

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner,

v.

DDC TECHNOLOGY, LLC,

Patent Owner.

IPR2023-00707

U.S. Patent 9,420,075

PATENT OWNER'S SURREPLY

Table of Contents

Table of Contents	i
Patent Owner’s Exhibit List.....	iii
I. Introduction.....	1
II. PO Properly Defines the POSA and Keller is Not a POSA	2
III. Claim Construction.....	2
A. Petitioner’s Reading of Claim 7 is Incorrect.....	3
B. Petitioner’s Reading of Claim 8 is Incorrect.....	5
C. Lever.....	6
IV. Kondo/Chu Does Not Render the Challenged Claims Obvious	7
A. Claim 1	7
1. PO’s Expert Provided a Detailed Analysis of How a POSA Would Understand Kondo	10
2. PO Addressed the Combination Proposed by Petitioner	11
3. Petitioner’s Argument that Claim 1 is Agnostic to Touchscreen Technology is a Non Sequitur	12
4. PO’s Argument Doesn’t Rely on a “Few Scant Details”	12
5. Kondo’s Emphasis on Protection Against Static- Electricity Reflects a Surface-Capacitive Device	13

6.	Petitioner’s Arguments for Combining Kondo/Chu Don’t Cure the Unsuitability Problem	15
B.	Claim 7	16
C.	Claim 8	17
D.	Claim 10	18
E.	Claim 12	19
F.	Claim 18	20
G.	Claim 20	21
V.	Secondary Considerations	21
A.	Claim 1 is Entitled to a Presumption of Nexus	21
B.	Petitioner’s Argument on Long-Felt Need Attacks a Strawman.....	23
C.	PO Showed Evidence of Copying by Google.....	23
D.	Petitioner’s Employees Praised the Invention.....	25
E.	PO Provided Evidence that the Input Mechanism Increased Sales.....	26
	CERTIFICATE OF WORD COUNT	1
	CERTIFICATE OF SERVICE	2

Patent Owner's Exhibit List

<u>Exhibit Number</u>	<u>Description</u>
2001	Google's Reply in Support of its Motion to Stay Pending Determination of <i>Inter Partes</i> Review of the Patents-in-Suit Case No. 3:23-cv-01160, N.D. Cal., filed April 27, 2023, ECF 160
2002	Email dated June 5, 2023 from Michael Kiklis to Matt Holohan regarding Discovery
2003	Complaint for Patent Infringement Case No. 3:22-cv-01263, N.D. Tex., filed June 10, 2022, ECF 1
2004	First Amended Complaint for Patent Infringement Case No. 3:22-cv-01263, N.D. Tex., filed January 30, 2023, lodged publicly February 2, 2023, ECF 123
2005	HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY GOOG-DDC-0000040-GOOG-DDC-0000046 (See Paper 14 for additional description)
2006	HIGHLY CONFIDENTIAL – ATTORNEYS EYES ONLY GOOG-DDC-0000029-GOOG-DDC-0000039 (See Paper 14 for additional description)
2007	HIGHLY CONFIDENTIAL – ATTORNEYS EYES ONLY GOOG-DDC-0000024-GOOG-DDC-0000026 (See Paper 14 for additional description)
2008	HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY OPS000010-OPS000024 (See Paper 14 for additional description)

<u>Exhibit Number</u>	<u>Description</u>
2009	Google Inbound Services Agreement, last modified April 13, 2023, captured on June 22, 2023, from https://support.google.com/legal/answer/10039636?sjid=14045947512057405231-NA
2010	Google ISA and Reference Version History, captured on June 22, 2023, from https://support.google.com/legal/answer/10071677?hl=en#zippy=%2Cinbound-services-agreement-isa-archive
2011	Working with Alphabet/Google, captured on June 22, 2023, from https://support.google.com/corporate-suppliers/answer/9844770?hl=en&ref_topic=9902269#a&b&c&d&e&f&g
2012	Google Supplier Purchase Order Terms and Conditions, April 2023, captured on June 22, 2023, from https://support.google.com/corporate-suppliers/answer/9844474?hl=en&ref_topic=9902369&sjid=14045947512057405231-NA&visit_id=638230555166029102-814262976&rd=1
2013	Defendant Google LLC's Motion to Transfer Venue to the Northern District of California Under 28 U.S.C. § 1404(a) and to Sever Its Case, Together with Supporting Brief Case No. 3:22-cv-01263, N.D. Tex., filed November 10, 2022, ECF 94
2014	Defendant Landsberg Orora's Motion to Dismiss and Supporting Brief Case No. 3:22-cv-01263, N.D. Tex., filed September 13, 2022, ECF 68

<u>Exhibit Number</u>	<u>Description</u>
2015	HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY OPS000009, OPS000046, and OPS000056-OPS000060 (See Paper 14 for additional description)
2016	Memorandum Opinion and Order Case No. 3:22-cv-01263, N.D. Tex., filed March 14, 2023, ECF 139
2017	CONFIDENTIAL Haller Declaration
2018	Plaintiff DDC Technology, LLC’s Response in Opposition to Defendant’s Motion to Stay Lawsuit Pending Patent Office’s <i>Inter Partes</i> Review Case No. 3:22-cv-01263, N.D. Tex., filed June 7, 2023, ECF 145
2019	CONFIDENTIAL – ATTORNEYS’ EYES ONLY – PROTECTIVE ORDER MATERIAL OPS000009, OPS000046, and OPS000056-OPS000060 (See Paper 14 for additional description)
2020	ATTORNEYS EYES ONLY Email string (See Paper 14 for additional description)
2021	Capacitive vs. Resistive Touchscreens: What Are the Differences?, captured on July 12, 2023, from https://www.makeuseof.com/tag/differences- capacitive-resistive-touchscreens-si/
2022	Scheduling Order Case No. 3:22-cv-01263, N.D. Tex., filed December 20, 2022, ECF 106

