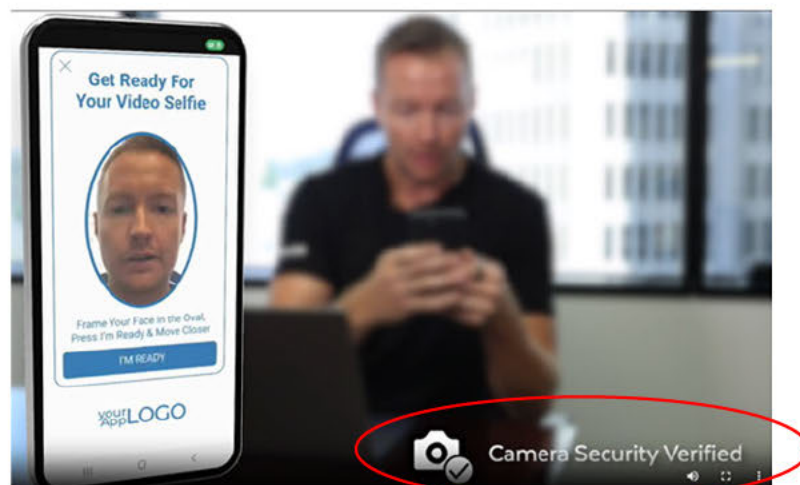
¹ Turk’s analysis was limited only to the independent claims. (EX2061, Appendices A-H.)

² Rose testified the product name changed from ZoOm to FaceTec SDKs after the pandemic. (EX1082, 29:17-31:5.)

[REDACTED] (EX1082, 43:12-45:3; EX2069, 0:20-0:45.) One of the checks at the server determines whether the user is three-dimensional. (EX1082, 99:15-100:3, 149:3-16; EX1059, 78:23-79:20, 114:2-115:4.) The objective evidence is thus unconvincing, because it is tied to ZoOm—which has many features that FaceTec considers critical—whereas the independent claims are directed solely to determining three-dimensionality. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1374 (Fed. Cir. 2019) (requiring patentee to “demonstrate that the product is essentially the claimed invention”); also EX 2059, ¶10; EX1059, 78:3-79:78; EX1060, ¶¶254-299.

1. Control of the camera

ZoOm first takes control of the camera, selects the camera’s properties, and verifies the camera security (the feed coming from it) as shown below.



(EX2069, 0:31 (annotated); EX1059, 84:19-85:2; [REDACTED] [REDACTED]

[REDACTED] EX1060, ¶¶267-273.) [REDACTED]

[REDACTED])

Controlling the camera defends against video injection attacks and other types of camera-focused attacks, and helps obtain the best possible feed for determining liveness. (EX1060, ¶¶270-271, 273.) In an evolving spoof landscape, FaceTec believes controlling the camera to be critical, so much so that it created a Level 5 threat in its Spoof Bounty Program based on camera feed integrity. (EX1082, 113:6-16; EX1059, 171:14-21; EX1067, 3 (FaceTec explaining injection and virtual camera attacks are “the most difficult to defend [against]”).) According to FaceTec, the goal of the Bounty program is “to uncover any potentially unknown vulnerabilities . . . so any issues can be patched and the anti-spoofing capabilities and overall platform security elevated even further.” (EX2046, 1; *see also* EX2059, ¶¶29-31.)

Moreover, none of the independent claims is directed to controlling the camera feed, but FaceTec has at least one other patent application (EX1074) directed to this unclaimed feature, thereby defeating nexus. *Fox Factory*, 944 F.3d at 1375 (“a patent claim is not coextensive with a product that includes a ‘critical’

unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality[.]”). (EX1060, ¶272.)

2. UI

ZoOm's UI includes two ovals for capturing farther and closer images:



(EX2069, 0:31, 0:34 (closer); EX1059, 87:8-16; [REDACTED] EX1060, ¶¶274-279.)

