UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC., AND
PORSCHE CARS NORTH AMERICA, INC.,
Petitioner,

v.

YECHEZKAL EVAN SPERO
Patent Owner.

U.S. Patent No. 9,955,551 to Spero

Case No.: IPR2023-00315*

PATENT OWNER'S OPPOSITION TO MOTION TO EXCLUDE EVIDENCE UNDER 37 C.F.R. § 42.64(c)

---

* Porsche Cars North America, Inc., which filed a petition in IPR2023-01225, has been joined as a party to this proceeding.

TABLE OF CONTENTS

Table of Authorities ii

I. INTRODUCTION 1

II. ARGUMENT 2

A. Exs.2001 and 2006: Dr. Turk Exceeds the Level of Skill Required for a POSA 2

1. Petitioner Proposed a Broad Skill Level 2

2. As The POSA Dispute Was Timely Challenged, There Is No Waiver 5

3. Petitioner's Current Narrow Interpretation Does Not Consider Precedent Governing the POSA Determination 6

4. Dr. Turk Is Qualified in the Pertinent Art of Automotive Lighting and Lighting-Control Systems 8

5. Petitioner Attempts to Distract from its Unreasonable Technical Positions by Challenging Dr. Turk's Experience 11

Certificate of Service Pursuant to 37 C.F.R. § 42.6(e) 16

Certificate of Compliance Pursuant to 37 C.F.R. § 42.24 18

Table of Authorities

Cases

Best Medical International, Inc. v. Elekta Inc.,
46 F.4th 1346 (Fed. Cir. 2022) 7

Chamberlain Grp v. One World Techs.,
944 F.3d 919 (Fed. Cir. 2019) 6

Daiichi Sankyo Co. v. Apotex, Inc.,
501 F.3d 1254 (Fed. Cir. 2007) 7

DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.,
464 F.3d 1356 (Fed. Cir. 2006) 7

In re NuVasive, Inc.,
841 F.3d 966 (Fed. Cir. 2016) 6

Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n,
22 F.4th 1369 (Fed. Cir. 2022) 5

SEB S.A. v. Montgomery Ward & Co.,
594 F.3d 1360 (Fed. Cir. 2010) 4

Standard Oil Co. v. American Cyanamid Co,
774 F.2d 448 (Fed. Cir. 1985). 7

Sundance, Inc. v. DeMonte Fabricating Ltd.,
550 F.3d 1356 (Fed. Cir. 2008) 4

Other Authorities

Consolidated Trial Practice Guide November 2019 4

List of Exhibits

Exhibit No.	Description
2001	Declaration of Matthew A. Turk, Ph.D.
2002	Curriculum Vitae of Matthew A. Turk, Ph.D.
2003	Best Practices and FAQs for Filing Requests for Reexamination Compliant with 37 CFR 1.510 and 1.915, PTAB, May 2010
2004	Petition challenging U.S. Patent No. 9,955,551, *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero*, IPR2023-00318, Paper 1, December 22, 2022
2005	Petition challenging U.S. Patent No. 9,955,551, *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero*, IPR2023-00336, Paper 1, December 22, 2022
2006	Second Declaration of Matthew A. Turk, PhD
2007	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on August 2, 2023, *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero,* IPR2022-01586
2008	*Intentionally left blank*
2009	*Intentionally left blank*
2010	Jianzhong Jiao and Ben Wang, "Etendue Concern for Automotive Headlamp Using LEDs," SPIE Proceedings Vol. 5187, (January 2004) (Available at https://www.spiedigitallibrary.org/conference-proceedings-of-spie/5187/0000/Etendue-concerns-for-automotive-headlamps-using-white-LEDs/10.1117/12.504363.short)
2011	Michael Bass, *Handbook of Optics* 3RD Edition Volume II, (McGraw-Hill, 2010) (Available at https://www.worldcat.org/title/555545456)
2012	Ben Wang and Jianzhong Jiao "Studies for Headlamp Optical Design Using LEDs," SAE Technical Paper Series 2004-01-0434, (March 2004) (Available at https://www.sae.org/publications/technical-papers/content/2004-01-0434/)
2013	Ben Wang and Jianzhong Jiao "Optical Transform Limitations in Headlamp Photometric Performance," SAE Technical Paper Series 2005-01-0861, (April 2005) (Available at https://www.sae.org/publications/technical-