<u>Exhibit Number</u>	<u>Description</u>
2023	Complaint for Patent Infringement against Mattel, Inc. Case No. 1:21-cv-01781, D. Del., filed December 21, 2021, ECF 1
2024	HIGHLY CONFIDENTIAL – OUTSIDE ATTORNEYS’ EYES ONLY DDC_010437-DDC_010446 (See Paper 14 for additional description)
2025	Google and Mattel partner to bring back the View- Master as a VR headset, captured on June 22, 2023, from https://www.theverge.com/2015/2/13/8033179/mattel-view-master-google-cardboard-vr
2026	Google Partners With Mattel to Bring VR to the Iconic View-Master captured on June 22, 2023, from https://www.wired.com/2015/02/google-mattel/
2027	Mattel’s View-Master gets a Google VR makeover captured on June 22, 2023, from https://www.cnet.com/tech/computing/google-mattel-announce-a-virtual-reality-view-master/
2028	Complaint for Declaratory Judgment and Injunctive Relief against MerchSource, LLC, et al. Case No. 3:17-cv-07088, N.D. Cal., filed December 13, 2017, ECF 1
2029	Petition for <i>Inter Partes</i> Review IPR2018-00494, U.S. Patent 9,420,075, filed January 15, 2018, Paper 2 DDC_003868-DDC_003949

<u>Exhibit Number</u>	<u>Description</u>
2030	Petition for Post Grant Review PGR2018-00020, U.S. Patent 9,811,184, filed January 15, 2018, Paper 2 DDC_007993-DDC_008071
2031	CONFIDENTIAL DDC_010483-DDC_010487 (See Paper 14 for additional description)
2032	CONFIDENTIAL DDC_010488-DDC_010492 (See Paper 14 for additional description)
2033	Buckley Declaration
2034	CONFIDENTIAL DDC_010511-DDC_010515 (See Paper 14 for additional description)
2035	Email from October 13, 2014 from Nartker to Buckley, Dalton, Zabarauskas, Rayford, Subject: New Cardboard Partnership Leads DDC_018503
2036	DODOcase Kickstarter Campaign identifying VR Viewers as “Patent Pending” DDC_018341-DDC_018356
2037	CONFIDENTIAL DDC_010613-DDC_010617 (See Paper 14 for additional description)
2038	MerchSource, LLC, et al Notice of Subpoena to Google, Inc. Case No. 3:17-cv-07088, N.D. Cal., served April 27, 2018

<u>Exhibit Number</u>	<u>Description</u>
2039	Defendant Google LLC’s Supplemental Objections and Responses to Plaintiff DDC Technology, LLC’s First Set of Interrogatories to Defendant Google LLC (No. 1) Case No. 3:22-cv-01263, N.D. Tex., served January 6, 2023
2040	Complaint for Patent Infringement against Unofficial Cardboard, Inc. Case No. 1:21-cv-05596, N.D. Ill., filed October 21, 2021, ECF 1
2041	HIGHLY CONFIDENTIAL – OUTSIDE ATTORNEYS’ EYES ONLY DDC_010418-DDC_010436 (See Paper 14 for additional description)
2042	HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY GOOG-DDC-0000365 (See Paper 14 for additional description)
2043	Email on August 27, 2015 from Google (WWGC) to DODOcase (Dalton), Subject: WWGC V2 Manufacturers Guide Available Now Including two documents from zip attachment titled “wwgc_manufacturers_kit_v2.0.zip”: “WWGC Guidelines and Best Practices.pdf” version 2.0, dated August 17, 2015; and “WWGC Viewer Profile and Badge Guidelines.pdf” version 1.0, dated April 16, 2015

<u>Exhibit Number</u>	<u>Description</u>
2044	Google Form for “Google Cardboard Manufacturers” to “Apply[] to the WWGC program” captured on June 22, 2023, from https://support.google.com/cardboard/manufacturers/contact/general
2045	Google Terms of Service, effective January 5, 2022, captured on June 22, 2023, from https://www.gstatic.com/policies/terms/pdf/20220105/it7r24p9/google_terms_of_service_en_us.pdf (the static pdf version of the Terms of Service available at https://policies.google.com/terms?hl=en)
2046	Market share of mobile phone touch screens worldwide from 2013 to 2020, by technology, captured on July 12, 2023, from https://www.statista.com/statistics/616468/mobile-phone-touch-technology-share-worldwide/
2047	CONFIDENTIAL Email string (See Paper 14 for additional description)
2048	Google Android Compatibility Definition Android 7.0, downloaded on July 21, 2023, from https://source.android.com/static/docs/compatibility/7.0/android-7.0-cdd.pdf
2049	Intentionally omitted
2050	Declaration of Bob Mackey
2051	Excerpts from the Oxford Dictionary of Mechanical Engineering (2013)
2052	Excerpts from The American Heritage Dictionary of the English Language, New College Edition (1981)
2053	Deposition Transcript of Kurtis Keller

<u>Exhibit Number</u>	<u>Description</u>
2054	Second Declaration of Patrick Buckley
2055	Google Analytics “Ecommerce Overview” report
2056	Google Analytics “Product Coupon” report
2057	Article titled, “1 Million Cardboard Headsets Shipped, Google Says,” obtained from the following URL: https://web.archive.org/web/20221210082644/https://www.roadtovr.com/1-million-cardboard-headsets-shipped-google-says/
2058	Article titled, “Google Ships Five Million Cardboard Virtual Reality Devices,” obtained from the following URL: https://www.reuters.com/article/us-alphabet-cardboard-idUSKCN0V5297/
2059	Article titled, “Google has Shipped Over 10 Million Cardboard VR Headsets,” obtained from the following URL: https://www.theverge.com/2017/2/28/14767902/google-cardboard-10-million-shipped-vr-ar-apps
2060	Video clip sent by Patrick Buckley to Google employees on July 25, 2014, in the email chain included as EX2034 in IPR2023-00707 & IPR2023-00708 and as EX2024 in IPR2023-00709 & IPR2023-00711
2061	A second video clip sent by Patrick Buckley to Google employees on July 25, 2014, in the email chain included as EX2034 in IPR2023-00707 & IPR2023-00708 and as EX2024 in IPR2023-00709 & IPR2023-00711
2062	Google Cardboard (I/O 2015) Technical Specification v.2.0
2063	Google Cardboard Best Practices – Version 3.0 (2020)
2064	Durovis Dive 5 web page identifying compatible phones, available at https://www.durovis.com/en/product.html?id=1#compatible
2065	Spreadsheet providing information regarding phones compatible with the Durovis Dive 5
2066	An article titled, “Google Partners with Mattel to Bring VR to the Iconic View-Master,” available at https://www.wired.com/2015/02/google-mattel/
2067	Screenshots from a video available at https://youtu.be/bJ0OCUqbwZM?si=_7WxKZW8oRIp0n11&t=176

I. Introduction

Petitioner has not shown that the claims of the '075 patent are invalid as obvious in view of Kondo/Chu.

