UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC., INSTAGRAM, LLC, AND WHATSAPP INC.,
Petitioners,

v.

EYESMATCH LTD., MEMOMI LABS INC.,
Patent Owners.

Case IPR2022-00490
Patent 8,982,110

PATENT OWNERS EYESMATCH LTD., MEMOMI LABS INC.'S PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,982,110

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Cases

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Deeper, UAB v. Vexilar, Inc.,
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List of Patent Owner's Exhibits

Ex. No.	Description
2001	Declaration of Matthew D. Powers In Support of Patent Owners' Unopposed Motion for *Pro Hac Vice* Admission
2002	Declaration of William P. Nelson I In Support of Patent Owners' Unopposed Motion for *Pro Hac Vice* Admission
2003	Declaration of Natasha M. Saputo In Support of Patent Owners' Unopposed Motion for *Pro Hac Vice* Admission
2004	U.S. Patent No. 8,982,109
2005	Declaration of Dr. David Forsyth

Samsung/Google, EX1030, p. 4

I. INTRODUCTION

The Petition should be denied because Petitioners fail to demonstrate a reasonable likelihood of prevailing as to any of the challenged claims.

Each of the challenged claims, directly or via claim dependency, requires the limitation "wherein during mirror tracking mode the processor utilizes the angle of the images captured by the camera and applies parametric input for a mapping transformation that changes imaging perspective of the images captured by the camera" of Claim 1. Petitioners rely on a combination of references to meet this limitation but fail to show motivation to combine. Therefore, as a person of ordinary skill in the art would not be motivated to combine Petitioners' asserted references for this limitation, institution should be denied.

II. BACKGROUND

A. THE 110 PATENT

On March 17, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,982,110 (the "110 Patent"), entitled "Method for Image Transformation, Augmented Reality, and Telepresence," to Ofer Saban and Nissi Vilcovsky. EyesMatch is the owner of the remaining right, title, and interest in and to the 110 Patent, with the exclusive right to enforce the 110 Patent.

The field of endeavor of U.S. Patent No. 8,982,110 (the "110 Patent") is imaging and display systems, including digital mirror systems that emulate traditional mirrors and "situations where a natural appearance is preferable over

standard video image, such as in, e.g., video conferencing." (*See, e.g.,* Ex. 1001 at 1:43-51.) As the 110 Patent explains, a conventional mirror "is the common and most reliable tool" to evaluate one's appearance (Ex. 1001 (110 Patent) at 1:55-57) and while other techniques have emerged, they "are not convincing and are not yet accepted as a reliable image of the individual as if he was looking at himself in a conventional mirror. This is mainly because the image generated by a camera is very different from an image generated by a mirror." (*Id.* at 59-64.) The 110 Patent is directed to methods of modifying a stream of images of a user with adaptive transformation mapping so that the images appear to be captured from a different point of view than that of the camera's actual point of view, including by, for example, rotating, resizing, or varying image magnitude, additionally applying virtual effects to the user's image including generating different backgrounds, and transmitting the images across a network for display. (*See* Ex. 1001 (110 Patent) at Claims 1, 5, 6, 10, 11, 12, 16, and 17.) The 110 Patent claims and teaches, *inter alia*, an unconventional way to use cameras, computers, and display devices to modify a stream of images of a user such that the displayed images appear to be captured from a different point of view than that of the camera taking the images. As the 110 Patent explains, this transformation technique "can be used to create a reliable video conference when the user/users on the other side of the line can see the participant as if the participant were looking directly at them, rather than having an image from

the view-point of the camera. Alternately, transformation can be used to create an image as if a user were looking into the eyes of another user in order to provide a convincing, live experience." (Ex. 1001 (110 Patent) at 7:35-41.)

The 110 Patent includes 18 claims, one of which is an independent claim. (Ex. 1001 (110 Patent).) Petitioners challenge eight claims as unpatentable. Specifically, Ground 1 of the Petition asserts obviousness of claims 1, 5-6, and 10-11. Ground 2 of the Petition asserts obviousness of claim 12. And Ground 3 of the Petition asserts obviousness of claims 16-17. All the challenged claims require a novel combination of elements.

