UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC, SAMSUNG ELECTRONICS CO. LTD., SAMSUNG ELECTRONICS AMERICA, INC., and MICROSOFT CORPORATION
Petitioners,

v.

EYESMATCH LTD.,
Patent Owner.

Case No. IPR2024-00856[1]
U.S. Patent No. 8,982,109

PATENT OWNER EYESMATCH LTD.'S SUR-REPLY RE: PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,982,109

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[1] The petitioner in IPR2025-00297 has been joined with this proceeding.

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List of Patent Owner's Exhibits

Ex.No.	Description
2001	Declaration of Matthew D. Powers in Support of Patent Owner's Unopposed Motion for *Pro Hac Vice* Admission
2002	Declaration of William P. Nelson in Support of Patent Owner's Unopposed Motion for *Pro Hac Vice* Admission
2003	Declaration of Natasha M. Saputo in Support of Patent Owner's Unopposed Motion for *Pro Hac Vice* Admission
2004	Docket Navigator, E.D. Texas Time to Trial (Jan. 1, 2019-Aug. 13, 2024)
2005	Defendants' Invalidity Contentions and P.R. 3-3 and 3-4 Disclosures, and Exhibits A-00 through B-29; E.D. Texas Case No. 2:23-cv-00363-JRG-RSP
2006	Defendants' Unopposed Motion for Leave to Supplement Invalidity Contentions to Add Three Related Prior Art References, [Proposed] Order, and Exhibits 1-7; E.D. Texas Case No. 2:23-cv-00363-JRG-RSP
2007	Order Granting Motion for Leave to Supplement Invalidity Contentions to Add Three Related Prior Art References; E.D. Texas Case No. 2:23-cv-00363-JRG-RSP
2008	Claim Construction Order; E.D. Texas Case No. 2:23-cv-00363-JRG-RSP
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2011	Markman Hearing Transcript (December 6, 2024); E.D. Texas Case No. 2:23-cv-00363-JRG-RSP
2012	Deposition of Dr. Lina J. Karam (February 26, 2025)
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I. INTRODUCTION

A reader of Petitioners' Reply might conclude that Petitioners had nothing to do with the claim construction of "appears to mimic a reflection of a mirror" which results in the failure of its Petition to establish unpatentability of any claim. Petitioners call it "a magistrate's construction" (Reply at 1, 2, 3, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18), but that is wrong. It is ***Petitioners'*** construction, which it: a) vigorously advanced before the district court, and obtained; b) failed to timely disclose to the Board; and c) failed to contend in its Petition that, much less demonstrate how, the asserted Grounds would render the challenged claims obvious under that construction. That is why Petitioners should lose here: the intrinsic record, Petitioners' own arguments, the Board's prior decisions, and fundamental fairness require that Petitioners' construction should be adopted here, and the claims found not unpatentable. *See Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, No. IPR2024-00952, Paper 12 at 8-9 (P.T.A.B. Dec, 13, 2024) (designated informative) (particularly where Petitioners have emphasized in District Court that a construction would be case dispositive, Petitioners should at a minimum explain why inconsistent positions have been taken before the Board). *See also Hologic, Inc. v. Enzo Life Sciences, Inc.*, No. IPR2018-00019, Paper 17 at 9–10 (P.T.A.B. April 18, 2018) (denying institution "[b]ecause the Petition does not map the challenged claims, as Petitioner considers them to be correctly construed, to the asserted prior art.").

Petitioners' Reply attempts to remedy their failure to show unpatentability by advancing new arguments and positions that are both improper because they were not raised in the Petition, and wrong on their merits. In their new arguments and old, Petitioners have failed to show that any Grounds, alone or in combination, disclose a reversed image, roughly double the distance from the camera, and the same size regardless of user movement – requirements Petitioner Samsung vigorously argued in district court were requirements of limitation 1(c) of the independent claim from which all claims depend. With respect to limitation 1(h) and the "varying rate" term, Petitioners have failed to show that a POSITA would understand the asserted Grounds to teach this limitation.

II. CLAIM CONSTRUCTION

A. Petitioners' district court construction of "appears to mimic a reflection of a mirror" should be adopted

Petitioners' contention that the Board need not adopt Petitioners' own construction of "appears to mimic a reflection of a mirror" in limitation 1(c) seeks to have the Board determine validity of the challenged claims under a broad, plain meaning construction, while infringement is determined at the district court under a ***narrow*** construction that Petitioner Samsung vigorously advanced and obtained. Petitioners offer no credible reason why its narrow construction should not be adopted here.