Petitioner proposes an improper description of the POSA, suggesting that no detailed understanding of touch-screen technology is required (because its expert has no such experience). Petitioner proposes an improper POSA definition based on the general “field of invention” rather than the *claims* of the '075 patent. A POSA must understand the claimed inventions, which are directed to an input mechanism for inducing a touch event on a touchscreen of a mobile device enclosed in the housing of a VR viewer.

Petitioner’s disregard for touchscreen experience explains why the Petition and Reply are replete with technological misunderstandings that fail to rebut the testimony of PO’s expert explaining why a POSA wouldn’t have been motivated to combine Kondo/Chu. For example, it is critical that a POSA understand how differently projected-capacitive touchscreens (used in smartphones) and surface-capacitive touchscreens (used in, *e.g.*, ATMs) function. Claiming that a surface-capacitive touchscreen could be used in a mobile device is akin to claiming that apples could be used to make banana-cream pie. Bananas and apples are both fruits, but a pie artisan of ordinary skill knows they aren’t interchangeable.

Petitioner also relies heavily on attorney argument, including in discussing secondary considerations. Petitioner attempts to rewrite the emails of three different Google employees proclaiming the patented inventions to be “genius,” “ingenious,” and “really neat.” Rather than procure an affidavit from *any* knowledgeable Google employee, Petitioner’s attorneys supply their own spin to the only record evidence. If Petitioner’s characterization were accurate, presumably at least one Google employee could back it up.

II. PO Properly Defines the POSA and Keller is Not a POSA

Petitioner’s definition of a POSA emphasizes mechanical and optical experience and minimizes experience with mobile-device touchscreens. Petitioner’s expert has no substantive experience with touchscreens. Rather, Petitioner’s expert has experience with optics associated with head-mounted displays. The ’075 patent makes clear that the optics of the device (lenses) were well-known; thus, expertise in optics is superfluous. PO’s definition is correct because a POSA would need to understand the touchscreens suitable for use in mobile phones and how to induce a touch event on them.

III. Claim Construction

Petitioner’s claim-construction positions on the disputed issues consistently ignore the plain language and ordinary meaning. That is because Petitioner chose to rely on art that simply does not disclose those features. The Board should reject

Petitioner's effort to salvage its invalidity positions by broadening the claims to a point that would effectively nullify the relevant claim language.

A. Petitioner's Reading of Claim 7 is Incorrect

The parties agree that the '075 patent's *independent* claims cover both the preferred embodiment in which a human's electrical properties are not required to induce a touch event and the alternative embodiment that does rely on a human's electrical properties. Reply, 3. But as PO's expert testified, *dependent claim 7* is directed specifically to the embodiment that doesn't require the human's electrical properties. Claim 7's language confirms that the shield is purposely sized such that the shield itself provides sufficient capacitance to induce a touch event. EX2050, ¶33. That is confirmed by the specification's very similar language describing the embodiment that does not require a human's electrical properties. *Id.*, ¶34; *see Enzo Biochem v. Applera*, 780 F.3d 1149, 1156 (Fed. Cir. 2015) ("we are using the specification to more fully understand what the patentee claimed").

Ignoring the claim language and the specification's preferred embodiment, Petitioner relies on incorrect *attorney argument* to assert that electrically coupling the electric shield and the user "***gives*** the electric shield capacitive properties." Reply, 5 (emphasis added). But Petitioner provides no evidence that coupling an electric shield to a user's body alters the electrical shield's value as a capacitor; rather, electrically coupling the electric shield and the user creates a different

electric circuit—introducing the human into the circuit along with the touchscreen and the electric shield (similar to Chu). This new circuit can have greater total capacitive value because, *inter alia*, the human body increases the total area. EX2050, ¶34. But that new circuit wouldn’t satisfy the language of claim 7, which indicates that the electric shield itself provides sufficient capacitance.

Petitioner’s argument isn’t helped by the ’075 patent’s statements that the detailed description is intended to be illustrative. Dependent claims are frequently directed to preferred embodiments. *See RF Delaware v. Pac. Keystone Techs.*, 326 F.3d 1255, 1264 (Fed. Cir. 2003) (“An independent claim usually covers a scope broader than the preferred embodiment, especially if the dependent claims recite the precise scope of the preferred embodiment.”).

Petitioner’s misinterpretation would also violate the principle that “dependent claims are presumed to be of narrower scope than the independent claims from which they depend.” *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1242 (Fed. Cir. 2003). Specifically, under Petitioner’s interpretation, claim 7 would add no meaningful limitation to claim 1 (as becomes especially clear when factoring in Petitioner’s construction of “electric shield”).

Petitioner’s reliance on the specification at 8:52-55 is misplaced. First, this passage does not address the size of the electric shield’s surface as a whole. Instead, it describes using a compressible pad to create the *contact surface* between

the electric shield and the touchscreen—a feature recited in claim 10. EX1001, 8:52-55. The disputed language of claim 7, in contrast, relates to the size of the electric shield’s (total) surface, not just the contact area.

Second, Petitioner’s unsupported argument that column 8:52-55 somehow indicates that the electric shield is sized based on criteria unrelated to capacitance ignores the claim language. Claim 7 refers to sizing the electric shield’s surface with reference to the resulting capacitance. This is consistent with the testimony of PO’s expert indicating that a POSA would understand that the value of a capacitor is proportional to the area of its plates. EX2050, ¶34. That col. 8:52-55 didn’t mention capacitance is irrelevant. Petitioner’s unsupported “simple experiment” likewise fails because it focuses only on contact area, ignoring the *total* surface area. *Id.* To the extent Petitioner argues that the electric shield’s total surface area is irrelevant, such attorney argument cannot overcome PO’s unrebutted expert testimony.

B. Petitioner’s Reading of Claim 8 is Incorrect

Like Claim 7, Claim 8 is directed to the preferred embodiment whereby the human’s electrical properties are not required to induce a touch event. This is confirmed both by (1) the plain language of the claim and (2) how closely claim 8 tracks the specification’s description of that embodiment (*cf.* EX1001, 13:25-31, 7:52-56); EX2050, ¶¶42-43, ¶45.