Independent Claim 1 claims a computerized method for operating a display system having a camera, a monitor, and a processor with steps comprising: (i) operating the camera to generate a stream of images of the user; (ii) operating the processor to detect the presence of the user in the stream of images; (iii) operating the processor to apply adaptive transformation mapping to the stream of images captured by the camera to generate modified images that appear to be captured from a different point of view of the camera's actual point of view; and, (iv) displaying the modified images on the monitor; (v) wherein the different point of view corresponds to an image taken from a different angle and a different distance than the actual images captured by the camera; and (vi) wherein during mirror tracking mode the processor utilizes the angle of the images captured by the camera and

applies parametric input for a mapping transformation that changes imaging perspective of the images captured by the camera. Claims 1, 5-6, 10-11, 12, and 16-17 all dependent directly or indirectly from Claim 1.

B. OVERVIEW OF THE REFERENCES

1. ROSENBERG

Rosenberg (Ex. 1003) discloses a "digital mirror system" which "emulates a traditional mirror by displaying real-time video imagery of a user who stands before it. (Ex. 1003 at Abstract.) The digital mirror system "include[s] a traditional mirror mode and a third person mirror mode." (Ex. 1003 at Abstract.) Rosenberg notes the "limitations" of traditional mirrors which can be "frustrating" such as inability to see a non-inverted representation and inability to see the user's appearance from behind. (Ex. 1003, ¶ 0003 ("Similarly, a standard wall mirror as used in a typical bathroom is useful for allowing a user to view himself of herself head-on, but does not enable a user to view himself from behind, or from the side. Such limitations are often frustrating, for a user, may wish to see what he or she looks like from behind and/or from each profile direction.")) Rosenberg's digital mirror system is intended to address the "substantial need for a significantly more versatile digital mirror system with a variety of unique and useful digital mirroring features and functions." (Ex. 1003, ¶ 0005.) Additionally, Rosenberg's mirror system is also "adapted to provide real-time captured images that approximate what a user would see when viewing an

ordinary mirror, with the addition of various other image processing features." (Ex. 1003, ¶ 0006.) For example, Rosenberg discloses various mechanical or fixed forms of gaze correction: "In more advance embodiments the camera is mounted within the screen area of the display 200 itself, approximately at eye-level of typical users, positioned behind the display surface and aimed through a transparent portion of the display 200." (Ex. 1003, ¶ 0061.) Additionally, "A camera may also be mounted at multiple elevations with respect to the display screen and can be selected between to provide for a variety of viewing angles—for example, an eye-level viewing angle that provides a highly realistic mirror replication image and a higher viewing angle that provides some view of the top of the head." (Ex. 1003, ¶ 0061.) "Such embodiments of the present invention often strive to achieve placement of the camera 402 Such that the image captured by the camera 402 is taken from a vantage point that is centered horizontally with respect to the display screen and at an elevation vertically that generally corresponds with a user's typical eye level. In this way the user is looking Straight at the camera 402 when standing centered before the digital mirror display screen." (Ex. 1003, ¶ 0075. *See also*, *id.*, ¶ 0028.) Other than inverting the images, which the 110 Patent identifies as insufficient by itself to convincingly emulate traditional mirrors (*see* Ex. 2004 (109 Patent) at 1:62-2:6, 2:23-33 (incorporated by reference into the 110 Patent at Ex. 1001 (110 Patent) at 1:23-39)), Rosenberg does not discuss performing other transformations on images

captured by the device. Petitioners concede as much: "Rosenberg does not provide details about scaling and other transformations (beyond flipping the image) to mimic a mirror reflection." (Pet. at 26.)