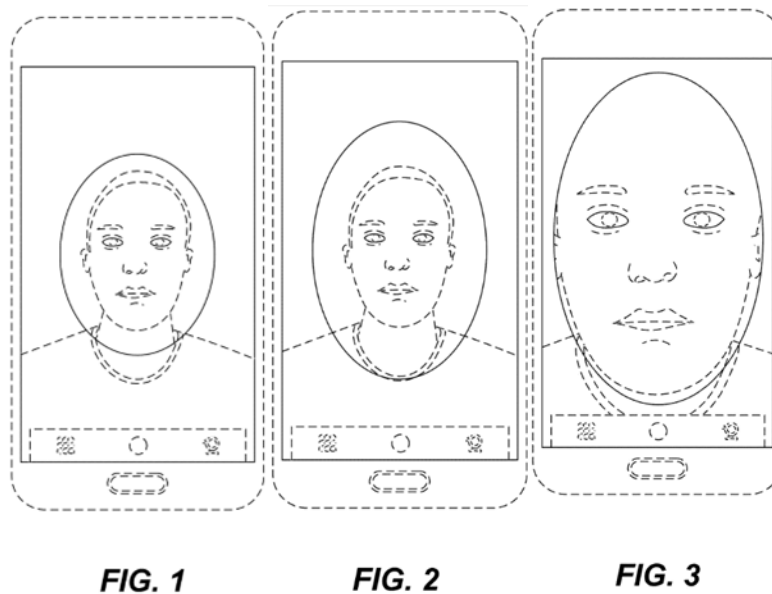
The ovals ensure that capture of images is consistent across faces, according to FaceTec. (EX1086/EX1072/EX1073, 3:3-11.) [REDACTED]

[REDACTED]

[REDACTED] EX2059, ¶46; EX1082, 20:6-13, [REDACTED]

[REDACTED].) But none of the independent claims is directed to a UI with ovals. Yet FaceTec has *other* patents directed to this unclaimed feature, including a design patent that FaceTec touted as part of its “3D liveness detection capability.”

(EXS1075-1077; EX1067; EX1060, ¶¶275-279.)



(EX1075, FIGs. 1-3.)

FaceTec may argue that the use of ovals is claimed in some dependent claims of the Challenged Patents, but Turk did not analyze any dependent claims as discussed above. In any event, not all the Challenged Patents include dependent claims directed to the ovals (*see* EX1001 of IPR2025-00108), yet FaceTec submits the same objective evidence in all four proceedings. This defeats nexus. *Fox Factory*, 944 F.3d at 1378 (“The same evidence of secondary considerations cannot be presumed to be attributable to two different combinations of features.”).

3. Encryption of data

ZoOm next encrypts the data on the device-side and sends a file (called 3D FaceScan) to a secure server for decryption (below):



(EX2069, 0:37; [REDACTED] EX1060, ¶¶280-284.)

Mr. Rose testified “it’s important that the data that we process and analyze and inspect and pretty much anything we do with the data hasn’t been tampered with.” (EX1082, 35:21-37:7.) Indeed, tamper proofing with encryption is so “very important,” according to FaceTec, that the Bounty program has a bounty for decrypting the FaceScan file, according to Rose. (EX1082, 35:21-37:7; [REDACTED]
[REDACTED]; *see also* EX1086/EX1061, 4; EX2046, 1; EX1060, ¶281.) But none of the independent claims is directed to encrypting data for decrypting on a secure server, whereas at least one *other* patent application is. (EX1078; EX1060, ¶¶282-283.)

4. Liveness checks

ZoOm’s purpose is to make a decision that a “live human being [is] in front of the camera[.]” (EX1082, 75:6-21, 109:10-110:5; [REDACTED]) *One* of those checks is determining whether the user is three-dimensional. (EX1082, 99:15-

100:3, 149:3-16; EX1059, 78:23-79:20, 114:2-115:4.) Liveness checks look at “several dozen uniquely human traits” and “involuntary cues,” such how pupils dilate under different conditions. (EX1063, 4; EX1067, 3; [REDACTED] EX1060, ¶¶285-294.) [REDACTED]

[REDACTED] *see also* [REDACTED]

[REDACTED] EX2062 0:41, 0:50.)

According to FaceTec, these liveness checks are critical to defend against, *e.g.*, 3D masked attackers. (EX1073, 12:24-14:18; EX1060, ¶291.) A FaceTec executive explained “[i]f the only thing you measure is three dimensionality, then those masks will work.” (EX1073, 12:24-13:1.) None of the independent claims is directed to liveness checks. (EX1060, ¶293.) And many of FaceTec’s own patents distinguish between such checks and a three-dimensionality check. (EX1079 (claims 1,2,8); EX1081 (claim 1); EX1060, ¶¶292-293.)