Exhibit No.	Description
	papers/content/2005-01-0861/)
2014	*Intentionally left blank*
2015	Jianzhong Jiao and Ben Wang "High-Efficiency Reflector Optics for LED Forward Lighting," SPIE Proceedings Vol. 6670, (September 2007) (Available at https://www.spiedigitallibrary.org/conference-proceedings-of-spie/6670/66700M/High-efficiency-reflector-optics-for-LED-automotive-forward-lighting/10.1117/12.730524.short)
2016	Navigant Consulting "Energy Saving Estimates of Light Emitting Diodes in Niche Lighting Applications" Building Technologies Program Office of Energy Efficiency and Renewable Energy U.S. Department of Energy (September 2008) (Available at Energy Savings Estimates of Light Emitting Diodes in Niche Lighting Applications (Technical Report) | OSTI.GOV.)
2017	PCT Publication No. WO 86/05147 to Flaaten
2018	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on August 23, 2023
2019	Alliance for Automotive Innovation website retrieved September 11, 2023 https://www.autosinnovate.org/about/our-members
2020	Michael Bass, *Handbook of Optics* 3RD Edition Volume V, (McGraw-Hill, 2010) (Available at https://www.worldcat.org/title/557121959.)
2021	Texas Instruments/Digikey "How DLP Technology Works," (Available at https://www.digikey.com/en/product-highlight/t/texas-instruments/dlp-technology.) (Accessed September 12, 2023.)
2022	Texas Instruments "Introduction to +/- 12 Degree Orthogonal Digital Micromirror Devices (DMDs)" (Available at https://www.ti.com/lit/an/dlpa008b/dlpa008b.pdf?HQS=dis-dk-null-digikeymode-dsf-pf-null-wwe&DCM=yes&distId=10) (Accessed September 12, 2023.)
2023	Certified File Wrapper of Reexamination Application 90/014815 dated January 11, 2023
2024	*Intentionally left blank*
2025	Condensed Transcript of Deposition of Jianzhong, Ph.D. taken

Exhibit No.	Description
	on January 9, 2024 *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero* IPR2023-00315, IPR2023-00318
2026	*Intentionally left blank*
2027	Patent Owner Objection Response Letter – Service Copy *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero* IPR2023-00315, July 20, 2023
2028	Patent Owner Objection Response Letter – Service Copy *Volkswagen Group of America, Inc. v. Yechezkal Evan Spero* IPR2023-00315, October 4, 2023

I. INTRODUCTION

Petitioner's motion incorrectly assumes that Patent Owner (PO) has waived the opportunity to challenge the POSA level and thus myopically focuses on whether Dr. Turk satisfies their new, narrow interpretation of the POSA level. Because PO timely challenged Petitioner's POSA interpretation in its Sur-Reply, when first presented with the issue, there is no waiver.

Notwithstanding PO's briefing on this point, Petitioner's motion ignores the seminal issue: whether optics and sensing/imaging experience are relevant to the POSA level for the '551 Patent. The salient facts and law demonstrate that under the Federal Circuit factors guiding determination of a POSA level, optics and sensing/imaging experience are relevant to the POSA level — indisputably qualifying Dr. Turk as both a POSA and an expert on all disputed issues. Indeed, Petitioner's own record testimony supports this conclusion. Relatedly, the need for specific industry experience regarding headlamp design, testing and regulation compliance is a red herring. By Petitioner's own admission, the '551 Patent claims are "directed to **adaptive** motor vehicle headlamps with LED light sources." (MTE, 3-4.) Dr. Jiao has explained that optics (e.g., spatial light modulators) and sensors are important components of adaptive headlamps. (MTE, 4; Ex.1003, ¶¶53, 56; Ex.2007, 126:9-12.)