This is reinforced by the additional language in claim 8 reciting “in the absence of human contact with the electric shield.” PO’s expert testified a POSA would understand this to mean that electrical coupling between the human user and the electric shield is not required. EX2050, ¶44. The specification confirms that understanding by contrasting the preferred embodiment that *is* able to induce a touch event “in the absence of human contact with the electric shield” with the alternative embodiment in which the “electrical properties of the user’s body can be utilized to induce the touch input.” *Id.*; EX1001, 7:56-61.

Petitioner mischaracterizes PO as arguing that claim 8 excludes physical contact between the human and electric shield. PO argued that claim 8’s electric shield is sufficient to induce a touch event without *requiring* the human’s electrical properties; PO did not argue that claim 8 excludes physical contact between the human and the shield. POR, 10-11. In short, claim 8’s electric shield is sufficient to induce a touch event without requiring the human to contribute capacitance (*e.g.*, while wearing gloves).

C. Lever

Petitioner’s argument that the Oxford Dictionary of Mechanical Engineering is irrelevant because the claimed invention is “electromechanical” overlooks that the lever itself is mechanical. *See Phillips v. AWH*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (“dictionaries, and especially technical dictionaries ... can assist the court”).

Petitioner’s argument that the American Heritage dictionary is irrelevant because it refers to a lever as a simple machine is misplaced. A “simple machine” like a lever can be incorporated into a more complex machine.

Petitioner also argues that its own product (which PO has accused of infringement) doesn’t include a lever that pivots on a fulcrum. First, this “is an issue relevant to infringement, not claim construction.” *Parallax Group v. Incstores*, 2017 U.S. Dist. LEXIS 182066, at *9 (C.D. Cal. Jun. 30, 2017). Second, the hinge of Petitioner’s product could satisfy the “flexible linkage” element while also serving as the fulcrum on which the lever pivots. In arguing otherwise, Petitioner conflates the lever with the fulcrum on which the lever pivots.

Finally, that PO and the inventor have referred to the input mechanism of the inventor’s product as a “button” is irrelevant because the inventor’s product (unlike Chu) did include a lever consistent with PO’s construction. IPR2018-00494, paper 34 at 18; POR, 59-63. PO’s comments therefore do not justify Petitioner and its expert’s effort to stretch the term “lever” so it would cover even the button of a ballpoint pen. EX2053, 97:9-98:10.

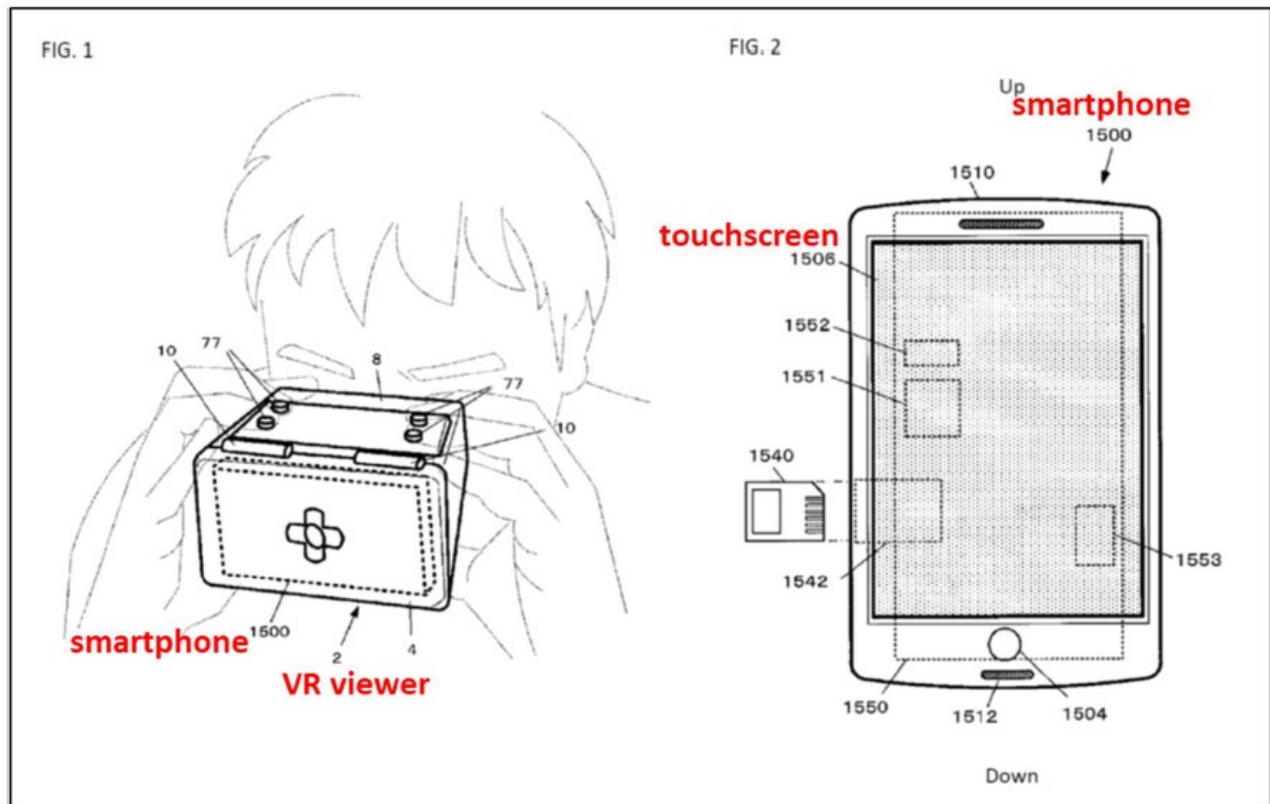
IV. Kondo/Chu Does Not Render the Challenged Claims Obvious

A. Claim 1

A POSA would not have been motivated to combine Kondo with Chu as Petitioner proposes. EX2050, ¶66. Claim 1(a) recites “[a] virtual reality viewer for

use with a mobile electronic device having a touch-screen.” EX1001, 12:25-26.

Petitioner’s combination relies on Kondo’s touch panel 1506 as satisfying the “mobile electronic device having a touch-screen” language:



Petition, 44; *id.* at 43 (“Figures 1 and 2 of Kondo below show a VR viewer 2 that encloses a smartphone 1500 with a touch-screen display 1506.”).