Nowhere do Petitioners contend that the construction of "mimic a mirror" they sought and obtained in the district court is not the correct construction of the term. Petitioners state that Patent Owner opposed that construction (Reply at 7 n.4), which is true but of no consequence: Patent Owner recognizes that Samsung's construction has been adopted in the district court, and so should be adopted here under the governing claim construction standard and the Board's applicable rules and decisions. *See, e.g.*, *Google LLC v. Virentem Ventures, LLC*, No. IPR2019-01247, Paper 34 at 11 (P.T.A.B. Mar. 5, 2021) (rejecting patent owner's proposed construction in part because it would result in "construing the claims in a manner inconsistent with the District Court").

Petitioners never state that they no longer contend their narrow construction is the meaning a POSITA would give the term. How could they? Petitioner Samsung told the district court that Patent Owner's plain meaning construction of this term was too broad, and "far from what the inventors described as 'a convincing [] mirror experience' in the specification." Ex.2009 at 15. The specification requires no less here. *See also* Ex.2011 at 29:10-20 (Patent Owner argument: "EyesMatch has proposed a plain meaning construction that just means that the mimicking reflection of a mirror is -- appears to mimic an image that would have reflected from a mirror, while Samsung's construction, which the Court has adopted in the preliminary form, requires some very specific requirements in order to mimic a mirror. . . .") The record

is clear that Petitioners both agreed ***then***, and agree ***now,*** that the narrow construction Petitioner Samsung obtained in district court, is the correct one; they simply do not want it to be applied here. *See Hologic,* IPR2018-00019 at 6-7 (faulting Petitioners' proof because "Petition explains how the challenged claims would be unpatentable if they are given [a construction] that Petitioner considers to be erroneous."). That is why Petitioners provide only meritless argument suggesting that the Board "need not" adopt the same construction.

First, Petitioners deny that any construction for this term needs to be adopted, because "the art discloses every term under any reasonable construction" (Reply at 4). That is a *non sequitur*; Petitioner Samsung indisputably believed its narrow construction of this term, which requires a reversed image that appears at roughly double the distance to the user, and remains the same size regardless of the user's movement, was "reasonable" when it vigorously fought for and obtained that construction in district court. Ex.2008 at 19. As such, the question before the Board is whether Petitioners have established unpatentability under that construction. As discussed below, the clear answer is no: Petitioners have failed to show, either in the original petition, or in reply, that the asserted Grounds would disclose to a POSITA the specific requirements of its own construction.

Second, Petitioners contend they are free to "offer a construction for 'mirror mimicking' for the district court to consider with a ***different record*** after petition

filing."[2] Reply at 4. But there is no different record. The patent is the same, the claims are the same, and so are the specification disclosures relied upon by Petitioners to obtain a narrow construction. *See* (Ex.2009 at 14-18). And the legal standard is the same here and in the district court: claim terms are to be given "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *See Phillips* v. *AWH Corp.,* 415 F.3d 1303, 1312-14 (Fed. Cir. 2005) (en banc). The construction that Petitioners argued for under that standard in district court should be applied here.

None of the Board decisions relied on by Petitioners state otherwise. In *Samsung Elecs. Co., Ltd. v. Cellect, LLC*, No. IPR2020-00476, Paper 14 at 12-13 (P.T.A.B. July 31, 2020), the Board found that Petitioners did not violate 37 C.F.R. § 42.104(b)(3), which requires Petitioners to identify "how the challenged claim is to be construed," by proposing narrow claim constructions in district court that it did not propose in its petition. That has no relevance here, where the question is whether the Board, in assessing the grounds in an ***instituted Petition***, should apply a narrow claim construction that Petitioners obtained in district court, and which they still concur is the proper construction of the term. *See also Netflix, Inc. v. GoTV Streaming, LLC*, No. IPR2023-00757, Paper 18 at 8-9 (P.T.A.B. Dec. 21, 2023)

[2] Unless otherwise noted, all emphases have been added.