Petitioner's motion to exclude ("MTE") relies on mischaracterized

testimony and fundamental disagreements, as "evidence" of Dr Turk's lack of knowledge on "common" terms. (MTE, 8-11.) A closer look reveals a pattern of truncated record cites that when reviewed, establish Dr. Turk's care to proffer opinions based on context and avoid sweeping statements, in an industry where terms have multiple meanings. (Ex.1054, 84:7-11.) By contrast, Petitioner and Dr. Jiao imbue their POSA with Dr. Jiao's unsupported, generalized "POSA knowledge", which is often the linchpin of a new, contradictory argument. (Sur-Reply, 1-7.) The MTE is a thinly veiled attempt to bolster the unreasonable technical positions of its expert and cast aside competing opinions.

II. ARGUMENT

A. Exs.2001 and 2006: Dr. Turk Exceeds the Level of Skill Required for a POSA

1. Petitioner Proposed a Broad Skill Level

Petitioner proposed a POSA skill level that includes "a bachelor's degree (B.S.) in mechanical engineering, electrical engineering, optical engineering, applied physics, or an equivalent field, as well as at least 2 years of industry experience in the area of automotive lighting and lighting-control systems." (Pet., 7; Ex.1003, ¶44.) Further, "[t]he POSA may work as part of a team." (*Id.*) Petitioner also proposed a sliding scale between education and industry experience: "a higher level of education or skill might make up for less experience and vice

versa." (*Id*., ¶45.)

PO provided an alternate POSA skill level that included "two or more years of experience in the field of optical and imaging systems." (POPR, 9.) The Board did not adopt either party's proposed skill level, instead it stated if "either party believes the level of ordinary skill affects this proceeding, that party should explain how in the instituted trial." (DI, 7.)

Since Petitioner's expert testified that the term "Automotive Lighting" is a broad term that includes optical and imaging systems, PO understood that its proposed POSA level was effectively incorporated within the broader POSA level suggested by Petitioner. Therefore, PO did not dispute Petitioner's proposed level of ordinary skill in its Response. (POR, 9.)

Per Dr. Jiao, his opinion on the level of a POSA is based on his teaching and industry experience. (Ex.1003, ¶46.) During his deposition in a related proceeding, Dr. Jiao described teaching three "Automotive Lighting" classes for the Society of Automotive Engineering (SAE). (Ex.1004, 4; Ex.2007, 113:11-114:9.) Dr. Jiao teaches "optics principles" in his "Automotive Lighting" classes, including "imaging optics and non-imaging optics." (Ex.2007, 119:2120:5.) Dr. Jiao also explained that his "Automotive Lighting" Department at North American Lighting (NAL) included four groups of engineers, including an "optical design group" an "electronic technology group," and an "engineering analysis and testing group."

(Ex.2007, 14:1-21, 16:1-13.) Based on Dr. Jiao's testimony regarding the academic/industry inclusion of optics and imaging/sensing within "Automotive Lighting," PO noted the overlap in the POSA levels, but did not dispute Petitioner's POSA level in their Response. (POR, 9; Ex.2006, ¶¶47-48.)

It was not until its Reply that Petitioner articulated its new interpretation of its proposed POSA skill level, one that requires <u>specific</u> industry experience, with a "vehicle headlamp company," "an LED (or any other light source) company," **and** design experience **and** awards/patents on a "vehicle forward lighting system." (Reply, 4.) Petitioner seems to fault Dr. Turk for not having the same exact CV as Dr. Jiao. There is no such requirement. As the '551 Patent involves multiple technical fields—namely optics, sensing/imaging, and the control of LED lighting, each field is relevant. To testify as an expert, under Fed. R. Evid. 702, a person must be "qualified in the pertinent art." *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008) (noting that under Fed. R. Evid. 702, the expert must possess sufficient "expertise to be of assistance" to the trier of fact). "[T]here is no requirement of perfect match between the expert's experience and the relevant field." *See* Consolidated Trial Practice Guide, November 2019 at 34 (citing *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010)). Further, since LED headlamps were in their infancy in the early 2000s, (Ex.2006, ¶¶25-38) there are very few experts that would have met Petitioners new

POSA criteria.