PO’s expert provided detailed testimony explaining why a POSA (1) would have understood that Kondo’s touch panel 1506 operates as a surface-capacitive touchscreen (and, thus, would not have been a *smartphone* in 2014). EX2050, ¶¶55-64. He based this testimony on Kondo’s (1) current-based method of touch-location detection; (2) emphasis on static-electricity protection; and (3) attempt to

provide a reference ground for a user of the device. *Id.* As PO's expert testified, projected-capacitive and surface-capacitive touchscreens operate very differently and are therefore used in different applications (*e.g.*, projected-capacitive touchscreens are used in smartphones, while surface-capacitive touchscreens are used in, *e.g.*, ATMs). EX2050, ¶¶68-72. Thus, he testified that a POSA wouldn't have been motivated to combine Kondo/Chu as proposed. EX2050, ¶¶66-75.

PO's expert possesses the requisite understanding of touchscreen technology. EX2050, ¶5. He holds twenty-seven patents for innovations in capacitive-touch sensing. *Id.* He is therefore well-qualified to recognize Kondo's description of touch panel 1506 as a *surface*-capacitive touchscreen. *Id.*, ¶6.

On the other hand, Petitioner's expert was unfamiliar with surface-capacitive touchscreens. EX2053, 44:24-50:1, 32:19-33:6. He understood enough to concede that Kondo did not accurately describe a projected-capacitive touchscreen, but not enough to recognize that Kondo describes a surface-capacitive touchscreen. EX2053, 58:22-62:17, 144:4-147:1. Petitioner's expert testified that he "didn't make any distinguished differences between a capacitive touchscreen and what you call here a surface capacitive touchscreen." *Id.*, 146:24-147:1. But this is like someone saying they don't make distinctions between a car and an airplane since both are vehicles. There are profound differences between a surface-capacitive touchscreen and a projected-capacitive touchscreen. As PO's expert testified,

surface-capacitive touchscreens use a current-based method of touch-location detection. EX2050, ¶¶58. This is suitable for use in large devices like ATMs, but it wasn't possible or desirable to integrate a surface-capacitive touchscreen into a smartphone. EX2050, ¶¶65, 68. In contrast, projected-capacitive devices detect a change in mutual capacitance between multiple drive and sense electrodes, allowing them to process multitouch gestures and rendering them so well-suited to smartphones that they became ubiquitous. *Id.*, ¶¶58, 74-75.

Petitioner's Reply fails to meaningfully rebut the testimony of PO's expert, whom they opted not to depose. Nor did Petitioner offer rebuttal declarations or other reply evidence, relying instead on attorney argument.

1. PO's Expert Provided a Detailed Analysis of How a POSA Would Understand Kondo

PO's expert did not "rewrite" Kondo. While Petitioner notes that Kondo uses the term "projected capacitive" in one instance (EX1003, ¶0024), even Petitioner's expert admitted this paragraph did not accurately describe the operation of a projected-capacitive device. He testified that "[i]t's not fully accurate," that its reference to an impedance-imparting body was "strange," and that its reference to alternating currents was "weird." EX2053, 145:6-23.

PO's expert explained that a POSA would understand based on Kondo's disclosure that touch panel 1506 is a surface-capacitive touchscreen. For example,

he testified that Kondo's ¶0024 goes on to describe the operation of touch panel 1506 in a manner exclusive to a surface-capacitive touchscreen (and inconsistent with a projected-capacitive touchscreen). EX2050, ¶¶56-57. He also provided detailed testimony explaining several other passages in Kondo describing a surface-capacitive system. EX2050, ¶¶55-64.

2. PO Addressed the Combination Proposed by Petitioner

The Petition relies exclusively on Kondo to satisfy claim 1(a)'s language reciting "[a] virtual reality viewer for use with a mobile electronic device having a touch-screen" without mention of Chu. The Petition makes no argument that it would have been obvious to incorporate Chu's *touchscreen* into Kondo and, therefore, relies solely on Kondo to satisfy this limitation. Petition, 37-39. The Board should disregard any effort by Petitioner to belatedly revise its proposed combination to swap out Kondo's touch panel 1506 for something else. *See* Consolidated Trial Practice Guide, 73 (Nov. 2019) (Petitioner is prohibited from "submit[ting] new evidence or argument in reply that it could have presented earlier, *e.g.*, to make out a prima facie case of unpatentability."); *see also Ariosa Diagnostics v. Verinata Health*, 805 F.3d 1359, 1368 (Fed. Cir. 2015); *Resideo Technologies v. Ubiquitous Connectivity*, IPR2019-01335, Paper 38, 34.

3. Petitioner’s Argument that Claim 1 is Agnostic to Touchscreen Technology is a Non Sequitur

Petitioner’s argument that claim 1 isn’t limited to touchscreen technology is a non sequitur. Kondo discloses a surface-capacitive touchscreen, and a POSA wouldn’t have been motivated to use that touchscreen to create Petitioner’s proposed combination. EX2050, ¶¶66-75. Even if claim 1 was agnostic to touchscreen type, that wouldn’t supply the lacking motivation.¹

4. PO’s Argument Doesn’t Rely on a “Few Scant Details”

Petitioner’s fourth argument is misplaced. PO’s expert quoted a specific section of ¶0024 to explain that Kondo’s current-based method of touch detection describes a surface-capacitive system (not a projected-capacitive system). EX2050, ¶¶55-57. PO’s expert then testified that Kondo’s ¶0048 similarly refers to a current-based method of touch-location detection, confirming that touchscreen 1506 is a surface-capacitive device. EX2050, ¶58. Petitioner provided no response.

Kondo’s statement in ¶0024 that “the method for calculating such contact position can be a known technique as appropriate” is not inconsistent with the testimony of PO’s expert. In fact, PO’s expert cited a textbook where a POSA

¹ Moreover, a POSA would have known that it would have been effectively impossible to implement a surface-capacitive touchscreen in a mobile-electronic device. EX2050, ¶65.

could look up resources to calculate the contact position in a surface-capacitive touchscreen. EX2050, ¶57.

5. Kondo’s Emphasis on Protection Against Static-Electricity Reflects a Surface-Capacitive Device

Petitioner’s fifth argument is technically flawed. PO’s expert cited several passages supporting his testimony that Kondo’s emphasis on static-electricity protection, a concern unique to surface-capacitive devices, confirms that touchscreen 1506 is surface-capacitive. EX2050, ¶59 (citing EX1003, ¶¶0012, ¶¶0033, ¶¶0036, ¶¶0039, ¶¶0042).