(granting institution despite Petitioner's inconsistent claim construction positions but noting that claim construction will need to be addressed); *Apple, Inc. v. Smith Interface Techs., LLC*, No. IPR2024-01089, Paper 7 at 9-10 (P.T.A.B. Jan. 17, 2025) (granting institution despite Petitioners' assertion in district court that claims were indefinite).

Third, Petitioners contend that their position here that no construction is required, and the term should be given its plain meaning, "is not inconsistent with Samsung's construction for 'mirror mimicking' in district court." Reply at 5. Of course they are inconsistent. The construction fought for in district court is not a "plain meaning" construction of "appears to mimic a reflection of a mirror." The plain meaning, as Patent Owner explained in district court, would be just what it says: that the displayed image looks like one that would have reflected from a mirror. Ex.2011 at 29:10-20. In contrast, Petitioner's construction in the district court imports from the specification two very specific requirements: the image must appear to be roughly double the distance to the user, and stay roughly the same size, regardless of the user's movement. As Patent Owner has explained, those specific requirements are nowhere disclosed in the asserted Grounds.

Fourth, Petitioners bizarrely assert that the "Board need not construe 'mirror mimicking' since the prior art expressly discloses mimicking a mirror." Reply at 6. Petitioners' tautological argument – there's no need to know what "mirror

mimicking" means because prior art discloses mirror mimicking – falsely assumes the conclusion that Petitioners have failed to prove. The Board needs to choose between constructions to know whether the asserted Grounds disclose mirror mimicking or not. Petitioners demonstrate the problem themselves by pointing to generic statements in Rosenberg regarding how its digital mirror "replicate[s] the performance of a standard household mirror," with "displayed sized and scaling such that it appears like a traditional life-size mirror image." *Id.* While those passages describe appearing "like" a traditional mirror, they simply do not disclose the specific requirements of Petitioners' district court construction. Accordingly, Petitioners' reliance on *Real Time Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019), which found the Board did not need to construe a term because the prior art disclosed every element of a dependent claim which set out the required elements of the term, is entirely misplaced.

Fifth, Petitioners contend that the "Board is not bound by a magistrate judge's construction," but is instead "free to consider that construction and make its own determination." Reply at 7-8. That is true, but here, Petitioners have provided no credible basis to adopt any construction other than the one Petitioners obtained in district court, and still believe to be correct. For its part, Patent Owner has explained the bases for the construction, as advanced by Petitioners in district court and adopted by the magistrate judge, and has stated it should be applied here.

Finally, Petitioners observe that judicial estoppel does not apply here, so there is nothing unfair about it advancing inconsistent claim constructions in two forums. Reply at 8. Judicial estoppel is not why Petitioners' district court construction should be adopted. Here, Petitioners urge the Board not to adopt any construction – a position that ***Petitioners themselves do not agree with*** **–** to assess validity, while infringement is tested under Petitioners' narrow construction. To paraphrase the Federal Circuit, this case falls squarely within the principle that a patent may not, like a nose of wax, be twisted one way to find invalidity and another to avoid infringement. *See CommScope Technologies LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1299 (Fed. Cir. 2021) ("a 'patent may not, like a nose of wax, be twisted one way to avoid anticipation and another to find infringement.'"). The Board's rules and decisions reflect this concern, for example in the Board's informative decision in *Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, No. IPR2024-00952, Paper 12 (P.T.A.B. Dec, 13, 2024), in which institution was denied where the Petition presented an analysis based on the plain and ordinary meaning of a key term, while Petitioner took the position in district court that the same limitation should be construed as a means-plus-function term. There, Petitioners' failure to provide a non-plain meaning for these "most significant" and "case…dispositive" terms, or at least to provide an alternate construction, meant that the Petition was deficient. The same considerations apply here. There is no meaningful dispute that Petitioner

Samsung will stake its non-infringement positions in district court on its narrow construction of "mirror mimicking"; the construction Samsung advocated for should be applied here to assess validity.[3]

B. "varying the rate"

Once again, Petitioners urge the Board not to adopt the claim construction Petitioner Samsung advanced in the district court. Reply at 8-9. It should be adopted, for the same reasons that "mimic a mirror" should.