2. As The POSA Dispute Was Timely Challenged, There Is No Waiver

Petitioner glosses over PO's dispute over the POSA level, as if the challenge was somehow waived at the POR stage. Petitioner's reliance on *Kyocera* is misplaced. *Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1377 (Fed. Cir. 2022). In *Kyocera*, the Commission adopted Koki's POSA definition and Kyocera did not contest it. (*Id*., 1376.) Here, the Board did not adopt Petitioner's definition, instead it invited both parties to explain the differences. (DI, 7.) As explained above, when Petitioner first articulated its new POSA interpretation, PO immediately challenged the interpretation "PO contests Petitioner's efforts to winnow its POSA definition on Reply and skirt the issue of whether the POSA must possess sensing experience." (Sur-Reply, 2.) Further, a "POSA level that factors in experience with optics and imaging closely aligns with the purpose of the '551 Patent." (Sur-Reply, 3.)

Petitioner first suggested its new narrow interpretation of the POSA level in its objection to Ex.2001 on July 6, 2023 (Paper 13), to which PO promptly responded on July 20, 2023 noting the lack of particularity of the objections, explaining the relevance and admissibility of the declaration, and reminding Petitioner of its sliding scale, that "'a higher level of education or skill might make

up for less experience and vice versa.' (Ex.1003, ¶45.)" (Ex.2027, 1; *see also* Ex.2028, 1.) However, Petitioner did not clearly articulate its new narrow interpretation of the POSA level until its Reply.

"[B]ased on due-process and APA guarantees," when a petitioner raises new issues on Reply, a PO is entitled to "an opportunity to respond to those arguments." *Chamberlain Grp v. One World Techs*., 944 F.3d 919, 924-925 (Fed. Cir. 2019) citing *In re NuVasive, Inc.*, 841 F.3d 966, 971 (Fed. Cir. 2016). Because PO's POSA arguments were responsive to new arguments made by Petitioner in its Reply and consistent with the positions advanced in the preliminary response and objection responses (Ex.2027; Ex.2028), PO did not waive its right to raise the issue during the trial proceedings.

3. Petitioner's Current Narrow Interpretation Does Not Consider Precedent Governing the POSA Determination

Petitioner's POSA interpretation and MTE fail to explain why their interpretation is correct, it just assumes that it governs. In *Daiichi*, the Federal Circuit listed a number of factors that may be considered in determining the POSA including: "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Daiichi Sankyo Co. v. Apotex,*

Inc., 501 F.3d 1254, 1256 (Fed. Cir. 2007). The Federal Circuit also considers (7) the "patent's purpose" and (8) the "patent teachings as a whole" when determining the level of ordinary skill in the art. *Best Medical International, Inc. v. Elekta Inc*., 46 F.4th 1346, 1354 (Fed. Cir. 2022), *see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co*., 464 F.3d 1356, 1362–63 (Fed. Cir. 2006).

1. Petitioner did not consider the educational level of the inventor — a person that *per se* exceeds the innovative skill of the hypothetical POSA with "conventional wisdom"—who did not work for a vehicle headlamp company or design headlamps before July 2002 and therefore would not meet Petitioner's new POSA criteria. *Standard Oil Co. v. American Cyanamid Co,* 774 F.2d 448, 454 (Fed. Cir. 1985).

2-5. Petitioner did not consider the type of problems encountered in the art, prior art solutions to those problems; rapidity with which innovations are made; or sophistication of the technology. Rather, Petitioner's briefing glosses over the state of the art in the early 2000's. As LED headlamps were under development in the early 2000's, a myriad of complex, interrelated technical issues were being solved at the time. (POR, 27-28; Ex.2006, ¶¶25-38.)

7-8. Petitioner ignores the patent's "purpose" and patent teachings as a whole. The purpose of the '551 Patent is to use LED lighting "to effect the provision of lighting that is in concert with the actual illumination needs at a given

time… a camera serves as a sensor, and the device uses computer vision technology to recognize… the surroundings… to provide the lighting requirements needed." (Sur-Reply, 3 quoting Ex.1001, 14:59:66.)