2. FRANCOIS

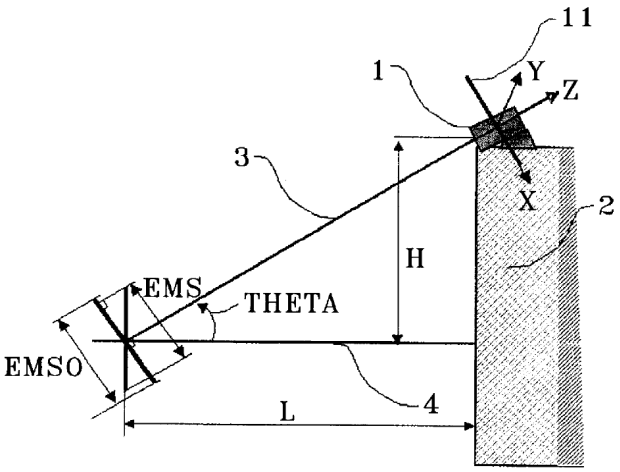
Francois (Ex. 1004) discloses "a handheld mirror simulation device" whose "continuous input video stream and tracker data is used to synthesize, in real-time, a continuous video stream displayed on the LCS screen. The synthesized video stream is a close approximation of what the user would see on the screen surface if it were a real mirror." (Ex. 1004 at Abstract.) Francois relies on 3-D geometry "synthesized and displayed in real-time" "to simulate a real mirror on a computer screen, images of the observed world, consistent with the viewer's position". (Ex. 1004 at 0021.) However, Francois admits that "Beyond the inherent inability of the model to account for depth in the scene, a major limitation is the impossibility to simulate eye contact. This is due to the physical separation between the capture device (camera) and the visualization device (screen). More elaborate modeling and processing is required to achieve this effect, e.g., with head modeling, tracking, and synthesis." (Ex. 1004 at 0024.)

3. JEON

Jeon (Ex. 1006) discloses "A method and apparatus for correcting a gaze of an image using a single camera, corrects an image so that a communication

familiarity can be enhanced by letting the eyes meet in a video communications system such as a video phone or video conference with a single camera." (Ex. 1006 at Abstract.) In Figure 5, Jeon depicts how gaze may deviate between the gaze directions of a camera and an object such as a user. (Ex. 1006 at Fig. 5, 2:41-43.) "In an embodiment of the present invention, the camera 1 used for Video communications is installed on the monitor 2 in the direction 3 of the camera 1 as shown in FIG. 5. The user being the object gazes at the center of the monitor 2 in the direction of a line 4 in order to watch the face of the other party displayed on the monitor 2." (Ex. 1006 at 3:6-11.) "The gaze deviation determiner 31 defines an angle between the optical axis 3 of the camera 1 and the gaze 4 of the user as a gaze deviation, and determines a gaze deviation value, that is, an angle THETA of Fig. 5." (Ex. 1006 at 3:12-15.)

FIG. 5



Jeon discloses no technique for image transformation beyond the specific techniques for gaze correction focused on elements of the user's face.

III. PERSON HAVING ORDINARY SKILL IN THE ART ("POSA")

Petitioners propose a POSA as of December 2012 as having "at least a bachelor's degree in electrical engineering or computer science, and two years of work experience related to image capture and processing, and would also have familiarity with 3-D graphics programming and/or computer vision." (Pet. at 5-6.) Petitioners concede that "A person could qualify with more formal education and less technical experience, or vice versa." (Pet. at 6.) Patent Owner applies Petitioners' proposed level of skill for purposes of this Preliminary Response and reserves the right to propose a different level of skill should the Board grant institution.

IV. CLAIM CONSTRUCTION

Petitioners and Patent Owner have completed claim construction briefing of certain terms in the pending district court litigation. Patent Owner does not believe that resolution of any claim construction issues is necessary at this time to conclude that Petitioners have not shown that the challenged claims are unpatentable. Patent Owner reserves the right to raise claim construction should the Board grant institution.

V. THE PETITION FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF PREVAILING IN ITS CHALLENGES TO ANY CLAIMS

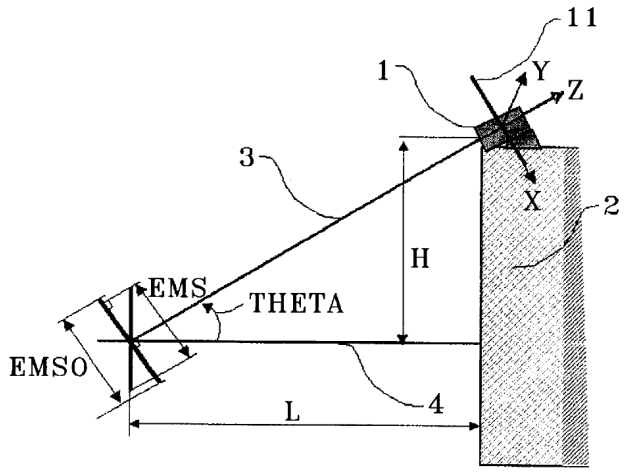
A. Ground 1: Petitioners Have Failed to Show a Motivation to Combine Rosenberg and Francois with Jeon as to Claim 1(f)

Petitioners have failed to demonstrate why a POSA would be motivated to combine Rosenberg with Jeon to meet the "wherein during mirror tracking mode the processor utilizes the angle of the images captured by the camera and applies parametric input for a mapping transformation that changes imaging perspective of the images captured by the camera" limitation of Claim 1.