[3] Petitioners' apparent argument regarding the timing of the claim construction order issued in the district court is a red herring. Petitioners had every opportunity to present their claim construction and evidence as to why it was disclosed by the challenged grounds, including by submitting a new Petition, or filing supplemental information within a month of institution under 37 C.F.R. § 42.123(a). Petitioners did not do so. The Consolidated Trial Practice Guide (Nov 2019) at 47 states that "Parties should submit a prior claim construction determination by a federal court or the ITC in an AIA proceeding as soon as that determination becomes available." Again, Petitioners did not do so.

III. PETITIONERS HAVE FAILED TO SHOW THAT ANY GROUNDS RENDER THE CHALLENGED CLAIMS UNPATENTABLE

A. "appears to mimic a reflection of a mirror"

1. Petitioners' Wholly New Argument Regarding Rosenberg and Nakazawa Fails to Render Obvious Limitation 1(c)

Petitioners' Reply, for the first time, attempts to show that the asserted Grounds render obvious limitation 1(c) under Petitioners' narrow district court construction of this term, including relying on a wholly new expert declaration. Petitioners failed to provide any such contention or evidence in the Petition, which should end the discussion. Patent Owner sought and received authorization from the Board to file a motion to strike these new arguments and evidence, and will do so according to the schedule ordered by the Board. Paper No. 31. But Petitioner's new arguments still fail to demonstrate unpatentability of the claims.

First, there can be no dispute that neither Rosenberg nor Nakazawa, either alone or in combination, actually discloses that the images they generate appear to be double the distance to the user, and that they maintain the same size regardless of user movement. Petitioners could not possibly contend otherwise; the Board will search in vain for any such disclosure. Instead, Petitioners now contend that a POSITA would understand the generic references in Rosenberg to appearing like a "standard household mirror" or a "traditional life-size mirror image" to disclose

these specific requirements.[4] Reply at 10-12. There is no support for this, other than the *ipse dixit* of Petitioners' expert.

Petitioners identify three paragraphs in Rosenberg to argue that a POSITA would understand Rosenberg to disclose these requirements. Reply at 10-12 (Rosenberg ¶¶[0027], [0038], [0077]). Petitioners have failed to show that any of these paragraphs, or anything else in Rosenberg, would be understood by a POSITA to disclose these specific requirements. Rosenberg describes something simpler and cruder, but it regards that crude version as "good enough" to mimic a mirror. Paragraph 27 teaches explicitly that Rosenberg*'s* "traditional mirror emulation mode" only inverts an image. Ex.1005 ¶[0027] ("In a basic mode of operation, referred to herein a ***traditional mirror emulation mode,*** the digital mirror is operative to replicate the performance of a standard household mirror. . . . ***This is achieved by streaming a left-right inverted representation***. . . ."). Rosenberg paragraph 38 adds that its system "responds in real time very much like a ***traditional mirror***" such that as a user "moves his arms about while brushing his or her hair," this is displayed on the screen. Ex.1005 ¶[0038]. But that discussion discloses real-time performance, not an image with the specific mirror-mimicking characteristics required under the construction.

[4] Petitioners point to nothing at all in Nakazawa to support this contention.

Rosenberg ¶77 also fails to teach a POSITA that Rosenberg's digital mirror generates an image that is double the distance to the user, and the same size regardless of movement. This paragraph states that a user is "given the visual impression that he or she is standing before a traditional wall mirror, ***viewing a traditional mirror image of himself or herself***." Ex.1005 ¶[0077]. However, Petitioners ignore the preceding sentence, in which Rosenberg again states that in its "***traditional mirror emulation mode***, the real-time video image is ***left-right inverted prior to display upon the screen."*** *Id.* While this paragraph also states that the image has a "displayed size and scaling such that it appears like a traditional life-size mirror image," *id.,* this again fails to disclose to a POSITA the specific scaling and sizing required to "mimic a mirror." The fact that ***some*** non-specific scaling has been performed would not teach a POSITA that Rosenberg has implemented a scaling approach that ensures both that the image appears at double the distance, and at the same size, as Dr. Forsyth has explained. Ex.2013, ¶440. Particularly in view of Rosenberg's teaching that it is undesirable to have the user's image appear at approximately double the distance to the camera - *see* Ex.1005 ¶[0039] (describing feature to "freeze" an image "for a user who wishes to change his or her distance and/or location with respect to the mirror to get a better view of his or her image, ***but NOT have the image change as the user moves***") – a POSITA would not have understood Rosenberg to address the difficult and more complex technical issue of

having the inverted image appear at roughly double the distance of the user to the camera and at the same size. Instead, a POSITA would regard Rosenberg's invention as affirmatively not including these detailed optical properties of a conventional mirror. Ex.2013, ¶441. *See also* Ex.2013, ¶¶103, 148, 196-197, 239, 240-242, 292-293, 337-338, 389-390, 436-439.

