

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MAGIC LEAP, INC.
Petitioner,

v.

PERCEPT TECHNOLOGIES INC.
Patent Owner.

Patent No. 9,010,929

Inter Partes Review No. IPR2023-00494

PETITIONER'S REPLY TO PATENT OWNER RESPONSE

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Petitioner’s Exhibit List for *Inter Partes* Review of U.S. Patent No. 9,010,929

Exhibit Description	Exhibit #
U.S. Patent No. 9,010,929 to Lewis (“the ’929 patent”)	EX-1001
Prosecution History of U.S. Patent No. 9,010,929	EX-1002
Declaration of Dr. Joseph J. LaViola Jr. in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 9,010,929	EX-1003
<i>Curriculum Vitae</i> and Litigation History for Dr. Joseph J. LaViola Jr.	EX-1004
Canadian Patent Application No. CA 2,362,895 to Mann (“Mann ’895”)	EX-1005
U.S. Patent Application Publication No. 2005/0281440A1 to Perner (“Perner”)	EX-1006
U.S. Patent No. 7,278,734 to Jannard (“Jannard”)	EX-1007
Patent Owner’s Opening Claim Construction brief in co-pending litigation No. 1:22-cv-0025-RGA	EX-1008
Petitioner’s Answering Claim Construction brief in co-pending litigation No. 1:22-cv-0025-RGA	EX-1009
Patent Owner’s Reply Claim Construction brief in co-pending litigation No. 1:22-cv-0025-RGA	EX-1010
Petitioner’s Sur-Reply Claim Construction brief in co-pending litigation No. 1:22-cv-0025-RGA	EX-1011
Return of Service in co-pending litigation No. 1:22-cv-0025-RGA	EX-1012
Affidavit of Gary Travis	EX-1013
Excerpts from ANDREW S. TANENBAUM, COMPUTER NETWORKS (Prentice-Hall, Inc. 4th ed. 2002)	EX-1014

Exhibit Description	Exhibit #
Claim Construction Order in co-pending litigation No. 1:22-cv-0025-RGA	EX-1015
Supplemental Declaration of Dr. Joseph J. LaViola Jr. in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 9,010,929	EX-1016
Excerpts from WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE, UNABRIDGED (Merriam-Webster Inc. 2002)	EX-1017
Excerpts from THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (Houghton Mifflin Company 4th ed. 2006)	EX-1018

**Petitioner’s Exhibits 1001 - 1015 were previously filed and are listed again here based on 37 C.F.R. § 42.63.*

***Petitioner’s Exhibits 1016 - 1018 are newly filed.*

Petitioner Magic Leap, Inc. (“Magic Leap” or “Petitioner”) provides this Reply under 37 C.F.R. § 42.23 to the Patent Owner Response filed on October 25, 2023 (Paper No. 12; “Response”). With this Reply and its Petition filed on January 20, 2023 (Paper No. 2, “Petition”), Petitioner requests cancellation of claims 1-6, 8, 11, 17, and 22 of U.S. Patent No. 9,010,929 (“the ’929 patent”; Ex. 1001).¹

I. INTRODUCTION

Magic Leap’s Petition and the accompanying declaration (EX-1003) of its expert, Dr. LaViola, stand unrebutted by any documentary evidence, expert declaration, or cross-examination testimony. Instead, Patent Owner responds to the Petition only with unsupported attorney argument, bereft of any record evidence. Under Federal Circuit law, such unsworn attorney argument is insufficient to rebut a petition where, as here, the Petition is supported by expert testimony. (*See Wasica Fin. GmbH v. Cont’l Auto. Sys.*, 853 F.3d 1272 (Fed. Cir. 2017) (holding that “a party’s ‘unsworn attorney argument . . . is not evidence’ and thus cannot rebut record evidence.”).) Moreover, Patent Owner’s arguments fail to

¹ Claims 7, 9, 10, and 15 were challenged in the Petition, but have since been disclaimed by the Patent Owner. (*See* EX-2002.)

discredit any grounds raised in the Petition, as explained herein and in the accompanying supplemental declaration of Dr. LaViola (EX-1016).

Except for one limitation common to all challenged claims—“the eye sensor activating the circuitry responsive to eye motion of a user” (the “eye sensor limitation”)— Patent Owner does not dispute that the prior art meets the limitations of the challenged claims. (*See, e.g.*, Response at 11, 15, 22.) Nor does Patent Owner generally dispute the Petition’s explanation of how the combination of prior art references Mann ’895 and Perner would use an eye sensor to activate a sight license for a licensed user. Instead, Patent Owner’s position is that the combined system does not meet the eye sensor limitation when that limitation—specifically, the phrase “responsive to eye motion of a user”—is given narrow, new and incorrect interpretations put forth by Patent Owner. (Response at 15-22.)