Petitioners contend, in conclusory fashion, that "the processor in Rosenberg **would have** 'utilize[d] the angle of the images captured by the camera,' as claimed." (Pet. at 49.) As Petitioners have conceded, however, there is no disclosure in Rosenberg of "utiliz[ing] the angle of the images captured by the camera" for an image transformation. In fact, apart from a simple left-right inversion, Rosenberg neither discloses nor suggests any image transformation at all. (Pet. at 26. ("Rosenberg does not provide details about the scaling and other transformations (beyond flipping the image) to mimic a mirror reflection.").) As such, Petitioners rely solely on Jeon to supply "wherein during mirror tracking mode the processor utilizes the angle of the images captured by the camera and applies parametric input for a mapping transformation that changes imaging perspective of the images captured by the camera." (Pet. at 47-52.) (Ex. 2005 (Forsyth Decl.), ¶¶ 20-22.)

Petitioners contend that Jeon discloses a "gaze correction" technique that addresses the problem of eye contact when using videoconferencing applications because the camera in most videoconferencing systems are not at eye level of the user. (Pet. at 39.) Specifically, Petitioners point to a disclosure in Jeon concerning calculating the "gaze deviation value" by determining "an angle between the optical axis 3 of the camera 1 and the gaze 4 of the use as a gaze deviation, and determines a gaze deviation value, that is, an angle THETA of FIG. 5." (Ex. 1006 at 3:12-15.)

FIG. 5



Accordingly, Petitioners argue that a POSA "would have been motivated to include Jeon's gaze correction techniques to obtain the benefits, expressly recognized in Jeon, of 'greatly enhancing familiarity and realism . . . by enhancing eye-to-eye contact.'" (Pet. at 44 (quoting Ex. 1006 (Jeon) at 6:6-9).) Petitioners further contend that a POSA would have "appreciated that the Jeon techniques would have been equally useful to a mirror display system such as Rosenberg and Francois"

and that "Rosenberg contemplates the ability to transmit images and share them with others" "confirming that the videoconferencing context of Jeon presents no obstacle to the combination with Rosenberg and Francois." (Pet. at 44.) (Ex. 2005 (Forsyth Decl.), ¶¶ 23-24.)

Petitioners have failed to articulate a plausible motivation to combine these references. First, a POSA would not be motivated to look to Jeon to solve the problem of gaze correction because Rosenberg already discloses a solution to this purported problem. Rosenberg describes mounting a camera at eye-level to solve the same problem of gaze correction that Jeon solves with its gaze deviation value.

> FIG. 4 illustrates a digital mirror 405 according to at least one embodiment of the invention. Unlike the embodiment shown in FIG. 3 where the camera is mounted above the display screen, the embodiment shown in FIG. 4 has a camera 402 mounted within the screen area. Such embodiments may be preferred because they yield more realistic replications of traditional mirrors because the displayed image that is from a vantage that is straight ahead. ***Such embodiments of the present invention often strive to achieve placement of the camera 402 such that the image captured by the camera 402 is taken from a vantage point that is centered horizontally with respect to the display screen and at an elevation vertically that generally corresponds with a user's typical eye level. In this way the user is looking straight at the camera 402 when standing centered before the digital mirror display screen***. A number of different methods and/or technologies may be employed to achieve placement of a camera 402 such that the image captured is from this centrally located area upon the display screen. In some embodiments a small region of active screen area is removed to allow the camera 402 to capture an image through the screen surface. This region of removed screen will generally appear as a blacked-out portion of the mirror image as if a small black dot was cut into a real

> mirror to allow light to pass through it. With proper optics, this dead region of the mirror display surface can be very small—such as for example, a circular region of less than 1 millimeter in diameter. Various configurations of lenses, mirrors, and/or fiber optics can be used to enable flexibility in camera hardware positioning with respect to the small non-active portion of the screen.