5. Removal of liveness data

[REDACTED] (EX1082, 56:2-58:9; EX1060, ¶¶295-298; EX1083, 1.) [REDACTED]

[REDACTED] (EX1082, 58:18-59:1; EX1060, ¶295.) FaceTec describes the removal of liveness data as a “critical selling feature in our view.” (EX1073, 10:3-

4; EX1060, ¶296.) None of the independent claims is directed to removal of liveness data. (EX1060, ¶297.) Yet at least one other patent application (EX1080) is directed to this unclaimed feature. (EX1060, ¶297.)

B. No Nexus In Fact

For nexus in fact, FaceTec must show “the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Fox Factory*, 944 F.3d at 1373-74. Here too FaceTec fails, because the evidence is not a direct result of determining three-dimensionality. (EX1060, ¶¶300-346.)

1. Alleged praise

FaceTec points to certifications from iBeta, BixeLab, and Praetorian as evidence of industry praise. (POR, 7-8.) FaceTec itself called ISO/IEC 30107-3 standard-based certifications (like iBeta and Bixelab) “outdated.” (EX1065, 1.) Further, these companies tested ZoOm, which included many other anti-spoofing features, in order to obtain a certification. For example, the Level 2 certifications involved attackers with sophisticated masks, which would spoof a three-dimensionality check alone. Additionally, one BixeLab certification tested the matching feature, which Mr. Rose admitted was a separate feature, and the Praetorian certification tested penetration testing, a cybersecurity test rather than a

biometric security one. (EX1060, ¶¶302-311; EX1082, 126:9-127:18; EX2059, ¶¶48-49.)

FaceTec also points to statements made by Petitioner as evidence, but such statements lack a nexus to the claimed invention. As an initial matter, Petitioner was not a competitor at the time. The statements Petitioner made, which were made in the partnership announcement, discussed ZoOm, something more than just the check for three-dimensionality. [REDACTED]

[REDACTED]

[REDACTED] (EX1060, ¶312.)

FaceTec also cites an article from Petitioner supposedly highlighting how ZoOm is “secure,” “accurate,” and has an “intuitive interface.” (POR, 8.) However, as mentioned above, ZoOm includes more than a 3D check. Those comments related to unclaimed features. Same for the other articles presented. (EX1060, ¶¶313-315.)

2. Alleged copying

FaceTec puts forth no actual proof establishing iProov or Petitioner copied the claimed invention.³ (EX1060, ¶¶316-329.)

³ Petitioner does not concede that FaceTec has established access.

a. iProov

Rose only broadly notes the iProov program verifies an online user as “[a] real person” and it copied “at least two security features,” [REDACTED] (EX2059, ¶¶45-46.) Rose makes no showing that iProov determines liveness based on checking three-dimensionality or expected differences. (EX1060, ¶¶317-323.)

Turk merely presents a series of appendices, which he admits he himself did not prepare. (EX1059, 181:5-8.) Turk refers to only two exhibits to demonstrate operation of the iProov product. (EX2071; EX2059.) Neither of these exhibits shows any kind of determination of three-dimensionality resulting from expected differences between images. When questioned, Turk admitted he “[did]n’t that know for sure” whether “biometric information was compared” and he would need to “look more closely at iProov’s system to determine that.” (EX1059, 186:25-186:4.) He further admitted, when questioned about a particular claim element and screenshot that he cited in the Appendix for support of copying, he “[did]n’t believe the image itself shows that step” of actually “comparing.” (EX1060, ¶¶319-323; EX2061, Appendix A; EX1059, 188:18-189:6.)

b. Petitioner

FaceTec cites to four paragraphs in Turk’s declaration citing the appendices. Turk also admitted he “ha[d] not seen [Jumio’s] software and been able to analyze

exactly how their system works.” (EX1059, 189:17-190:2.) Instead, he cites only a few screenshots and an article as support, none of which shows or discloses, at least, any kind of determination of three-dimensionality resulting from expected differences between images. (EX1060, ¶¶324-329.)

