

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. 10,894,503 to Spero

Case No.: IPR2023-00328

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

* Porsche Cars North America, Inc., while filed a petition in IPR2023-01320, has been joined as a party to this proceeding.

TABLE OF CONTENTS

Table of Authorities	ii
List of Exhibits	iii
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.....	3
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.....	8
4. Dr. Turk Is Qualified in the Pertinent Art of Automotive Lighting and Lighting-Control Systems	10
5. Petitioner Attempts to Distract from its Unreasonable Technical Positions by Challenging Dr. Turk’s Experience.....	13
Certificate of Service.....	17
Certificate of Compliance Pursuant to 37 C.F.R. § 42.24	19

Table of Authorities

Cases

<i>Best Medical International, Inc. v. Elekta Inc.</i> , 46 F.4th 1346 (Fed. Cir. 2022)	9
<i>Chamberlain Grp v. One World Techs.</i> , 944 F.3d 919 (Fed. Cir. 2019)	6
<i>Daiichi Sankyo Co. v. Apotex, Inc.</i> , 501 F.3d 1254 (Fed. Cir. 2007)	8
<i>DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.</i> , 464 F.3d 1356 (Fed. Cir. 2006)	9
<i>In re NuVasive, Inc.</i> , 841 F.3d 966 (Fed. Cir. 2016)	6
<i>Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n</i> , 22 F.4th 1369 (Fed. Cir. 2022)	5, 6, 7, 8
<i>SEB S.A. v. Montgomery Ward & Co.</i> , 594 F.3d 1360 (Fed. Cir. 2010)	5
<i>Standard Oil Co. v. American Cyanamid Co.</i> , 774 F.2d 448 (Fed. Cir. 1985).	9
<i>Sundance, Inc. v. DeMonte Fabricating Ltd.</i> , 550 F.3d 1356 (Fed. Cir. 2008)	5

Other Authorities

Consolidated Trial Practice Guide November 2019	5
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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. 10,894,503, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00197, Paper 1, November 30, 2022
2005	Petition challenging U.S. Patent No. 10,894,503, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00328, Paper 2, December 16, 2022
2006	Second Declaration of Matthew A. Turk, Ph.D.
2007	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on August 2, 2023, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-01586
2008	Petition challenging U.S. Patent No. 9,995,551, <i>Volkswagen Group of America, Inc. v. Torchlight Technologies LLC</i> IPR2023-00318, Paper 2, December 22, 2022
2009	Declaration of Dr. Jiao, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00318, Exhibit 1003.
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, <i>Handbook of Optics</i> 3 RD 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

Exhibit No.	Description
	in Headlamp Photometric Performance,” SAE Technical Paper Series 2005-01-0861, (April 2005) (Available at https://www.sae.org/publications/technical-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, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00315, IPR2023-00318.
2019	Intentionally left blank
2020	Michael Bass, <i>Handbook of Optics</i> 3 RD 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-ww&DCM=yes&distId=10) (Accessed September 12, 2023.)
2023	<i>Intentionally left blank.</i>
2024	<i>Intentionally left blank.</i>

Exhibit No.	Description
2025	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on October 3, 2023, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00197, -00328, -00335
2026	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on January 29, 2024, <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> , IPR2023-00197, -00328, -00335
2027	Patent Owner Objection Response Letter – Service Copy <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> IPR2023-0328, August 14, 2023
2028	Patent Owner Objection Response Letter – Service Copy <i>Volkswagen Group of America, Inc. v. Yechezkal Evan Spero</i> IPR2023-0328, November 2, 2023

I. INTRODUCTION

The instant Motion to Exclude (Paper 34, “MTE”) stems from the Petitioner’s latest effort to pivot from its broad and ambiguous initial positions and backfill its Petition’s lack of particularity by attacking the Patent Owner’s (“PO”) expert. Petitioner’s originally proposed POSA level included experience with the broad all-encompassing terms “*area* of automotive lighting and lighting controls,” and a sliding scale between industry and academic experience. Now, in a last-ditch effort to revitalize its wanting Petition, Petitioner argues that the “area of automotive lighting and lighting controls” is so narrow that only its expert qualifies. Petitioner is wrong.

As an initial matter, Petitioner’s motion appears to incorrectly assume that 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. But because Petitioner proposed its new interpretation of POSA level for the first time in its Reply (Paper 25, 2-5), PO’s challenge in its Sur-Reply is timely. (Sur-Reply, 1–2.)