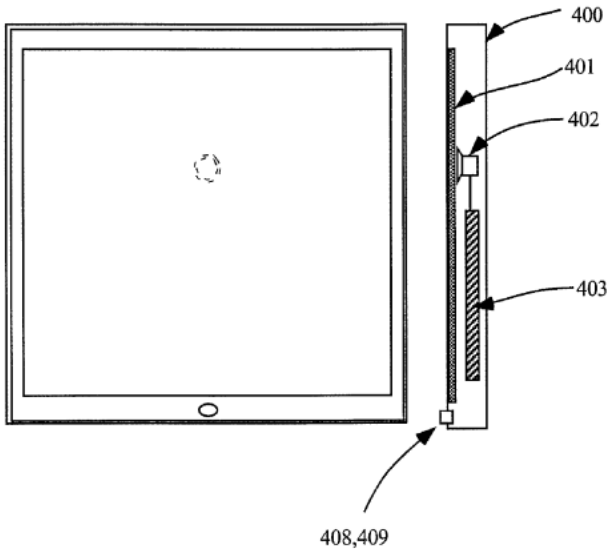


Fig. 4

(Ex. 1003, ¶ 0075.) Rosenberg clearly describes that the solution to having the user's gaze be at eye level is camera placement within the display. Rosenberg does not contemplate or suggest performing any calculations or measurements based on angles between the camera, user, and display as described in Jeon. (Ex. 2005 (Forsyth Decl.), ¶¶ 25-26.)

Rosenberg never identifies gaze correction as a problem remaining to be solved, or one to be addressed by any technique other than the specific camera

placement described in Figure 4 above. Nor does Rosenberg ever suggest any software transformation or manipulation of the image stream is necessary, or desirable, to properly emulate a mirror with a camera and a screen. In fact, as mentioned above, Petitioners admit that "Rosenberg does not provide details about the scaling and other transformations (beyond flipping the image) to mimic a mirror reflection." (Pet. at 26.) (Ex. 2005 (Forsyth Decl.), ¶ 27.)

As such, Rosenberg teaches away from software-based gaze correction because it describes using camera placement to ensure the eyes are correctly rendered (in the excerpt above), and it describes how to obtain the benefits of different viewpoints by using multiple cameras at different viewing positions and switching between them.

> By mounting the camera above the display 200, the user can capture an image from slightly above, thereby providing some view of the top of his or head. This is sometimes desirable. ***A camera may also be mounted at multiple elevations with respect to the display screen and can be selected between to provide for a variety of viewing angles***—for example, an eye-level viewing angle that provides a highly realistic mirror replication image and a higher viewing angle that provides some view of the top of the head.

(Ex. 1003, ¶ 0061.) Rosenberg also teaches that gaze need not be corrected if the camera is placed behind the display looking through a small transparent portion.

> In a preferred embodiment, the camera is positioned such that it is centered with respect to the screen area of the display. In basic embodiments the camera is mounted directly above the screen area of the display, generally near the center. This is non-ideal

> because it provides the user with a view of himself or herself from a somewhat unnatural perspective as compared to a traditional mirror. In more advanced embodiments the camera is mounted within the screen area of the display itself, approximately at eye-level of typical users, for example, positioned behind the display surface and aimed through a transparent portion of the display. Such embedded-camera embodiments provide a superior arrangement because they provide the user with a natural and accurate visual perspective of himself or herself as compared to a traditional mirror.

(Ex. 1003, ¶ 0027.) Therefore, a POSA would not be motivated to look at Jeon to solve the problem of gaze correction because (1) Rosenberg already has an embodiment that solves this problem, (2) Rosenberg teaches that different camera angles are desirable, despite the user's gaze not being at eye level, and a POSA could simply switch to the camera that showed the user's gaze at eye-level if this is desired. (Ex. 2005 (Forsyth Decl.), ¶¶ 28-30.)

Petitioners further contend that a POSA would be motivated to combine Rosenberg and Jeon because there is nothing in Rosenberg that would discourage the combination with Jeon. (Pet. at 44.) Not only is a "failure to discourage" not a sufficient motivation to combine, but Petitioners are also wrong in any event. As discussed above, Rosenberg teaches a complete solution to the gaze correction problem that requires no image manipulation, let alone image manipulation that would require utilizing the angle of the images. As such, Rosenberg teaches away from adding further image manipulations such as the gaze correction of Jeon. (Ex. 2005 (Forsyth Decl.), ¶ 31.)