In the Decision on Institution, the Board previously rejected Patent Owner’s attempt to insert unwarranted new limitations into the eye sensor limitation. (Paper No. 10 at 14-15, 24 (“DI”).) Patent Owner’s renewed attempt should be rejected again: first, it improperly sidesteps the claim construction process under the guise of clarifying the plain and ordinary meaning of “responsive to”; and, second, Patent Owner offers no evidence whatsoever to support this self-serving version of the claims. But even if the Board were to adopt Patent Owner’s new definitions,

the remaining challenged claims are still rendered unpatentable by the combination of Mann '895 and Perner, as explained in the Petition and further herein.

II. CLAIM CONSTRUCTION

A. The Board Should Again Apply the Plain And Ordinary Meaning To The Eye Sensor Limitation

In this proceeding, Patent Owner states, and Petitioner does not dispute, that “the claims should be construed consistent with their plain and ordinary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.” (Response at 3 (citing *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed Cir. 2012) (internal citations omitted).) The plain and ordinary meaning of the claims applies because, as Patent Owner acknowledged in its Preliminary Response, the patentee did not provide any special meaning for the claim terms. (Paper No. 9 at 5 (“Preliminary Response”).) (*Ancora Technologies Inc. v. Apple Inc.*, 744 F.3d 732, 734 (Fed. Cir. 2014) (“A claim term should be given its ordinary meaning in the pertinent context, unless the patentee has made clear its adoption of a different definition or otherwise disclaimed that meaning.”); *see also CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (identifying a “heavy presumption” that a claim term should be given its plain and ordinary meaning).) Further, the Board need not construe terms that are not in controversy such as where the parties agree on applying plain and ordinary meaning to the terms. (*Nidec Motor Corp. v.*

Zhongshan Broad Ocean Motor Co. Ltd., 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *VividTechs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).)

With respect to the eye sensor limitation, the Board recognized that the Court in the co-pending litigation had adopted the “plain and ordinary meaning” for the limitation as urged by Patent Owner. (DI at 15; EX-1015 at 1.) And the Board noted that the “record does not present any claim construction disputes” and did not “discern any need” to determine an explicit construction for the eye sensor limitation in considering Magic Leap’s unpatentability challenge. (*Id.*) Because giving the eye sensor limitation its plain and ordinary meaning is not in controversy, the Board should again decline to provide an explicit construction for the limitation in this proceeding. (*See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (citing *VividTechs., Inc.* at 803).) The Board was able to resolve the decision on institution without an explicit construction and, given that Patent Owner has not provided any rebuttal evidence, the Board can reach the same conclusion in its Final Written Decision without an explicit construction. Moreover, as set forth in the Petition, the claims are unpatentable under any reasonable interpretation of the claims. (Petition at 4.)

B. The Board Should Reject Patent Owner's Attempts To Redefine The Plain And Ordinary Meaning Of The Eye Sensor Limitation

Patent Owner accuses the Board of committing legal error by “relying on a claim construction” in applying the eye sensor limitation to the prior art.

(Response at 5-6.) Patent Owner then urges the Board to “adopt an explicit construction” for the eye sensor limitation “in order not to repeat the error.”

(Response at 7.) However, Patent Owner concedes, in the same Response, that “the claims should be construed consistent with their plain and ordinary meaning.”

(Response at 3.) As best understood by Magic Leap, Patent Owner asks the Board to nominally construe the eye sensor limitation according to its plain and ordinary meaning; but to then revise that plain and ordinary meaning according to new definitions supplied by Patent Owner. (*See* Response at 8 (asking the Board to adopt a *particular* plain and ordinary construction of the eye sensor limitation).)

The Board should decline Patent Owner's invitation.

First, the Board did not commit legal error by applying the plain and ordinary meaning of the eye sensor limitation to the prior art references of the Petition. (*See* Response at 5-6; DI at 23-24.) To the contrary, this is exactly what the Board was *required* to do, having declined to construe the eye sensor limitation. (*Vitronics* at 1582.) No course correction is required.

Second, Patent Owner cannot (and makes no attempt to) show that its redefinition would pass muster under the controlling *Phillips v. AWH* standard.

(*Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); 83 FR 51340.) To the contrary, Patent Owner explains that the eye sensor limitation is “***readily understandable and does not require further interpretation***”; the patentee “***did not provide the term any special meaning***”; and “***there is no clear reason to depart from the plain and ordinary meaning of this term.***” (Response at 3; Preliminary Response at 5-6 (citing *Phillips* at 1314; *Ancora Techs.* At 734).)² Moreover, in the co-pending litigation, the Court construed the eye sensor limitation as plain and ordinary meaning under the *Phillips* standard after being urged by Patent Owner to do so. (EX-1008 at 6; Preliminary Response at 5.) Given Patent Owner’s statements in this proceeding and its position in the co-pending litigation, any construction other than plain and ordinary meaning is inappropriate. (*Phillips* at 1312-14.)