Petitioner's analysis dismisses the relevance of optics and sensing for the POSA level, yet Dr. Jiao explains their importance to the claimed "**adaptive** motor vehicle headlamps." (MTE, 4.) Dr. Jiao has explained that optics and sensors are important components of adaptive headlamps: "By 2000, adaptive headlamp systems with multiple directional light beams were developed with various means of sensors to detect surroundings while driving and resulted in glare reduction for oncoming and preceding vehicle drivers." (Ex.1003, ¶57.) "When adaptive features needed, you can change a portion of the optics to make a portion of the light left/right, or up and down." (Ex.2007, 126:9-12.) Thus, it is undisputed, that the patented subject matter uses **sensor/imaging inputs** to determine how to **adapt** illumination, e.g., using **optics,** to illuminate a curve. (*Id.*)

4. Dr. Turk Is Qualified in the Pertinent Art of Automotive Lighting and Lighting-Control Systems

Dr. Turk has significant automotive lighting and lighting-control systems experience, including experience with optics, imaging systems, sensors and lighting controls—which govern how to **adapt** the headlight illumination.

Dr. Turk has "worked and studied in the field of computer vision since 1984,

as well as related areas of image processing, pattern recognition, machine learning, and human-computer interaction." (Ex.2006, ¶8.) The "field of computer vision is concerned with determining how computers can extract, analyze and understand information from images and video." (*Id*.) Computer vision has further "been applied to a wide variety of applications including automotive lighting and controls such as those used in automotive adaptive forward lighting systems." (*Id*.)

Dr. Turk's industry experience includes working for Martin Marietta Denver Aerospace from 1984 to 1987, where he worked primarily on computer vision for autonomous vehicle navigation as part of the Defense Advanced Research Projects Agency's Autonomous Land Vehicle program and subsequent advances in self-driving automobiles. (Ex.2006, ¶12; Ex.2002, 3-4.) Dr. Turk explained during his deposition that this work involved "computer vision work" and "various aspects of sensing and imaging," including vehicle lighting and lighting control systems. (Ex.1054, 21:10-12, 53:9-12.) As Dr. Turk confirmed in deposition: vehicle forward "illumination was an important part" of determining how the autonomous vehicle would drive at dusk and at night. (*Id*., 54:7-8.)

Dr. Turk has taught technical courses at the University of California, Santa Barbara (UCSB) since 2000 "related to computer vision" and other areas. (Ex.2006, ¶13; Ex.2002, 2-3.) The above "courses covered the fundamentals of light and optics, camera sensors, imaging geometry, infrared imaging, optical

filtering, image processing, 3D imaging, scene understanding, and structured lighting." (Ex.2006, ¶13.)

As Co-founder of the Four Eyes Lab at USCB in 2003, he worked on and supervised many research projects "including (1) visual recognition of automobiles and (2) multi-flash imaging, which used multiple image sources and special optics to infer 3D scene structure from images." (*Id.,* ¶14.)

Dr. Turk has "published research on lighting and optics, including research focused on automobile-related imaging, including: "Car-Rec: A real-time car recognition system," IEEE Workshop on Applications of Computer Vision (WACV 2011), January 2011; "VITS - a vision system for autonomous land vehicle navigation," IEEE Trans. on Pattern Analysis and Machine Intelligence, Vol. 10, No. 3, pp. 342-361, May, 1988; "Video road-following for the Autonomous Land Vehicle," Proc. IEEE International Conference on Robotics and Automation, Raleigh, N. C., April, 1987; "Color road segmentation and video obstacle detection," Advances in Intelligent Robotic Systems: Mobile Robots, SPIE, Cambridge, MA, 1986." (Ex.2006, ¶19.)