Petitioners attempt to explain away Rosenberg's solution for gaze correction by dismissing it as an alternative embodiment, relying on *In re Fulton*, 381 F.3d 1195, 1201 (Fed. Cir. 2004). (Pet. at 45.) In *Fulton*, the Federal Circuit explained that "our case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention." *In re Fulton*, 381 F.3d at 1200. But, Petitioners have missed the point—nothing in Rosenberg suggests or teaches to look outside its disclosure, *e.g*. to Jeon, for solutions. The embodiment in Rosenberg to have the camera at eye level solves the problem of gaze correction by camera placement and does not suggest or describe any other possible method, and certainly not the method of Jeon. While acknowledging Rosenberg's solution, Petitioners contend that Rosenberg's embodiment "may still have benefitted from Jeon's gaze correction techniques" because in Rosenberg, the camera may not be "exactly" at eye level. (Pet. at 45.) Petitioners' argument is conclusory and unsupported by the disclosure in Rosenberg as described above. Rosenberg never suggests that its device needs to be at "exactly" eye level or that other techniques should be considered or used to ensure exact eye level. (Ex. 2005 (Forsyth Decl.), ¶ 32.)

Another reason why a POSA would not be motivated to combine Rosenberg with Jeon is that Jeon is focused on a specific transformation for gaze correction relating to the face, not a general solution for mirror emulation. In contrast,

Rosenberg is focused on the problem of providing whole-body display from a variety of perspectives: "Also, the integrated digital mirror of the present invention enables users to quickly and easily view not only their frontal image when looking in the digital mirror, but also profile images and rear image." (Ex. 1003, ¶ 0025; *see also* ¶¶ 0037, 0042.) For example, Figure 6 below, shows how Rosenberg's mirror display can allow a user to "easily view how he or she looks from behind, examining the back of his or her head or body." (Ex. 1003, ¶ 0086.)

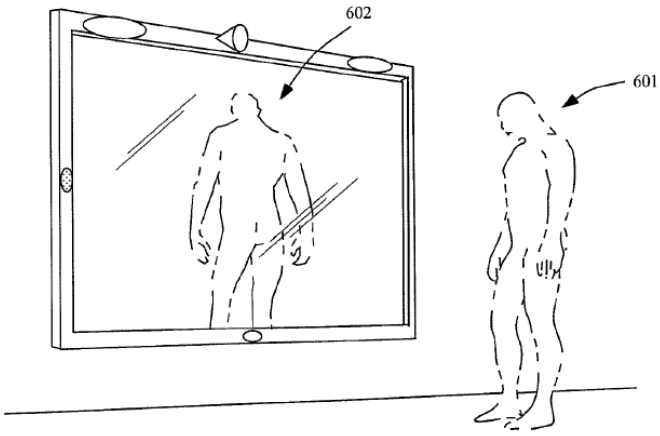


Fig. 6

Figure 8, below, shows another embodiment of Rosenberg's mirror display that "allows a user to view himself or herself from multiple perspectives upon the same screen, thereby getting a more holistic impression of his or her appearance." (Ex. 1003, ¶ 0093.) (Ex. 2005 (Forsyth Decl.), ¶¶ 33-34.)