For the first time, Petitioner relies on purported background art to contend that, because the reflective mirror properties of a viewer's image appearing at approximately double the viewer's distance to the mirror and approximately the same size regardless of movement was known in the art, then a POSITA "would have understood that the *Rosenberg/Nakazawa* transformations" to emulate a traditional mirror will in fact produce an image with these specific characteristics. Reply at 10, 10-12. There is no proof of this; there is only the belated say-so of Petitioners' expert. Nakazawa makes no mention of mimicking a traditional mirror at all, let alone these specific image properties; it describes correcting an image of a face to account for distortions when the line of sight between the user and a camera is "unnatural." Ex.1007, ¶¶0005-0007. While Nakazawa discusses image magnification, that magnification is in response to "user input" (*id.* ¶¶0036-0038), and never describes producing an image with the qualities required by Petitioners' construction – not even accidently. As for Rosenberg, not only does Rosenberg never disclose that its "traditional mirror" produces an image with these characteristics; as

discussed above, it both limits its "traditional mirror" emulation to simple inversion and actively ***discourages*** generating an image at double the distance to the user. Moreover, nothing about the combination of these two deficient references can remedy the same defect in each – the lack of any disclosure of manipulating images to produce the specific visual effect Petitioners have insisted is required.

Moreover, Petitioners' assertion that "Dr. Forsyth confirmed Rosenberg/Nakazawa's scaling and distortion-correction transformations are those recited in the 109 patent for achieving double-distance/same-size features" (Reply at 12) mischaracterizes Dr. Forsyth's testimony. Dr. Forsyth repeatedly testified that Rosenberg teaches away from the image having a fixed size. Ex.1046 at 144:20-145:4; 156:17-22; 157:2-5, 19-21; 158:5-9, 18-21.

To the extent that Petitioners now contend that the "background art" shows that a POSITA would know they ***could*** implement in Rosenberg/Nakazawa a system that produced images with these specific qualities, that is both improper new argument and wrong in any event. First, as demonstrated in the POR, Petitioners and their expert never contended in the Petition that the background knowledge of a POSITA would supply the knowledge necessary to modify the image transformations of Rosenberg and Nakazawa to generate an image "where the user sees their reversed reflection appearing at roughly double the distance from the camera and the reflection maintains roughly the same size regardless of the user

movement." Response at 23. Instead, Samsung argued, without more, that "*Rosenberg* and *Nakazawa* render obvious this limitation. Decl. ¶¶124-129."[5] Pet. at 21. This new argument is improper and should be disregarded. 37 C.F.R. § 42.22(a)(2); 37 C.F.R. § 42.23(b). Petitioners' reliance on *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1381 (Fed. Cir. 2023) to make this argument is misplaced. *Axonics* specifically limits its holding, and does not authorize a petitioner to rely on new prior art, such as art supplying the missing purported "background knowledge" of a POSITA, to teach a claim limitation: "We have held that a petitioner may not in reply rely on new prior art to teach a claim limitation." *Id.* at 1383. Petitioners never before relied on *Straka, Francois,* or any other art to show these properties of a mirror; they may not do so now.

Petitioners are wrong in any event. As Dr. Forsyth explained in deposition, it would not have been obvious to a POSITA that the known mirror properties were *important enough* to a digital mirror experience to implement.

Q: Is it your opinion that providing double the distance in same

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[5] Petitioners' reliance on *Randall Mfg. v. Rea,* 733 F.3d 1355, 1362 (Fed. Cir. 2013) is misplaced. There, the Petitioners had always relied on the background knowledge of a POSITA to demonstrate why a POSITA would find it obvious to modify the prior art to achieve the invention. Not so here.