Even if the Automotive Lighting term was interpreted narrowly to minimize Dr. Turk's extensive industry experience, then Dr. Turk's extensive education would fit the skill level under Petitioner's sliding scale, i.e., "a higher level of education or skill might make up for less experience and vice versa." (Ex.1003,

¶45.) For example, Dr. Turk received his Ph.D. from the Massachusetts Institute of Technology (MIT) in 1991. (Ex.2006, ¶9; Ex.2002, 4.) His doctoral work was in the area of computer vision. (Ex.2006, ¶9.) He received a Master of Science degree in Electrical and Computer Engineering from Carnegie Mellon University in 1984, and a Bachelor of Science degree in Electrical Engineering from Virginia Tech (VPI&SU) in Blacksburg, Virginia in 1982, where his senior honors thesis was on image processing. (*Id.*)

Dr. Turk opines on, *inter alia*, the State of the Art as of 2002 and adaptive headlamp systems including sensors, imaging systems, and optics, i.e., the technology described in the '551 Patent: "a multitude of sensor-based techniques for observing a scene, analyzing a scene, determining varied illumination for a scene, etc. This can include determining what objects are within the scene and what illumination should correlate to those objects." (Ex.2006, ¶¶25-38, 42.) Dr. Turk's opinions directly correlate with his expertise.

5. Petitioner Attempts to Distract from its Unreasonable Technical Positions by Challenging Dr. Turk's Experience

Petitioner/Dr. Jiao's efforts to belittle Dr. Turk's understanding of lighting/optics terminology reveals an ongoing effort to invent an argument from whole cloth. In its Reply, Petitioner imbues their new POSA with unsupported, hindsight-driven "industry" knowledge that contradicts their prior assertions.

Petitioner challenges Dr. Turk's contribution to the "illumination portion" of the Martin Marietta project. (MTE, 6-7.) However, adaptive automotive lighting, such as that claimed in the '551 Patent is more sophisticated than just illumination, it includes sensors and vision technology to control the lighting. (Ex.1001, 14:59-66.) The '551 Patent uses LED lighting "to effect the provision of lighting that is in concert with the actual illumination needs at a given time . . . a camera serves as a sensor," and the device uses "computer vision technology to recognize ... [the] surroundings … [to] provide the lighting requirements needed []" (*Id.)*

To support their unfounded attack that Dr. Turk lacks knowledge of "common" terms, Petitioner's MTE is replete with selective excerpts that blatantly mischaracterize Turk's testimony. When faced with ambiguous questions during his depositions that lacked context, Dr. Turk would ask for context and/or provide appropriate context himself. (*See* MTE, 8-11.)

For example, when referencing Dr. Turk's description of Beam (Ex.1005), Petitioner asked "In order to generate a light beam to provide adaptive headlamp functionality, does it need directional light sources?" (Ex.1053, 31:16-18) To clarify the context, Dr. Turk asked: "Are you talking about Beam specifically or in what context are you asking the question?" (*Id*., 30:20-21.) Rather than clarify the context, Petitioner simply reiterated its general question, and Dr. Turk responded "In general -- I'm not sure if I've thought about this as a general question. I imagine

there might be other ways to provide that." (*Id*., 31:25-32:2; *see* MTE, 8.)

Additionally, Petitioner truncates Dr. Turk's response to one of a series of broad hypothetical questions: "Okay. If you had those two LEDs in an automotive headlamp, those are the only two LEDs, can they be noncontiguous?" (Ex.1053, 97:2) Petitioner states in the MTE that Dr. Turk "ultimately avoided answering by stating that he 'ha[d] no comment on" the question." (MTE, 9) but omits his reference to the broad hypothetical question "I'd probably need the fuller context of why someone was asking about contiguousness in that context and what would be the implications of it. But as a **hypothetical**, I really have no comment on it." (Ex.1053, 99:3-12.)

Petitioner also selectively edits Dr. Turk's testimony to omit his answer to their questions, e.g., in response to the question "what did you specifically work on with regards to the illumination" portion of the Martin Marietta Project, Petitioner quotes his introduction that it was a long time ago and I don't "remember too much detail about it," (MTE, 7) but omits his answer, i.e., "but certainly an important question was how much and what kind of illumination was necessary to be able to do what we needed to do . . . We needed to **sense** and understand the world around the vehicle so that it would know where to drive, among other things." (Ex.1054, 54:9-23.)