Petitioner’s unsupported *attorney argument* that Kondo is concerned about preventing a malfunction in the touch circuit leading from a user’s finger to the touchscreen rather than a malfunction in the touchscreen itself is incorrect. The “touch circuit” (element 70, Fig. 7) is a wire, which is a passive conductor. Petitioner offers no evidence that a simple wire would be prone to any sort of “malfunction” (or what malfunction a simple wire could experience). As PO’s expert testified, a POSA would understand that Kondo’s concern is a malfunction of the operation of the touchscreen. See EX2050, ¶59. This is supported by Kondo’s statement that “the holding side ground circuit part 48 ... removes static electricity from the main body of the smartphone 1500 via the device holding plate 44.” EX1003, ¶¶0036; EX2050, ¶59.

Petitioner’s argument that Kondo’s ¶0039 “merely describes the type of material that electrical wire 72 is made of, not the function it performs” (Reply, 14) conflicts with Kondo’s statement that the wire “dissipates static electricity.” As PO’s expert testified, this use of wire 72 to dissipate static electricity describes a surface-capacitive touchscreen. EX2050, ¶59.

Finally, Petitioner incorrectly argues that Kondo’s ¶0057 conflicts with the testimony of PO’s expert that “a stable reference ground is critically important” in a surface-capacitive touchscreen. EX2050, ¶63. Kondo’s ¶0057, a single paragraph describing “Other Modified Examples,” indicates that the circuit for grounding could be omitted. This does not conflict with PO’s expert testimony regarding the importance of a stable reference ground, as his preceding sentence expressly states that the signal reference “need not be a truly low-resistance connection to the earth,” consistent with Kondo’s ¶0057. Moreover, Kondo’s primary embodiment, covering ¶¶0021-0056 *does* use a grounding circuit for precisely the purpose a POSA would expect in a surface-capacitive touchscreen. This disclosure reflects a hallmark of surface-capacitive devices. EX2050, ¶61-63. On the other hand, it would be unnecessary in a projected-capacitive touchscreen. *Id.*, ¶63.

6. Petitioner’s Arguments for Combining Kondo/Chu Don’t Cure the Unsuitability Problem

Despite the foregoing, Petitioner argues that a POSA would nonetheless have been motivated to combine Kondo/Chu to (1) enable varying inputs (*e.g.*, according to input pressure); (2) allow swipe input; and (3) waterproof the device/allow it to be cleansed more easily. None of these arguments address the unsuitability of Kondo’s surface-capacitive touchscreen to the invention recited in claim 1.

Chu’s ability to apply different amounts of pressure or allow swipe input does not change the fact that Kondo’s surface-capacitive touchscreen is unsuitable for use in the proposed combination due to technical problems in implementing a surface-capacitive touchscreen in a mobile device. EX2050, ¶¶67-69. Moreover, PO’s expert provided unrebutted testimony that surface-capacitive touchscreens like Kondo’s were unable to “identify and report two touch events,” which “makes them unsuitable for use in multi-touch user interfaces.” EX2050, ¶68.

The same is true of Petitioner’s assertions about waterproofing a device for use underwater or to facilitate cleaning. A waterproof housing wouldn’t somehow render Kondo’s surface-capacitive touchscreen suitable for use in a VR viewer for use with a mobile device (waterproof or not)—indeed, PO’s expert testified it would be impossible. EX2050, ¶65. Likewise, Petitioner’s assertion that Chu’s

input mechanism would work with *resistive* touchscreens does not render Kondo's *surface-capacitive* touchscreen suitable for the proposed combination.² Equally misplaced is Petitioner's reliance on the teachings of the Compton reference and PO's specification regarding input mechanisms that could work with resistive touchscreens.³ Since Kondo's touchscreen—which Petitioner's obviousness combination relies upon—is not a resistive touchscreen, Compton's teachings would not somehow motivate a POSA to make the proposed combination. As PO's expert testified, a POSA would have known with certainty that it was impossible to do so. EX2050, ¶65.

B. Claim 7

Petitioner's arguments on claim 7 fail because they rely solely on its overbroad claim interpretation.

² Petitioner provides no evidence rebutting PO's evidence that resistive touchscreens had effectively no market share in 2014. EX2050, ¶70; EX2046. Nor do they provide meaningful evidence that any smartphones with resistive touchscreens still in use would have had sufficient processing power for VR applications. EX2050, ¶71. Petitioner's expert wasn't aware of any publicly available apps that functioned on a smartphone with a resistive touchscreen. EX2053, 140:3-142:6.

³ The Examiner allowed the '075 patent after considering Compton. The Petition did not cite Compton as a ground of unpatentability.

C. Claim 8

Petitioner's primary argument on claim 8 fails because it relies on its overbroad claim interpretation.

Petitioner's alternative argument relying on Kondo's capacitive element also fails while confirming PO's arguments. EX2050, ¶88. The very reason for Kondo's alternative embodiment using the capacitive element is that Kondo does **not** disclose an electrical shield having sufficient capacitive properties to induce a touch event without requiring a human's electrical properties. EX2050, ¶90. Otherwise, the capacitive element wouldn't be necessary. *Id.* Thus, the introduction of Kondo's capacitive element into Petitioner's proposed combination still wouldn't involve an electric shield "sized to have sufficient capacitive properties" to induce a touch event.

Finally, Petitioner wrongly asserts that PO had "no response" to Petitioner's argument that both Kondo and Chu's electric shields are sized to have sufficient capacitive properties to induce a touch event. Regarding Chu, PO's expert testified that "[t]he probe pad 30 of Chu's input mechanism is not sufficient by itself to induce a touch event." EX2050, ¶85; *id.*, ¶¶83-84, 87. And PO's expert testified that Kondo does not disclose "that its touch pad 76, which Petitioner calls an electrical shield (Petition, 85), is sufficient to induce a touch event" in either its primary embodiment or its alternative embodiment. EX2050, ¶90.

D. Claim 10

Chu does not disclose any conductive material behind its probe pad 30. Nothing in Chu would indicate that the unlabeled white space shown in Chu's Fig. 4 is conductive padding. EX2050, ¶¶96-97.