Notwithstanding PO’s Sur-Reply, Petitioner’s motion still ignores the seminal issue: whether optics and sensing/imaging experience fall within the “*area* of automotive lighting and lighting controls.” They do. Indeed, an application of the Federal Circuit factors guiding determination of a POSA level in view of the

'503 Patent, demonstrate that Dr. Turk's optics and sensing/imaging experience indisputably qualify him as both a POSA and an expert on all disputed issues—a fact that is supported by the Petitioner's own record testimony. Indeed, by Petitioner's own admission, the '503 Patent claims are “directed to adaptive motor vehicle headlights with light sources/clusters.” (MTE, 4.) Dr. Jiao has explained that optics (e.g., spatial light modulators) and sensors are important components of adaptive headlamps. (Ex.1003, ¶¶51–55; Ex.2007, 126:9–12.)

Knowing its shortcomings, Petitioner resorts to mischaracterizing testimony and fundamental disagreements labeling them as “evidence” of Dr. Turk's lack of knowledge on “common” terms. (MTE, 9–11.) A closer look, however, reveals a pattern of truncated record cites that 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, 3–5.) The MTE is a thinly veiled attempt to bolster the unreasonable technical positions of Petitioner's expert and as such should be denied.

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., 6; Ex.1003, ¶42 (emphasis added).) Petitioner also stated that “[t]he POSA may work as part of a team” and further 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.*, ¶¶42–43.)

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; Ex.2001, ¶¶32-33.) The Board adopted Petitioner’s proposed skill level and invited PO to address the proposed skill level, “during the trial[,]” if PO “believes that use of its proposal instead of Petitioner’s as modified would affect the analysis.” (DI, 8.) Meanwhile, Petitioner’s expert testified that the term “Automotive Lighting” is a broad term that includes optical and imaging systems, which effectively incorporated PO’s proposed POSA level and rendered any further dispute over POSA level moot.

In particular, per Dr. Jiao, his opinion on the level of a POSA is based on his teaching and industry experience. (Ex.1003, ¶44.) During his deposition, 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.” (*Id.*, 119:2–120:5.) 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.” (*Id.*, 14:1–16, 16:1–13.) Accordingly, based on Dr. Jiao’s testimony regarding the academic and industry inclusion of optics and imaging/sensing within “Automotive Lighting,” PO did not dispute Petitioner’s POSA level in its Response, nor the Board’s modification. (POR, 3.)

It was not until its Reply, that Petitioner revealed a new interpretation of its proposed POSA skill level, one that requires *specific* industry experience, with a “vehicle headlight company,” “an LED (or other light source) company,” **and** design experience **and** awards/patents on a “vehicle forward lighting.” (Reply, 4 (emphasis added).) Petitioner seems to fault Dr. Turk for not having the same exact CV as Dr. Jiao. There is no such requirement. As the ’503 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 (*see* Ex.2006, ¶¶25–34), there are very few experts that would have met Petitioner’s 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 (it was not) and proceeds to rely on *Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1377 (Fed. Cir. 2022). (MTE, 3.) As explained above, because PO’s POSA arguments were responsive to new arguments made by Petitioner in their Reply and consistent with the positions advanced in the preliminary response and objection responses (Exs. 2027, 2028), PO did not waive its right to raise the issue during the trial proceedings. Indeed, it is axiomatic that “based 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*

Techn., Inc., 944 F.3d 919, 924-925 (Fed. Cir. 2019) (citing *In re NuVasive, Inc.*, 841 F.3d 966, 971 (Fed. Cir. 2016)).

Nor is Petitioner's reliance on *Kyocera* apt. First, in *Kyocera*, the Commission adopted a party's POSA definition where the other party did not contest it. *Kyocera*, 22 F.4th at 1376. Here, not only the Board invited PO to address the skill level during trial (DI, 8), but also when Petitioner first articulated its new POSA interpretation, PO immediately challenged the interpretation, as imbuing the POSA with unsupported, hindsight-driven industry knowledge "so the reinterpreted POSA mirrors Dr. Jiao." (Sur-Reply, 1.) "Petitioner's myopic interpretation ... ignores how central optics, sensing and imaging are to the '503 Patent.")¹ Second, as reproduced in part below, in *Kyocera* the proposed POSA