Petitioner argues that Dr. Turk "initially and incorrectly opined that the

intensity of light was measured in perceived brightness, 'a human judgment'" and "does not understand" that intensity "is not synonymous with 'brightness.'" (MTE, 10; Reply 4.) However, Dr. Jiao used the terms "intensity" and "brightness" interchangeably in his deposition when describing pulse width modulation "when you turn the LED on and off fast enough, optically, including human eyes, you cannot detect it . . . You can vary the perceived brightness or intensity." (Ex.2007, 89:2-9.) In sum, Petitioner's POSA assertions raise numerous red flags.

Regarding Exhibits 2001 and 2006, the opinions provided in Dr. Turk's Declarations were based upon: (1) his qualifications and professional experience and (2) the documents Dr. Turk cited and considered. (Ex.2001, ¶¶4-19, Ex.2002; Ex.2006, ¶¶6-21.) Dr. Turk is a testifying expert pursuant to FRE 703 and he may therefore express opinions based on facts or data he has been made aware of or personally observed. Dr. Turk's Declarations are relevant under FRE 401 and 402 because they identify and explain technical issues that Dr. Jiao failed to explain and therefore have a tendency to make a fact more or less probable than it would be without the evidence; and the fact is of consequence in determining the action, and its admission is not otherwise prohibited. (*See* Ex.2027, 1-2; Ex.2028, 1-2.)

Respectfully submitted,

Dated: March 6, 2024

/ Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121)
Sangeeta G. Shah (Reg. No. 38,614)
David S. Bir (Reg. No. 38,383)
Brooks Kushman P.C.
150 W. Second St., Suite 400N
Royal Oak, MI 48067-3846
(248) 358-4400

Attorneys for Yechezkal Evan Spero

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

The undersigned hereby certifies that on March 6, 2024, a complete and entire copy of **Patent Owner's Opposition to Motion to Exclude**, was served via electronic mail by serving the correspondence email addresses of the following lead and back-up counsel as shown below:

Michael D. Specht (Reg. No. 54,463) Sterne, Kessler, Goldstein & Fox P.L.L.C. 1101 K Street, N.W., 10th Floor Washington D.C., 20005 Telephone: (202) 371-2600 Facsimile: (202) 371-2540 mspecht-PTAB@sternekessler.com	Jason A. Fitzsimmons (Reg. No. 65,367) Danny E. Yonan (Reg. No. 53,812) Ian B. Soule (Reg. No. 74,290) Trevor M. O'Neill (Reg. No. 72,981) Sterne, Kessler, Goldstein & Fox P.L.L.C. 1101 K Street, N.W., 10th Floor Washington D.C., 20005 Telephone: (202) 371-2600 Facsimile: (202) 371-2540 jfitzsimmons-PTAB@sternekessler.com dyonan-PTAB@sternekessler.com isoule-PTAB@sternekessler.com toneill-PTAB@sternekessler.com PTAB@sternekessler.com Edgar H. Haug (Reg. No. 29,309) Robert E. Colletti (Reg. No. 76,417) Haug Partners LLP 745 Fifth Avenue New York, NY 10151 Telephone: (212) 588-0800 Facsimile: (212) 588-0500 ehaug@haugpartners.com rcolletti@haugpartners.com PTAB-Porsche@haugpartners.com

Respectfully submitted,

/ Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121)

Sangeeta G. Shah (Reg. No. 38,614)
David S. Bir (Reg. No. 38,383)
Brooks Kushman P.C.
150 W. Second St., Suite 400N
Royal Oak, MI 48067-3846
(248) 358-4400

Attorneys for Yechezkal Evan Spero

Certificate of Compliance Pursuant to 37 C.F.R. § 42.24

This paper complies with the type-volume limitation of 37 C.F.R. § 42.24. The paper contains 15 pages, excluding the parts of the paper exempted by §42.24(a).

This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(ii) and the type style requirements of § 42.6(a)(iii)&(iv).

Respectfully submitted,

Dated: March 6, 2024 / Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121)
Sangeeta G. Shah (Reg. No. 38,614)
David S. Bir (Reg. No. 38,383)
Brooks Kushman P.C.
150 W. Second St., Suite 400N
Royal Oak, MI 48067-3846
(248) 358-4400

Attorneys for Yechezkal Evan Spero