> size properties of a conventional mirror more difficult and more complex than flipping the image?
>
> A: Yes.
>
> Q: In your view, a POSITA would not know how to implement these known conventional mirror properties with known transformation techniques?
>
> A: I think my view is stated that a POSITA would not have realized it was important. And the support for that view in the fact that Rosenberg doesn't do it, nor do a number of other people.
>
> Q: So in your opinion, a POSITA would not have realized those features are important?
>
> A: In my opinion, a POSITA -- a POSITA would not have realized those features were important. And a number of documents I've looked at here describe mirror emulation without having those features, suggesting that authors at the time did not realize that it was important either.

Ex.1046 at 144:15-145:12.

Petitioners' "background art" fails to establish that it would have occurred to a POSITA that implementing these more technically difficult properties were necessary or worthwhile for a digital mirror.

a. Patent Owner's Description of Rosenberg Does Not Contradict Rosenberg's Teachings

Petitioners contend that Patent Owner has misrepresented Rosenberg's teachings (Reply at 14-17), but that is not so. It is ***Petitioners*** that impermissibly read additional disclosures into Rosenberg that are not only not disclosed but are also contradictory to what Rosenberg does disclose. As discussed above, Rosenberg explicitly discloses multiple times that it regards emulating a traditional mirror as simple left-right inversion – nothing more. *See* Ex.1005 ¶¶[0027], [0077].

Petitioners insist that Rosenberg's express statements disfavoring implementation of images appearing at roughly double the distance and roughly the same size in "mirror image-freeze" mode does not detract from "traditional mirror emulation mode". Reply at 16-17. Not so. As Dr. Forsyth has explained, a POSITA would regard these discouraging statements as teaching away from implementing them and would especially be regarded as doing so given that "traditional mirror emulation mode" only discloses image inversion. *See e.g.*, Ex.2013, ¶¶436-441.

2. Petitioners Have Failed to Show Motivation to Combine Rosenberg with Nakazawa to Meet "it appears to mimic a reflection of a mirror"

Petitioners argue it would have been obvious to combine Rosenberg with Nakazawa to meet "it appears to mimic a reflection of a mirror" under Petitioners' district court construction because one embodiment in Rosenberg, in which a camera

is placed above the screen, would have had a projection distortion. This lacks merit for at least three reasons.

First, Rosenberg discloses that this projection distortion may be preferred. "This raised vantage point is sometimes advantageous, giving users an increased view of the top of their head, an area that is often the focus of hair brushing." Ex.1005, ¶[0027]. As Rosenberg teaches, where such a vantage point is not desired, any distortion issues are solved by placing the camera behind the mirror – thus teaching away from image manipulation. Ex.1005, ¶¶[0028]-[0029], Ex.2013, ¶¶436-441. Second, Nakazawa's distortion correction concerns distortion in an image, not its apparent size or distance. Third, regardless of what a POSITA understood about the optical properties of conventional mirrors, Rosenberg is explicit that it regards emulating a "traditional mirror" as simple inversion. And because nothing in Nakazawa relates to implementation of additional optical properties of a conventional mirror, *i.e.,* roughly double the distance and roughly the same size, there would be no motivation to combine Rosenberg and Nakazawa to achieve "it appears to mimic a reflection of a mirror" as construed in the district court.

B. "varying rate at which one or more non-ordered steps are performed on the series of images according to distance"

1. Neither Rosenberg nor Nakazawa Render Limitation 1(h) Obvious

Nothing in the Reply fixes Petitioners' failure to show that Rosenberg and Nakazawa, alone or in combination, render limitation 1(h) obvious.

a. Rosenberg Does Not Disclose "varying rate" as Construed by the District Court

At bottom, Petitioners' obviousness argument amounts to the contention that Rosenberg's disclosure of switching on or switching off its mirror emulation mode based on user proximity discloses "varying rate at which the non-ordered steps" – steps comprising obtaining an image, flipping it, applying a transformation mapping, resizing it, and displaying – are performed according to the distance. Reply at 8. As Patent Owner has explained, however, Rosenberg's mirror emulation mode (in which these steps are being performed) and its picture frame mode (in which they are not being performed at all) are distinct modes of operation, not steps in a process. Ex.2013, ¶¶457-458. Moreover, Rosenberg discloses the proximity to the camera only with respect to turning on or off the mirror display functionality – not the specific modes or the functionalities within those modes. Ex.1005, ¶¶[0025], [0032], [0033], [0056], [0069], [0071], [0072], [0114]; Ex.2013, ¶¶455-456. Petitioners' theory that a POSITA would understand the transition between these modes as varying the rate at which the steps are performed proves too much. Under Petitioners'