Third, Patent Owner offers no evidentiary support for its position on what constitutes the plain and ordinary meaning. The Federal Circuit has stated that “the ‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan after reading the entire patent.” (*Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1358 (Fed. Cir. 2017).) Patent Owner offers no documentary evidence, expert testimony, or any other evidentiary support for its speculation as to what the plain and ordinary meaning is. Nor does Patent Owner attempt to establish what that

² Any emphasis is added, unless otherwise stated.

meaning would be to the *ordinary artisan* after reading the entire patent.

(Response at 8.) The Board should afford no weight to unsourced attorney argument that does not track the correct legal standard.

C. “Responsive to” Has No Specialized Meaning

With the proper construction of the eye sensor limitation beyond dispute through Patent Owner’s own actions, Patent Owner instead floats glosses on the plain and ordinary meaning. The Board should reject Patent Owner’s attempt to seek a de facto claim construction outside of the claim construction process and should further reject Patent Owner’s unsupported suggestions of what the plain and ordinary meaning is.

Specifically, Patent Owner’s glosses focus on the meaning of the phrase “responsive to”:

- to “react or answer quickly in relation to” something (Response at 8); one thing cannot be “responsive to” another “unless it is a reaction to that other” (Response at 19);
- “temporal immediacy and action, cause and effect” (Response at 8, 20);
- that someone or something “reacts or adapts appropriately or in a specific way when influenced or affected by a particular stimulus, situation, or input” (Response at 8);
- “mere *reliance* upon eye motion” is not “sufficient to demonstrate activation ‘responsive to’” (Response at 20 (emphasis in original));

- “a reaction or adaptation to something in a way that acknowledges that thing’s presence or influence” (Response at 21); and
- responsiveness implies “a dynamic relationship in which one thing changes, adjusts, or responds to changing conditions or stimuli, typically external factors” (Response at 21).

Patent Owner’s “overly narrow claim construction[s]” were already rejected by the Board. (DI at 24.) In the Decision on Institution, the Board asked Patent Owner to “support its position” with a “clear articulation” of its view of the claim scope. (DI at 24.) But here Patent Owner offers nothing at all in support: no documentary evidence, expert declaration, or even a citation to the ’929 patent itself, that would support its proposed narrowing of “responsive to.”

The only two cited specification passages—at 3:23-25 and 3:40-43—do not support any of the above narrowing. (Response at 7.) The first passage merely provides that “eye movement sensors could be used to activate and control the binocular glasses.” (EX-1001 at 3:23-25.) There is nothing in this description that would compel a narrowing construction. For example, the passage does not disclose, let alone limit, in what ways the eye movement sensors are responsive to eye movement. The passage does not even disclose that these eye movement sensors are what performs the activating, as recited in the eye sensor limitation—only that they could be “used” somehow in the process. (EX-1016 at ¶22.)

The second passage states that “[i]t would also be possible to detect facial and eye movements (squinting, for example), as well as changes in the pupil and iris.” (EX-1001 at 3:40-43.) Once again, nothing in this sentence would demand “responsive to” to be limited as Patent Owner urges. For example, as above, the sentence does not describe or limit how an eye sensor would be responsive to facial and eye movements such as squinting, or changes in the pupil and iris. (EX-1016 at ¶23.) To the contrary, the patent indicates that its methods for sensing and controlling digital media could be implemented “in a variety of ways.” (EX-1001 at 3:36-38.)

As Dr. LaViola explains in his supplemental declaration (EX-1016), the artisan would not have applied any specialized meaning to “responsive to” and instead would recognize the term having a widely understood meaning: an eye sensor that is “responsive to” a thing (*e.g.*, eye motion) responds to that thing.³

³ Under the Board’s rules, and as the Supreme Court and Federal Circuit have clarified, a petitioner in an IPR proceeding is entitled to respond to new arguments made in the patent owner’s response, including by introducing new evidence such as supplemental expert declarations. (37 C.F.R. § 42.23(b); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018); *Apple Inc. v. Andrea Electronics Corp.*, 949 F.3d 697, 706-07 (Fed. Cir. 2020); *Axonics, Inc. v. Medtronic, Inc.*, Nos. 2022-

(EX-1016 at ¶24.) Moreover, whether or not the eye sensor is responsive to the eye motion does not depend in any way on the length of time between the eye motion and the eye sensor’s response. (EX-1016 at ¶24.) There is no need to redefine the term here.