PO's expert did not rewrite Chu's disclosure regarding the flow of electric charge between the touchscreen and the user's finger. Rather, PO's expert testified that a POSA would understand that Chu's process involves "polarization" current rather than "charge transferred." EX2050, ¶99. Thus, a POSA wouldn't accept Petitioner's conclusion that Chu's Fig. 4 means electric charge is transferred between the touchscreen and the user's finger and wouldn't assume there must be padding in the white space behind probe pad 30. *Id.*

Moreover, PO's expert explained that a POSA would understand that no conductive padding behind probe pad 30 is required to achieve electrical coupling between Chu's probe pad and button. Rather, a POSA would understand that the probe pad is electrically coupled to the button via sleeve 28 and shaft 14, allowing Chu's input mechanism to operate without any conductive padding. EX2050, ¶¶100-101.

Petitioner provides no meaningful response to PO's expert.

E. Claim 12

Petitioner concedes that if a lever refers to something that pivots on a fulcrum, its proposed combination fails.

Petitioner incorrectly asserts that PO does not dispute that Kondo/Chu discloses a “lever” having a “handle.” PO’s expert testified that the proposed Kondo/Chu combination does not include a handle (Chu discloses a button) and that a POSA wouldn’t have been motivated to replace the Chu button with a handle. EX2050, ¶114 (citing Ex. 1004, ¶0059). Petitioner provides no response.

Petitioner also fails to rebut PO’s argument that Kondo/Chu fails to disclose the claimed flexible linkage. EX2050, ¶108. Petitioner’s attorney argument is contradicted by Chu’s express description: “a biasing member adapted to urge the probe head *away from the touch screen*.” EX1004, ¶0016 (emphasis added). And Petitioner’s argument that it would be “extraordinarily difficult” to move Chu’s probe pad *to the activated position* without the biasing member is unsupported and irrelevant.

Petitioner also fails to show that Chu’s biasing member is “coupled” to the housing. Its cited cases each construed “coupled” as requiring a *connection* (which involves joinder). Mere physical contact is not a connection. There is no support for Petitioner’s belated attorney argument that Chu’s biasing member is physically attached to the housing just because its figures don’t show lateral movement. The

figures do not inherently disclose coupling; that is not the *necessary* conclusion from Chu's disclosure.

F. Claim 18

Petitioner offers no meaningful response to PO's expert testimony providing a straightforward explanation of claim 18 and refuting Petitioner's assertion that it is internally inconsistent. EX2050, ¶¶117-118. Moreover, Petitioner continues to rely on its inability to map claim 18 to the embodiment shown in Fig. 7A even though it didn't dispute PO's explanation that claim 18 is directed to a *different embodiment* than that shown in Fig. 7A. That Petitioner still professes confusion about claim 18 is dubious given that its own product has an electric shield that includes one surface that contacts the touch screen (yellow circle) and another surface that covers the portion of the input mechanism that a user touches (red circle):



POR, 68, 90 (annotations added).

G. Claim 20

Petitioner's arguments on claim 20 fail for the reasons discussed regarding claim 12.

V. Secondary Considerations

A. Claim 1 is Entitled to a Presumption of Nexus

Petitioner's attorney argument and conclusory attacks on PO's evidence – showing that the DODOcase product was coextensive with claim 1 – constitute an improper rebuttal. *See Polaris Indus. v. Arctic Cat*, 882 F.3d 1056, 1071 (Fed. Cir.

2018) (patentee entitled to presumption of nexus based on unrebutted evidence that its commercial products were the inventions of the challenged claims).

Petitioner also incorrectly asserts that PO's secondary-considerations argument "broadens the alleged invention to any conductive/capacitive input mechanism on a VR viewer." Reply, 25. That is wrong. PO showed that the DODOcase product included the *specific* capacitive input mechanism recited in claim 1. POR, 61-66. Likewise, PO showed that Petitioner copied the *inventive* input mechanism recited in claim 1. POR, 67. As Petitioner concedes, the claimed input mechanism overcame the Compton reference cited during prosecution. Reply, 25. Kondo likewise does not teach the claimed input mechanism at least because its touch pads are always in contact with the touchscreen. EX2050, ¶69.

While Petitioner also relies on its own proposed Kondo/Chu combination to rebut nexus, such hindsight would create a circular argument in which the *proposed* combination is itself used as evidence against those secondary considerations. That would nullify secondary's considerations' role in the law: "The objective indicia of non-obviousness play an important role as a guard against the statutorily proscribed hindsight reasoning in the obviousness analysis," which "may often be the most probative and cogent evidence in the record." *Polaris*, 882 F.3d at 1071. Moreover, PO's expert explained why the Kondo/Chu combination wouldn't have been obvious. EX2050, ¶¶66-75.

Next, Petitioner's allusion to its own alleged internal work (which its own employee characterized as a brief experiment that wasn't fully refined) fails because (1) it was non-public; (2) Petitioner provides no evidence it included the claimed features; and (3) Petitioner provides no testimony from a knowledgeable person regarding that internal work. EX2034 at 3. Petitioner's *attorney argument* baselessly implies that Petitioner contributed to PO's invention and such contributions were included in Mr. Buckley's provisional application. Reply, 26. Petitioner presents no evidence for this outlandish claim – if any employee of Petitioner could aver such statements under penalty of perjury, Petitioner would have made such testimony "Exhibit A." The undisputed evidence is that Mr. Buckley worked alone and filed his provisional application *before* he met with Google personnel. EX2033, ¶2; EX1023, 64:3-21.

B. Petitioner's Argument on Long-Felt Need Attacks a Strawman

Similarly flawed is Petitioner's assertion that there was no long-felt need because conductive/capacitive input mechanisms for VR viewers were known. The claimed invention recited a particular type of input mechanism that was neither described in the prior art nor commercially available.

C. PO Showed Evidence of Copying by Google

Contrary to Petitioner's suggestion, PO provided evidence that Google copied DODOcase's product rather than just the patent's claims. That is precisely

the type of evidence the Federal Circuit indicated could show secondary considerations in *Medtronic, Inc. v. Teleflex Innovations*, 70 F.4th 1331, 1339 (Fed. Cir. 2023) (cited by Petitioner): “[C]opying by a competitor is a relevant consideration in the objective indicia analysis and therefore may be evidence that the patented invention is nonobvious.” That is because “[t]he fact that a competitor copied the patentee’s invention, rather than one within the public domain, is probative of nonobviousness because it suggests the competitor saw value in the invention that he could not achieve without copying.” *Id.* (quot. omitted). The same rationale would not apply if the alleged copyist arrived at a similar design independently. *Id.*, 1339-40. Thus, “copying must be supported by actual evidence of copying efforts as opposed to mere allegations regarding similarities between the accused product and a patent.” *Id.*, 1340 (quot. omitted).