¹ While Petitioner first suggested its new narrow interpretation of the POSA level in its objection to Ex.2001 on July 31, 2023 (Paper 14), it did not clearly articulate its new narrow interpretation of the POSA level until its Reply. Indeed, after receiving Petitioner's objections, PO promptly responded on August 14, 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, ¶43.)" (Ex.2027, 1-2; *see also* Ex.2028, 1-2.)

level was *highly specific*:

A person of ordinary skill in the art ... would have either (i) a Master's Degree in mechanical engineering with at least two years of experience in power nailer design; (ii) a Bachelor's Degree in mechanical engineering with at least five years of experience in powered nailer design; or, (iii) ten or more years of experience in powered nailer design. This experience in powered nailer design would include mechanical design, tool design, manufacturing, mechanics of materials, stress analysis, ergonomics, and human factors.

Kyocera, 22 F.4th at 1376 (emphasis in original).

In contrast, here the proposed POSA level related generally to the “*area* of automotive lighting and lighting-control systems” with no definition for either “automotive lighting” or “lighting control systems” and an undefined sliding scale. Petitioner's proposed skill level generally calls for experience in the “*area* of automotive lighting and lighting control systems,” which is undoubtedly broader than “automotive lighting and lighting control systems” or else the term “area” would be read out of the proposed definition. In any event, Dr. Turk's experience falls squarely within “automotive lighting” as Dr. Jiao uses the term outside of the PTAB, and therefore certainly within the **area** of automotive lighting. *Kyocera* is inapposite.

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) (citations omitted). 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 Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353-54 (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. Am. 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. (Ex.2006, ¶¶25–39.)

7-8. Petitioner ignores the patent’s “purpose” and patent teachings as a whole. As agreed by the parties, “the ’503 Patent’s purpose is ‘utilizing real-time sensor data for the purpose of adaptive illumination’ to ... prevent glare in visual task applications.” (Sur-reply, 2 (quoting Ex.2026, 11:18–12:1; 43:2–21).)

Petitioner’s analysis dismisses the relevance of optics and sensing for the POSA level, yet Petitioner states that “the claims are directed to **adaptive** motor vehicle headlights with light sources/clusters.” (MTE, 4 (emphasis added).) 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, ¶55 (emphasis added).) “When adaptive features [are] 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.*; Ex.1003, ¶55.)

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 that “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 UCSB 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, ¶43.) 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 ’503 Patent: “methods of using a multi-LED light source to segment a field of view and deliver varied, optimized illumination to the different segments within the field of view based on the presence of a detected

object therein, ‘covering a wide scope of applications’, including transportation.” (Ex.2006, ¶49; *see also* ¶¶47–54.) 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’s/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, 7.) However, adaptive automotive lighting, such as that claimed in the ’503 Patent is more sophisticated than just illumination, it includes sensors and vision technology to control the lighting. (Ex.1001, 14:63-15:3.) The ’503 Patent uses LED lighting “[t]o 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 sweeping questions devoid of context, *e.g.*, regarding intensity, Dr. Turk would provide appropriate context (“[intensity and brightness] can have different implications at times”)—yet, the MTE conveniently truncates his testimony. (*See* MTE, 8-11.) For example, when referencing Dr. Turk’s description of Beam (Ex.1005), Petitioner asked “What does ‘maximum intensity’ mean in the context of automotive lighting?” (Ex.1054, 103:7-14.) To provide context, Dr. Turk returned the discussion to the Beam reference, stating “In general, I don’t know. In this context [*i.e.*, in Beam], I think it means you can’t make it any brighter, any higher in terms of intensity.” (*Id.*, 103:17-20.) Petitioner also selectively edits Dr. Turk’s testimony to omit his answers 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 Dr. Turk “did not 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 (emphasis added).)

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 (emphasis added).) 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.) As a matter of policy, granting Petitioner’s motion would open the floodgates to expert exclusion gamesmanship at the PTAB.

Dated: April 2, 2024

Respectfully submitted,

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Certificate of Service

The undersigned hereby certifies that on April 2, 2024, a complete and entire copy of **PATENT OWNER'S OPPOSITION TO MOTION TO EXCLUDE AND EXHIBITS**, was served via electronic mail to the attorneys listed below:

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Respectfully submitted,

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