Dr. LaViola’s conclusion is based on his education and experience in the fields of virtual reality and augmented reality, as well as his review of the documentary evidence. (EX-1016 at ¶8; EX-1004.) Further, the Federal Circuit has clarified that dictionaries are “useful to assist in understanding the commonly understood meaning of words.” (*Phillips* at 1314, 1322.) In forming his conclusion, Dr. LaViola applied the Federal Circuit’s guidance and consulted contemporary dictionaries as to the commonly understood meaning of “responsive to,” which does not appear anywhere in the specification of the ’929 patent. (EX-1016 at ¶25.) Dr. LaViola describes that, as a representative example, *The American Heritage Dictionary of the English Language, Fourth Edition* (2006)

1532, 2022-1533 (Fed. Cir. August 7, 2023).) Patent Owner’s proposed redefinitions of the eye sensor limitation—whether they are characterized as proposed claim constructions, or as proposed plain and ordinary meanings—were raised for the first time in the Response.

(the “Heritage Dictionary,” EX-1018) provides three definitions for “responsive” (as “responsive to” does not appear in the dictionary):

1. Answering or replying; responding.
2. Readily reacting to suggestions, influences, appeals, or efforts;
a responsive student.
3. Containing or using responses: *responsive reading; responsive liturgy.* (EX-1016 at ¶27; EX-1018 at 1486.)

In Dr. LaViola’s view, the three definitions are not equally pertinent to the meaning of “responsive to” as it relates to the ’929 patent. (EX-1016 at ¶28.) As Dr. LaViola explains, the second of the three listed definitions (“readily reacting to suggestions, influences, appeals, or efforts”) is not pertinent to the ’929 patent and its subject, digital eyewear. (EX-1016 at ¶29.) A POSITA having reviewed the ’929 patent would thus not understand the plain and ordinary meaning of “responsive to” to be this particular definition. (EX-1016 at ¶29.)

This is for several reasons. First, as Dr. LaViola explains, the second definition describes reacting to suggestions, influences, appeals, or efforts. (EX-1016 at ¶30; EX-1018 at 1486.) The POSITA would find it unusual to describe a digital eyewear system, and in particular an eye sensor of such a system, as receiving “suggestions, influences, appeals, or efforts.” (EX-1016 at ¶30.) This definition is more relevant to humans, who regularly react to suggestions, influences, appeals, and efforts, and could be described as “responsive to” those

things, than to the operation of digital eyewear or eye sensors. (EX-1016 at ¶30.)

This is consistent with the human example provided in the Heritage Dictionary for this particular definition: “a responsive student.” (EX-1016 at ¶30; EX-1018 at 1486.)

Second, in the field of the ’929 patent, whether a device reacts “readily” or quickly to eye motion is dependent on context and application. For instance, for providing email or telephone functions (example usages mentioned in the ’929 patent), responding within five seconds could be considered reacting “readily.” (EX-1016 at ¶31; EX-1001 at 5:32-39.) But for capturing an image using a digital camera, another example usage, responding within five seconds may be very slow, and not considered reacting “readily” at all. (EX-1016 at ¶31; EX-1001 at 3:23-27.) Further, whether something reacts “readily” is subject to a user’s individual opinion: for instance, a response that is considered quick by one user may be considered slow by a different user. (EX-1016 at ¶31.) These factors would make it difficult or impossible to determine, in the context of the ’929 patent, whether or not something reacts “readily.” (EX-1016 at ¶31.)

As Dr. LaViola explains, of the three definitions in the Heritage Dictionary, the first definition (“Answering or replying; responding”) is pertinent to digital eyewear, the field of the ’929 patent. (EX-1016 at ¶32; EX-1018 at 1486.) This is because, for example, the POSITA would characterize the behavior of digital

eyewear, or components such as eye sensors, as “answering,” “replying,” or “responding” to input such as eye motion. (EX-1016 at ¶32.) These are terms that are commonly used by a POSITA in the field of the ’929 patent to describe how digital eyewear components such as sensors handle input and communicate with other components. (EX-1016 at ¶32.) A POSITA applying the plain and ordinary meaning of “responsive to” in the context of the ’929 patent would thus apply this definition. (EX-1016 at ¶32.)

Conversely, according to Dr. LaViola, Patent Owner’s proposed limiting glosses on the meaning of “responsive to” are not supported by the dictionary. (EX-1016 at ¶34.) For example:

- Patent Owner’s suggested definitions of “responsive to” as requiring “a reaction to that other,” or as requiring “temporal immediacy and action, cause and effect,” are not found in the dictionary. (Response at 8, 19, 20; EX-1016 at ¶35; EX-1017 at 1935; EX-1018 at 1486.) Patent Owner offers no evidence to the contrary.
- Patent Owner’s suggestion that the definition of “responsive to” includes that someone “reacts or adapts appropriately or in a specific way when influenced or affected by a particular stimulus, situation, or input” is not found in or supported by the dictionary. (Response at 8; EX-1016 at ¶36; EX-1017 at 1935; EX-1018 at 1486.) Patent Owner offers no evidence to the contrary.
- Patent Owner’s suggestion that “mere *reliance* upon eye motion” is not “sufficient to demonstrate activation ‘responsive to’” is not found

in or directly supported by the dictionary. (Response at 20; EX-1016 at ¶37; EX-1017 at 1935; EX-1018 at 1486.) The dictionary does not describe any specific relationship between “reliance” and being “responsive.” (EX-1016 at ¶37; EX-1017 at 1935; EX-1018 at 1486.) Patent Owner offers no evidence to the contrary.