distorted view, any system that had a power button on the top could disclose the limitation even if the performance of the steps of the claim were invariant when the system was in operation. When the system is turned off, the steps are not being performed. When a user gets close enough to touch the power button, the steps are performed at an invariant rate. Under Petitioners' theory, that would "vary the rate" at which the steps are performed. That is not what a POSITA would understand, as Dr. Forsyth has explained. *See, e.g.*, Ex.2013, ¶¶454-458.

b. Petitioners Fail to Show It Would Have Been Obvious to Combine Rosenberg and Nakazawa

Petitioners' assertion that Patent Owner does not explain why a POSITA would not have been motivated to combine Rosenberg and Nakazawa to meet "varying rate" of limitation 1(h) is simply wrong. Reply at 20. As Patent Owner explained, neither Rosenberg nor Nakazawa even suggests the varying required by this limitation. Consequently, a combination of these references cannot meet this limitation and a POSITA would have no motivation to combine them to do something that the combination could not achieve.

2. Rosenberg, Nakazawa, and Hatanaka Do Not Render Limitation 1(h) Obvious

a. Rosenberg, Nakazawa, and Hatanaka Do Not Disclosure "varying rate"

Petitioners do not dispute that Hatanaka is silent as to varying the ***rate*** of performing image processing ***steps***. Petitioners instead contend a reference is used

for all it teaches, such as Hatanaka's changes to resolution or frame rate. Reply at 20. But that does nothing to address the undisputed fact that Hatanaka is related to an entirely different technical concept than either Rosenberg, Nakazawa, or the 109 Patent. As Dr. Forsyth explained, it would not have been obvious to a POSITA to make the leap from Hatanaka's disclosure relating to energy conservation and throughput to modifying the rate at which a set of image transformation steps are applied to a series of captured images. Ex.2013, ¶488. Furthermore, Petitioners have still failed to offer any explanation as to why a POSITA would find it obvious in view of Hatanaka to vary the rate at which Rosenberg's technically different type of "image processing" steps occur, or why a POSITA would expect it to be functional or desirable. And Dr. Forsyth has opined that it would not be. Ex.2013, ¶489.

Additionally, limitation 1(h) recites "varying rate at which one or more non-ordered steps are performed on the series of images according to distance". The non-ordered steps are image processing steps. Power conservation is not a concern of the 109 Patent. Rather, it concerns providing a convincing mirror experience. As such, a POSITA would not have been motivated to combine Rosenberg, Nakazawa, and Hatanaka to vary the rate of image-processing steps to conserve power because that would not further the goal of the 109 Patent to provide a convincing mirror experience.

b. Petitioners Fail to Show Motivation to Combine Rosenberg, Nakazawa, and Hatanaka

Petitioners assert that Hatanaka must be viewed broadly and need not be a perfectly fitting "puzzle element" in order for there be motivation to combine. Reply at 22-23. But even the cases Petitioners rely on for this argument require that the claimed elements must be present in the combination. *Gen Elec. CO. v. Raytheon Techs. Corp.*, 983 F.3d 1334, 1352 (Fed. Cir. 2020) ("But the law has always evaluated the motivation to combine elements based on the combination of prior art *references* that together disclose all of the elements of the invention.") (emphasis in original). That is not the case here. Hatanaka's varying encoding would not be understood by a POSITA to be varying a rate of steps as disclosed in the 109 Patent. That element is not even present and cannot be regarding as combining elements and changing their respective functions as in *ClassCo, Inc. v. Apple, Inc.,* 838 F.3d 1214, 1219 (Fed. Cir. 2016). Finally, varying encoding based on distance to conserve throughput energy (Hatanaka) serves a fundamentally different technological purpose than transforming a user's image that is being viewed by a user (Rosenberg and Nakazawa). Ex.2013, ¶¶495-498.