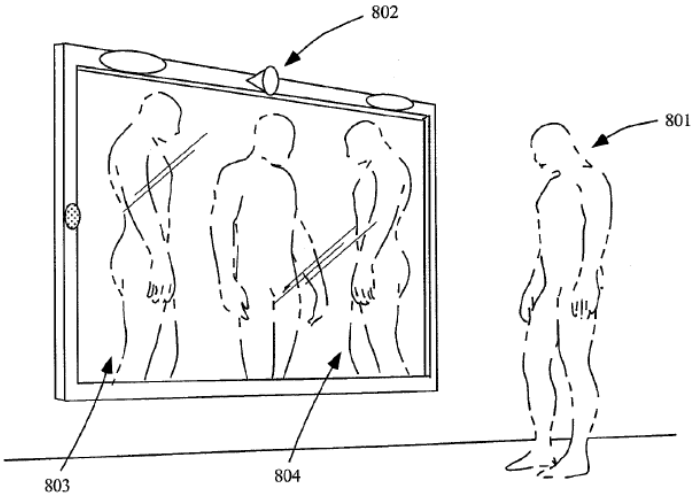


Fig. 8

In contrast, the image transformation described in Jeon is only focused on the face and not applicable to the full body images contemplated by Rosenberg. The transformation described in Jeon depends on z-axis information, that is, the distance a user is from the camera. But Jeon explains that because the image obtained by the camera is only a two-dimensional image, the distance in the z-axis must be approximated using a model of a face.

> Since the currently input image is rotated by the gaze deviation value THETA centered on the y axis, the value on the x axis is varied and the value on the y axis is same. In the above equation (3), a value of z(xnew, ynew) is a z value of a point on the object corresponding to the pixel located at (xnew, ynew). As shown in FIG. 8, this occurs owing to the difference of the height of the face in the z direction. ***Since the image photographed by the camera 1 is a two-dimensional image, the z axis information cannot be recoverable with only the image itself***. However, a simple model can be used as shown in FIGS. 8 and 9, in order to calculate the z axis information. In FIGS. 8 and 9, zN is a distance from the x axis to the nose when the highest point in the

> face in the z direction is modelled as the nose. ***That is, as shown in FIG. 9, the face is approximated into a triangular column. Accordingly, a z value at a certain coordinate (x, y) without actual information about a correct shape of the face itself can be expressed as the following equation (4)***.

(Ex. 1006 at 4:46-63.)

FIG. 8

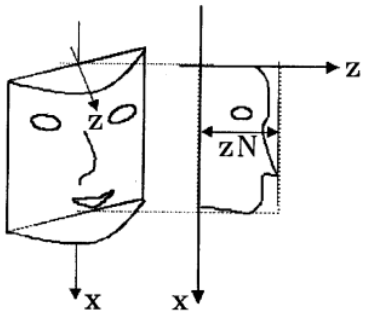
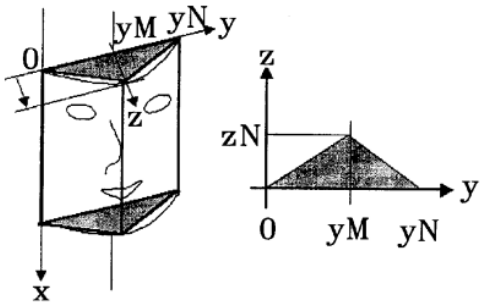


FIG. 9



The model used in Jeon is clearly very specific to the features of a face as it approximates the z-distances based on the nose distance. Because the feature of a nose is unique to a face, this calculation is not translatable to a full body image. There is nothing in Jeon that describes how this method could be used for an entire body in front of the camera. Therefore, a POSA would not have had a reasonable expectation of success from adding Jeon to Rosenberg because Jeon's image transformation technique for gaze correction would not work with respect to an image of an entire body. (Ex. 2005 (Forsyth Decl.), ¶¶ 35-36.)

Petitioners next contend that a POSA would be motivated to combine Francois with Jeon because both references purportedly recognize the same problem of

achieving realistic eye contact in image capture systems. (Pet. at 43.) Petitioners point to the following statement in Francois: "a major limitation is the impossibility to simulate eye contact. This is due to the physical separation between the capture device (camera) and the visualization device (screen). More elaborate modeling and processing is required to achieve this effect, e.g. with head modeling, tracking, and synthesis." (Ex. 1004 at 0024.) Petitioners contend that a POSA would have realized that Jeon's gaze correction techniques would solve the stated problem in Francois and would therefore have been motivated to include them. (Pet. at 44) (Ex. 2005 (Forsyth Decl.), ¶ 37.)

Petitioners' further reliance on Francois does nothing to address the deficiencies in their proposed motivation to combine the disclosures of Rosenberg and Francois with Jeon. First, a POSA would not be motivated to combine Francois ***and*** Jeon with Rosenberg because Francois' statement that simulating eye contact, *i.e.* gaze, is a "major limitation," is already solved by Rosenberg. As explained above, Rosenberg describes a solution to gaze correction by placing a camera in the mirror display at eye level. Because Rosenberg itself provides a solution to the "major limitation" identified by Francois, a POSA would not be motivated to look further to Jeon's gaze correction technique for a problem that has already been solved by Rosenberg's camera placement method.