- Patent Owner’s suggested definition of “responsive to” as “a reaction or adaptation to something in a way that acknowledges that thing’s presence or influence” is not found in or supported by the dictionary. (Response at 21; EX-1016 at ¶38; EX-1017 at 1935; EX-1018 at 1486.) Patent Owner offers no evidence to the contrary.
- Patent Owner’s suggested definition of responsiveness as requiring “a dynamic relationship in which one thing changes, adjusts, or responds to changing conditions or stimuli, typically external factors” is not found in or supported by the dictionary. (Response at 21; EX-1016 at ¶39; EX-1017 at 1935; EX-1018 at 1486.) Patent Owner offers no evidence to the contrary.

The dictionary thus supports Dr. LaViola’s plain and ordinary meaning of “responsive to” eye motion, *i.e.*, an eye sensor that is “responsive to” a thing (*e.g.*, eye motion) responds to that thing. (EX-1016 at ¶28.) The dictionary does not support *restricting* the plain and ordinary meaning of “responsive to” as proposed by Patent Owner. (EX-1016 at ¶34.)

III. THE CHALLENGED CLAIMS ARE OBVIOUS UNDER THEIR PLAIN AND ORDINARY MEANING

All limitations of the challenged claims are met by Mann '895 in view of Perner for the reasons set forth in the Petition. Patent Owner only disputes the Petitioner's evidentiary showing with respect to the eye sensor limitation; the remaining limitations stand unchallenged. As for the eye sensor limitation, it is met by Mann '895 in view of Perner for the reasons already explained in the Petition, and as explained further below.

First, in trying to show nonobviousness of the challenged claims, Patent Owner applies the incorrect legal standard. It argues that *Mann '895* fails to disclose an eye sensor *responsive to* eye motion of a user. (Response at 12.) As the Petition explains, it is not Mann '895, but the *combined* teachings of Mann '895 and Perner that meet this limitation. (*See, e.g.*, Petition at 14-17.) The Board agreed in its Decision on Institution. (DI at 23.) As it noted, Patent Owner cannot show nonobviousness by attacking the references individually. (*Id.* (citing *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986)).)

Second, the Petition explained how Mann '895 in view of Perner meets the eye sensor limitation under any reasonable claim construction. (Petition at 13-17.) In Mann '895, an iris scanner is used to selectively provide eyeglasses circuit functionality—a “sight license”—to identified licensed users. (Petition at 13-15; EX-1005 at 11; EX-1003 at ¶51.) And Perner discloses an improvement to iris

scanners: instead of using static iris images to identify users, Perner's iris detector instead stimulates the user's eye motion, and uses the unique "edge pattern" that results from the eye motion to authenticate the user. (Petition at 9-10, 16-17; EX-1006 at [0020]-[0025], [0035], Fig. 3; EX-1003 at ¶¶51-57.) The edge pattern is simpler than the iris image, so this enhances the speed and efficiency with which the iris scanner can identify a user. (Petition at 14-17; EX-1003 at ¶¶53-57; EX-1006 at [0004], [0025], [0059].) The skilled artisan would have been motivated to make the combination in order to realize those advantages, and for the additional reasons set forth in the Petition. (Petition at 15-17; EX-1003 at ¶¶54-58.)

Patent Owner contends the combination of Mann '895 and Perner does not meet the claimed eye sensor. (Response at 15-22.) But Petitioner and Patent Owner agree on relevant aspects of how the combined system would operate. Patent Owner admits that the system stimulates a user's eye motion, and the iris detector obtains an edge pattern from images of that eye motion. (Response at 16-17.) Patent Owner further admits that the edge pattern is then compared to reference images in a database; and permissions are granted "responsive to" the image comparisons. (Response at 17.) Petitioner agrees.

Third, Patent Owner's argument is that its special definition of "responsive to" applies and is not met by this combined system. (Response at 16-18.) But as described above, Patent Owner's special definition does not comport with the plain

and ordinary meaning of “responsive to,” and Patent Owner offers no evidence—only attorney argument—to the contrary. (EX-1016 at ¶¶21, 42.) Instead, as Dr. LaViola explains, and as described above, the skilled artisan would understand an eye sensor activating circuitry “responsive to” the eye motion to simply mean an eye sensor activating the circuitry in response to the eye motion. (EX-1016 at ¶42.) The eye sensor of the combined system meets this limitation by detecting the eye motion, acquiring a unique edge pattern from the eye motion, and determining, based on the edge pattern, whether to grant sight permissions to the user. (Petition at 13-17; EX-1006 at [0026]; EX-1003 at ¶¶51-58; EX-1016 at ¶42.)