Here, the undisputed evidence shows that Mr. Buckley sent videos of his prototype in July 2014, prompting three Google employees to praise his device as “*genius*,” “*ingenious*,” and “*really neat!*” EX2034; EX2054, ¶11; EX2060; EX2061. In September 2014, DODOcase launched its V1.2 VR Viewer. EX2033, ¶7. One of those same Google employees confirmed to Mr. Buckley that Google had received a V1.2 VR Viewer in October 2014. EX2035. Several months later, Google launched its own GCV2 VR viewer which “copied DODOcase by

incorporating a similar capacitive button as provided on the DODOcase VR 1.2 Viewer.” EX2054, ¶4.

Thus, PO provided actual evidence of copying as opposed to mere similarities between the patent and accused product. The claim charts showing how both DODOcase’s product and Petitioner’s product practiced ’075 claim 1—including the claimed input mechanism specifically—serve to show that Petitioner’s copying included the claimed invention (as opposed to irrelevant features). While Petitioner alleges there is a “remarkable difference” between its input mechanism and DODOcase’s, it cites no law holding that the products must be identical; nor did it deny that its input mechanism practices the claim.

D. Petitioner’s Employees Praised the Invention

When Mr. Buckley sent videos of his prototype to Petitioner, three different employees responded with the following: (1) “That button looks really neat! Thanks for sharing”; (2) “That’s an ingenious button! ... I’d love to play with it”; and (3) “That button is genius.” EX2034, 1, EX2033, ¶¶2-6. Petitioner responds with *attorney argument* asserting that they weren’t praising the invention but instead merely encouraging Mr. Buckley. The words of those employees contradict Petitioner’s argument—the comments were specifically directed toward the inventive input mechanism and the context confirms that they had never seen (nor made) anything like it. If any of these Google employees could have testified to

Petitioner's attorney argument, Petitioner would have provided a sworn affidavit. It didn't.

Equally irrelevant is Petitioner's assertion that it provided marketing opportunities and the like, which "assistance" is unrelated to Mr. Buckley's independent invention and doesn't negate the praise of Petitioner's employees for that invention.

E. PO Provided Evidence that the Input Mechanism Increased Sales

PO is entitled to a presumption of nexus between increased sales and the claimed invention. *See Polaris*, 882 F.3d at 1071. To rebut this presumption, a challenger must "present[] evidence to show that the commercial success was due to extraneous factors other than the patented invention ... such as additional unclaimed features and external factors, such as improvements in marketing." *Id.* at 1072 (quot. omitted). Importantly, "a patent challenger cannot successfully rebut the presumption with argument alone—it must present evidence." *Id.* (quot. omitted).

Petitioner presented no evidence that increased shipments were driven by unclaimed features. The key difference between Google Cardboard V1 and V2 was the input mechanism changing from magnetic to capacitive. EX2004, ¶¶55-65. Petitioner provides no evidence that the increased shipments after the introduction of Cardboard V2 was due to the continued growth of the WWGC program.

Petitioner relies solely on attorney argument – submitting no testimony from any knowledgeable Google employee. Petitioner’s attorney argument must be rejected.

On the other hand, PO provided evidence that the increased shipments were driven by switching from a magnet input to an improved capacitive-input mechanism. Not long after Petitioner praised PO’s innovative capacitive-touch input mechanism, Petitioner released its own updated specs for a similar capacitive-touch input mechanism on the same VR headset body. EX2043; EX2004, ¶¶51-54. Mr. Buckley testified that “it quickly became adopted by pretty much everyone in the market, because it was such an improvement over the magnetic button” of the previous design. EX1023, 159:7-15. For example, the magnetic input didn’t work well with certain Android functionality (EX1023, 25:19-27:4), whereas Mr. Buckley’s invention worked with all smartphones and could induce various types of touch events. EX1001, 3:6-24, 11:5-23. Moreover, Mr. Buckley’s invention eliminated a choking hazard presented by the magnet. EX2034, 4. Mr. Buckley was well-positioned to testify about the market response because DODOcase was “one of the main manufacturers” of such headsets, so “we kept close track of other competitors’ products. And noticed that there was this shift. I also recall at the time, that the products listed on the WWGC page, you know, products with this capacitive touch button ... quickly became the most prominent ones.” EX1023, 159:16-25.

Mr. Buckley also provided testimony, citing public reports, regarding the increase in shipments after Petitioner implemented its new design. EX2054, ¶20. While Petitioner attacks these news sources, they specifically referenced information provided by Petitioner. EX2057-EX2059. A February 2017 article reporting that over 10 million Cardboard units had shipped even linked to a *Google blog post* as its source. EX2059. Moreover, Petitioner filed a spreadsheet (EX1024) providing information regarding Cardboard-viewer shipments.

[REDACTED]

[REDACTED] (cf. EX2057, reporting on 2015-06-02 that “more than 1 million” had shipped); [REDACTED] [REDACTED] (cf. EX2058, reporting on 2016-01-27 that “5 million units” had shipped); and [REDACTED] (cf. EX2059, reporting on 2017-02-28 that “over 10 million” had shipped).

Petitioner cites no evidence that increased Cardboard shipments were more modest than Mr. Buckley testified. Petitioner did not even cite to Exhibit 1024 to support its argument, much less provide testimony from someone knowledgeable about its contents.⁴ Petitioner’s spreadsheet does not distinguish between different

⁴ Petitioner’s PTAB counsel submitted a declaration authenticating the spreadsheet, yet he identified no basis for personal knowledge regarding its contents. EX1025.

input types (i.e., magnet or capacitive). EX1024. Thus, Mr. Buckley's testimony remains the only actual evidence, including his testimony that the market quickly abandoned magnet inputs after Petitioner introduced the V2 design incorporating the capacitive-touch input mechanism copied from Mr. Buckley. Therefore, Petitioner failed to rebut Mr. Buckley's testimony.

Dated: June 5, 2024

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that the foregoing Patent Owner's Preliminary Response contains 5,597 words, excluding the portions exempted by 37 C.F.R. § 42.24(a)(1), as measured by the word-processing software used to prepare the document.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a) and (b), I certify that on the date indicated below, a true and accurate copy of the foregoing document was served on the following counsel for Petitioner via e-mail, pursuant to Petitioner's consent to e-mail service:

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