Furthermore, a POSA would not be motivated to combine Rosenberg and Francois with Jeon because, as explained above, Jeon's gaze correction technique is not applicable to the full body image disclosed in Rosenberg. Petitioners' further addition of Francois does not change matters, since Francois discloses only a small "handheld mirror simulation device" that is intended to display only close views of the subject, *i.e.,* the subject's face. (*See, e.g.,* Ex. 1003, Fig. 1.) In contrast, Rosenberg explicitly concerns techniques for providing whole-body display from a variety of perspectives: "Also, the integrated digital mirror of the present invention enables users to quickly and easily view not only their frontal image when looking in the digital mirror, but also profile images and rear image." (Ex. 1003, ¶ 0025; *see also* ¶¶ 0037, 0042.) Since neither Francois nor Jeon provides a solution "for a mapping transformation that changes imaging perspective of the images captured by the camera" (as recited in Claim 1[f]) for the whole body, a POSA would find no suggestion or motivation in Rosenberg to combine its disclosure with Francois ***or*** Jeon. (Ex. 2005 (Forsyth Decl.),¶¶ 38-40.)

Accordingly, because Petitioners have failed to show a motivation to combine Rosenberg and Francois with Jeon, Petitioners have failed to meet their burden with respect to the "wherein during mirror tracking mode the processor utilizes the angle of the images captured by the camera and applies parametric input for a mapping

transformation that changes imaging perspective of the images captured by the camera" limitation of Claim 1.

B. Ground 2: Petitioners Fail to Show Obviousness of Claim 12 Over Rosenberg in View of Francois, Rosenthal, and Jeon, in Further View of Agamanolis

In Ground 2, Petitioners propose combining the references cited for Ground 1 with Agamanolis solely to address the video telepresence limitation of Claim 12. (Pet. at 61-66.) Petitioners rely on the grounds cited for Ground 1, Claim 1 as allegedly disclosing or suggesting all other claim elements. (*Id.*) Accordingly, Ground 2 fails for the reasons discussed in Section III.A. above.

C. Ground 3: Petitioners Fail to Show Obviousness of Claims 16-17 Over Rosenberg in View of Francois, Rosenthal, and Jeon, in Further View of Baron and Agamanolis

In Ground 3, Petitioners propose combining the references cited for Ground 1 with Baron and Agamanolis solely to address the "generate background segmentation, and replaces segments on the image by replacement segments" and "replacement segments comprise virtual background or background that was captured in a different setting" limitations of Claims 16-17. (Pet. at 67-74.) Petitioners rely on the grounds cited for Ground 1, Claim 1 as allegedly disclosing or suggesting all other claim elements. (*Id.*) Accordingly, Ground 3 fails for the reasons discussed in Section III.A. above

VI. CONCLUSION

None of Petitioners' grounds meet the institution standard. But even if the Board determined a claim or ground satisfied the standard, the vast majority of grounds fail, and thus instituting a trial on all claims and all grounds would not be an efficient use of the Board's resources. *See Chevron Oronite Co. LLC v. Infineum USA L.P.*, IPR2018-00923, No. 9 (Denying *Inter Partes* Review) (P.T.A.B. Nov. 7, 2018); *Deeper, UAB v. Vexilar, Inc.*, IPR2018-01310, No. 7 (Denying *Inter Partes* Review) (P.T.A.B. Jan. 24, 2019).

Dated: May 9, 2022

Respectfully submitted,

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CERTIFICATION OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(b)(1) and (d), the undersigned hereby certifies that the Patent Owner's Preliminary Response complies with the type-volume limitation 37 C.F.R. § 42.24(b)(1) permitting a response of up to 14,000 words because, exclusive of the exempted portions, the response contains 4,885 words, as identified by Microsoft Word's word-counting feature.

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CERTIFICATION OF SERVICE (37 C.F.R. §§ 42.6(e), 42.107)

The undersigned hereby certifies that the foregoing document, including its supporting evidence (Exhibits 2004-2005), was served in its entirety on May 9, 2022, upon the following parties via Electronic Mail:

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