As the Board recognized, the fact that the eye sensor both causes *and* responds to the eye motion is consistent with the claim language. (DI at 22-24; EX-1016 at ¶43.) To the extent Patent Owner contends that being “responsive to” eye motion excludes eye sensors that also cause the eye motion, no such limitation can be discerned in the claims, as the Board recognized. (DI at 22-24; EX-1016 at ¶43.) Moreover, such a limitation does not belong to the plain and ordinary meaning of “responsive to”; for example, the POSITA would understand that a sensor (*e.g.*, a blood pressure monitoring cuff that compresses the user’s artery to stop blood flow) can cause a thing to happen, and also be responsive to that same thing. (EX-1016 at ¶43.)

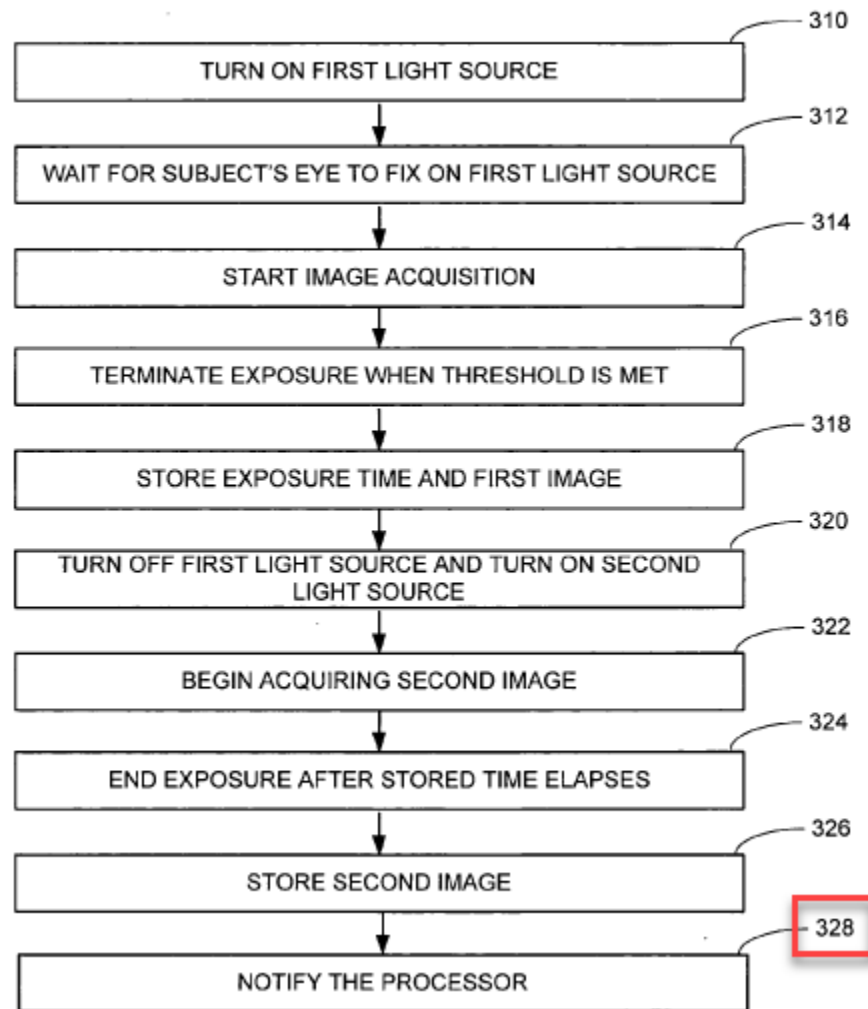
Fourth, Patent Owner further argues that the eye sensor limitation is not met because the eye sensor activates the sight license responsive to “finding or not finding a match for the edge pattern in a database, and not in response to any eye motion.” (Response at 19.) But as described in *Pemer*, the eye sensor compares the unique edge pattern to the database immediately upon acquiring the edge pattern from the eye motion. (*See, e.g.*, EX-1006 at [0026] (“After an edge pattern has been obtained, the processor 122 can search through the database and attempt to find a reference pattern that matches the *just-acquired* edge pattern.”) (emphasis added); EX-1016 at ¶44.) The eye sensor thus compares the edge pattern to the database, and activates the sight license, in response to the specific eye motion that generated the edge pattern. (EX-1016 at ¶44.)