3. Alleged long-felt need and failure by others

FaceTec claims there was a need for “secure software-based 3D liveness detection.” (POR, 18.) But none of its evidence mentions a need for liveness based on “three-dimensionality.” In fact, others in the industry attempted to meet the need for a “secure software-based liveness solution” by using other approaches, *e.g.*, eyeball tracking or monitoring facial movements. (EX1060, ¶¶330-335; EXS2048-49.)

FaceTec approached the need based on three-dimensionality liveness, but a three-dimensionality check, on its own, may be spoofed by other types of attacks, such as an attacker using a three-dimensional mask. ZoOm uses other features to prevent against other attacks, such as deepfake injection attacks, middle-man attacks, attackers using 3D masks, and preventing a honeypot risk, as discussed above. At least each of these features is necessary to create a secure, holistic, and accurate evaluation of liveness, according to FaceTec. (EX2036, 3.)

FaceTec also alleges Petitioner tried and failed to meet the aforementioned need. (POR, 18.) However, if FaceTec defines the need as “Secure Software-

Based **3D** Liveness Detection Technology,” FaceTec offered no proof that anyone attempted to solve a problem related to evaluating liveness based on three-dimensionality. (POR, 18, emphasis added; EX1060, ¶335.) Furthermore, an “upgrade” does not necessarily mean Petitioner’s previous approach failed or that Petitioner abandoned previous approaches. (EX1060, ¶335.)

4. Alleged skepticism

FaceTec’s single “skepticism” article merely contrasts its approach with others, calling it “a different tactic.” (POR, 21-22; EX2050, 1.) Additionally, Savvides, quoted in the article, noted “FaceTec’s method *makes sense*” and Mogull thought “FaceTec can *surely* get its technology to work.” (EX2050, 2-3.) The other statements FaceTec cites amount to, at most, a lack of enthusiasm. (EX1060, ¶¶336-340; *see BTG Int’l Ltd. v. Amneal Pharms. LLC*, 923 F.3d 1063, 1073 (Fed. Cir. 2019) (noting that a “lack of enthusiasm by a few is not equivalent to skepticism or failure of others[.]”).)

5. Alleged commercial success

FaceTec again cites its certifications. But such certifications are not indicators of *commercial* success, and the certifications were for ZoOm. As for its sales, FaceTec says the success was not due to “other customer-facing features.” (POR, 26.) This is a conspicuous qualification, as ZoOm has many *non*-customer facing features (*e.g.*, camera security, encryption, deletion of liveness data) that it

believes are critical to its success. (*See, e.g.*, EX1073, 10:3-4; EX1060, ¶¶341-346.)

In terms of licensing [REDACTED]

[REDACTED] EX2059, ¶50; [REDACTED]

[REDACTED] The iProov license is irrelevant, because FaceTec has not shown iProov copied FaceTec, as discussed above. (EX1060, ¶345.)

Lastly, FaceTec claims it “was not the market incumbent,” but, at the same time, touts its “3D liveness detection technology” as the “first of its kind” and “effectively created the market for secure software-based 3D liveness detection,” calling it a “disruptive technology and breakthrough product.” (POR, 23-24, 26; EX1060, ¶346.)

IX. CONCLUSION

For the foregoing reasons, and those in its Petition, Petitioner requests cancellation of the challenged claims.

IPR2025-00109

Patent No. 11,874,910

Dated: January 21, 2026

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Certification of Word Count (37 C.F.R. § 42.24)

I hereby certify that this PETITIONER’S REPLY TO PATENT OWNER RESPONSE has 6,569 words (as counted by the “Word Count” feature of the Microsoft Word™ word-processing system), exclusive of “a table of contents, a table of authorities, a listing of facts which are admitted, denied, or cannot be admitted or denied, a certificate of service or word count, or appendix of exhibits.” The Board authorized an additional 1,000 words for this reply per their email dated January 7, 2026.

Dated: January 21, 2026

/Jean Nguyen/
Jean Nguyen

Certificate of Service (37 C.F.R. § 42.6(e)(4))

I hereby certify that the attached PETITIONER'S REPLY TO PATENT OWNER RESPONSE was served on the below date via e-mail (by consent) to the following counsel of record for the Patent Owner:

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