3. Rosenberg, Nakazawa, and Tripathi Do Not Disclose Limitation 1(h)

a. Tripathi Does Not Suggest Varying the Rate of Image Processing According to Distance

It is undisputed that Tripathi does not disclose varying its frame rate based on distance. Tripathi's frame rate may be adjusted based on (1) type of display content to be displayed (e.g., static or dynamic); (2) user-input signals (e.g., swipe, pinch, tap); (3) device power supply status; (4) other aspects of device operation. See, e.g., Ex.1040, Abstract, 1:52-59, 5:42-51, 5:58-6:3, 6:29-39. Instead, Petitioners make the nonsensical contention that a POSITA would understand that user distance affects real-time video image content or power state. Reply at 24. That is meritless. Petitioners do not even attempt to explain why Tripathi would raise considerations of a user's distance, let alone adjusting the rate of steps in transforming the user's image based on distance when considering this combination of references.

b. Petitioners Fail to Show that it Would Have Been Obvious to Combine Rosenberg, Nakazawa, and Tripathi

As Patent Owner has explained, as none of Rosenberg, Nakazawa, and Tripathi disclose "varying rate," a POSITA would not be motivated to combine them to meet the "varying rate" requirement of the 109 Patent. And even assuming a POSITA attempted to combine these references, the combination would not disclose it. Ex.2013, ¶¶526-535.

Technical differences and differing objectives render such a combination non-obvious in any event. Tripathi's power consumption reduction occurs while the device is in use. Ex.1040 at 6:10-12. This is in contrast to Rosenberg's approach which reduces power consumption when the user is not present. Ex.1005, ¶¶[0025], [0032], [0033], [0069], [0070], [0071], [0072]. That is no surprise. Rosenberg (and Nakazawa) are directed to providing a visual depiction of a user who is looking at the display – a situation in which a POSITA would have understood reduction of power using Tripathi's frame rate reduction to be undesirable. A POSITA would recognize that this is the reason why Rosenberg's disclosure of reducing power consumption is only for when the user is absent. Ex.2013, ¶531.

C. Petitioners Fail to Show Unpatentability of the Dependent Claims

Petitioners fail to demonstrate unpatentability of Claim 1 under any Ground. And none of Grounds 4-25 (which rely on Grounds 1-3 for Claim 1) can establish the unpatentability of any dependent claim.

IV. PETITIONERS' ATTACKS ON DR. FORSYTH'S OPINIONS SHOULD BE DISREGARDED

None of Petitioners' fly-by attacks on Dr. Forsyth have merit. First, there is no issue with Dr. Forsyth's application of Petitioners' own claim construction to his analysis. Dr. Forsyth applied the District Court's constructions for the relevant terms of the 109 Patent. Ex.2013, ¶¶25-28, 144, 165, 192, 238, 290, 337, 385, 506; Ex.1046 at 74:7-75:6, 76:8-77:5, 77:13-78:18, 78:22-80:4, 83:21-84:7, 85:6-18, 86:22-88:4.

And the fact that Dr. Forsyth applied the District Court's constructions for these terms does not negate his application of the agreed-upon POSITA skill level with respect to his opinions regarding the entirety of the references and Petitioners' proposed combinations. Ex.2013, ¶¶17-28, 34-59, 62-63; Ex.1046 at 68:1-69:8.

Next, Petitioners' unhappiness with Dr. Forsyth's discussions of a pinhole camera has no merit, given that nearly all modern cameras are versions of a pinhole camera and share the optical properties that Dr. Forsyth discussed in his declaration and testified to in his deposition. Ex.2013, ¶¶72-74; Ex.1046 at 116:20-117:1.

Petitioners' remaining attacks on Dr. Forsyth's opinions appear to be based on the fact that he disagreed with Petitioner's assertions and provide no basis to disregard his opinions.

V. CONCLUSION

None of Petitioners' Grounds establish the unpatentability the challenged claims.

Dated: July 10, 2025

Respectfully submitted.

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CERTIFICATION OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(c)(4) and (d), the undersigned hereby certifies that the Patent Owner's Sur-Reply complies with the type-volume limitation 37 C.F.R. § 42.24(c)(4) permitting a sur-reply of up to 5,600 words because, exclusive of the exempted portions, the sur-reply contains 5,594 words, as identified by Microsoft Word's word-counting feature.

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CERTIFICATION OF SERVICE (37 C.F.R. §§ 42.6(e), 42.105(a))

The undersigned hereby certifies that on July 10, 2025, copies of the foregoing were served via Electronic Mail to the following:

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