To the extent Patent Owner contends that the eye sensor cannot be responsive to events that are prompted by the eye motion, this again does not comport with the plain and ordinary meaning of “responsive to,” and Patent Owner again offers no evidence otherwise. (EX-1016 at ¶45.) Instead, as Dr. LaViola explains, the ordinarily skilled artisan would recognize, by plain meaning of “responsive to”, that one can be responsive to multiple events, including multiple events in sequence. (EX-1016 at ¶45.) For example, in plain usage, a car is responsive to a user stepping on the accelerator pedal, even though the pedal movement has to trigger a sequence of additional events (e.g., turning a pivot,

pulling a throttle wire, widening an air intake valve) before the car will accelerate. (EX-1016 at ¶45.) In plain usage, the car is responsive to the movement of the accelerator pedal, and it is also responsive to the additional events that follow the movement of the accelerator pedal. (EX-1016 at ¶45.)

Fifth, Patent Owner further argues that the eye sensor limitation is not met because the eye sensor captures images of the eye motion in response to commands from its controller 120, but the images themselves are not captured responsive to the eye motion. (Response at 21; EX-1016 at ¶46.) Relatedly, Patent Owner argues that activating the sight license happens responsive to comparing the edge pattern to a database; but “not in response to any eye motion,” because “there is no *responsive* connection between the eye motion and the granting of privileges.” (Response at 22 (emphasis in original); EX-1016 at ¶46.)

Patent Owner’s characterizations in its Response are simply untrue. In Perner’s iris feature detector, it is the user’s eye motion that triggers the comparison of the edge pattern to the database, which in turn activates the sight license. (EX-1016 at ¶47.) This is a direct, causal, and responsive connection between the eye motion and the granting of privileges. For example, to capture the user’s eye motion, controller 120 of the iris feature detector performs a process shown in annotated Fig. 3 below:

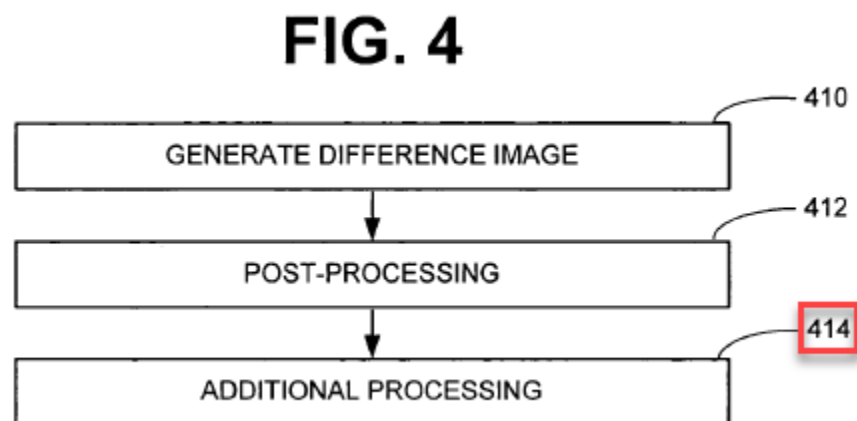
FIG. 3

(EX-1006 at [0006], [0029]-[0030], Fig. 3 (annotated); EX-1016 at ¶47.)

The iris detector's controller proceeds to, *e.g.*, turn on a first light source (310); wait for the eye to move to the first light source (312); after the eye has moved to the first light source, acquire a first image of the eye (314); and store the first image (318). (EX-1016 at ¶ 48.) Then, to obtain a second image of the eye, the controller turns off the first light source and turns on a second light source

(320); acquires the second image (322); and stores the second image (326). (EX-1006 at [0029]-[0030], Fig. 3; EX-1016 at ¶48.)

Once the images of the eye motion have been acquired and stored, the eye sensor responds to the eye motion by notifying (328, highlighted) the iris detector's processor 122. This "prompt[s] the processor to process the first and second images." (EX-1006 at [0030], Fig. 3; EX-1016 at ¶49.) The processor, in response to the notification, performs "additional processing" (414) by which the user is "identified or granted certain privileges." (EX-1006 at [0030], [0032], [0035], Fig. 4; EX-1016 at ¶49.) For example, as part of the additional processing, the processor generates the edge pattern from the images, searches the database for a reference pattern that matches the edge pattern, and grants the privileges if a match is found. (EX-1006 at [0035]; EX-1016 at ¶49.) Annotated Fig. 4 illustrates the operation of the processor in response to the eye motion and the notification:



(EX-1006 at [0032], [0035], Fig. 4 (annotated); EX-1016 at ¶49.)

Thus, contrary to how Patent Owner envisions it, in the combination of Mann '895 and Perner, there is a *direct responsive connection* between the eye motion and the granting of privileges (*i.e.*, activating the sight license). (EX-1016 at ¶50.) That is, the eye sensor responds to the eye motion by acquiring the unique edge pattern from the eye motion, and notifying (328) its processor once the eye motion has concluded. (EX-1016 at ¶50.) And in response to the notification, the eye sensor “matches the *just-acquired* edge pattern” in the database to grant the privileges. (EX-1006 at [0026] (emphasis added); EX-1016 at ¶50.) The eye sensor thus responds to the eye motion to activate the sight license. (EX-1016 at ¶50.) This advances a key advantage of Perner: “faster processing for identification and authentication.” (EX-1006 at [0025]; EX-1016 at ¶50.) The eye sensor limitation is met at least by the above processes. (EX-1016 at ¶50.)

IV. THE CHALLENGED CLAIMS ARE OBVIOUS EVEN UNDER PATENT OWNER’S PROPOSED REDEFINITION

As explained above, Patent Owner’s proposed redefinition of “responsive to” is incorrect and unsupported by evidence. The Board should reject Patent Owner’s redefinition and instead apply the term’s plain and ordinary meaning to the skilled artisan, as supported by Dr. LaViola’s supplementary declaration. (EX-1016.) However, even if the Board were to adopt Patent Owner’s version of “responsive to,” the claims are still unpatentable as set forth in the Petition and described further below. (EX-1016 at ¶51.)

Patent Owner's purported requirements of "temporal immediacy and action, cause and effect" (Response at 8, 20) are demonstrated by the relationship described above between the eye motion, and the eye sensor's granting of privileges based on the "*just acquired*" edge pattern of the eye motion, in the combination of 'Mann 895 and Perner. (EX-1016 at ¶52.) The eye sensor activates the license responsive to the eye motion, under Patent Owner's definition. (EX-1016 at ¶52.) For example, as described above, the eye sensor demonstrates temporal immediacy by matching an edge pattern "just acquired" from the eye motion to grant the privileges, thus acting promptly to activate the sight license from the eye motion. (EX-1006 at [0026]; EX-1016 at ¶52.) The eye motion is a cause of the effect: the granting of the sight license. (Response at 8, 20; EX-1016 at ¶52.)

Moreover, as Dr. LaViola explains, there are advantages in usability, security, and privacy for biometric authentication systems, such as Mann/Perner, to respond immediately to biometric input. (EX-1016 at ¶53.) For example, when authenticating a user to grant permissions based on biometric data, system usability is improved by avoiding unnecessary delays in extending privileges to legitimate users. (EX-1016 at ¶53.) In addition, storing sensitive biometric data (such as a user's unique eye motion data) in memory for longer than necessary can increase the risk of the data being compromised, posing unnecessary security and privacy

concerns. (EX-1016 at ¶53.) The Mann/Pemer system would respond immediately to the user's eye motion by granting permissions, as described above, in order to realize these advantages. (EX-1016 at ¶53.)

Patent Owner's other purported requirements are met as well: as described above, the eye sensor "react[s] or answer[s] quickly in relation to" the eye motion (Response at 8, 19) at least by detecting the eye motion, acquiring the unique edge pattern from that eye motion, and determining whether or not to grant privileges based on the "just acquired" edge pattern of the eye motion. (EX-1016 at ¶53.)

The eye sensor "reacts or adapts appropriately or in a specific way when influenced or affected by a particular stimulus, situation, or input" (Response at 8) at least by granting or withholding the privileges, as appropriate, based on the edge pattern of the detected eye motion input. (EX-1016 at ¶53.)

Further, the eye sensor does not merely "rel[y] upon eye motion" (Response at 20), but *responds* specifically to the eye motion by capturing the unique edge pattern from the eye motion, and using that edge pattern to determine whether or not to grant privileges. (EX-1016 at ¶54.) Similarly, the eye sensor "react[s] or adapt[s]" to the eye motion "in a way that acknowledges that thing's presence or influence" (Response at 21) at least by capturing and processing images of the eye motion, and using the eye motion images to determine whether or not to grant privileges. (EX-1016 at ¶54.) And the relationship between the eye motion and

the granting of privileges is “dynamic” (Response at 21) at least in that the eye sensor detects, and responds to, the movements of the eye as it shifts its fixation from a first light source (312) to a second light source (320). (EX-1016 at ¶54.)

Accordingly, in addition to the reasons described above and in the Petition, the eye sensor limitation is met by Mann ’895 and Perner even under Patent Owner’s proposed new definition of the eye sensor limitation. (EX-1016 at ¶51.) The Board should therefore cancel the remaining challenged claims even if it decides to apply Patent Owner’s proposed new definitions.

V. CONCLUSION

For the foregoing reasons, as well as those set forth in its Petition, Petitioner respectfully requests cancellation of the remaining challenged claims 1-6, 8, 11, 17, and 22 of the ’929 patent.

Dated: January 18, 2024

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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 5,515 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.

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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 on the Patent Owner via e-mail (by consent) to the following counsel of record for the Patent Owner:

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