

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG
ELECTRONICS AMERICA, INC.
Petitioners

v.

MANUFACTURING RESOURCES
INTERNATIONAL, INC.
Patent Owner

IPR2023-00255
Patent 9,629,287

PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit	Description
2001	MRI-ITC-1331_0000435123-24 (4/24/2020 Romulus Stoain email to Dunn)
2002	MRI-ITC-1331_0000435125-27, Mutual Non-Disclosure Agreement
2003	MRI-ITC-1331_0000435133-34 (5/4/2020 Romulus Stoain email to Dunn)
2004	Intentionally Omitted
2005	Office Action mailed April 11, 2018, in Application No. 12/234,360
2006	Office Action mailed August 11, 2011, in Application No. 12/237,365
2007	Intentionally Omitted
2008	Decision Denying Institution of <i>Inter Partes</i> Review of U.S. Patent No. 8,854,572 in <i>Civiq Smartscapes LLC v. Manufacturing Resources International, Inc.</i> , IPR2018-00774, Paper 6 (PTAB Sep. 25, 2018)
2009	Email Exchange Between Patent Owner and Petitioner Regarding Word Count.

I. Introduction

The Board should deny institution under 35 U.S.C. § 325(d) because the same or similar art has already been extensively considered by the Office, and the Petition fails to demonstrate material error in the Office's prior decisions. The primary references relied upon in the petition were used in rejections during prosecution of applications related to the '287 Patent, and one was relied upon as a primary ground of rejection in a Petition for *inter partes* review of a related patent, which the Board declined to institute. The Board should reject the Petition's attempt to re-argue these previously considered—and disregarded—prior art references and arguments.

The Petition also vastly exceeds the page-number limitations set out in the rules. The rules limit a petition for *inter partes* review to 14,000 words. The Petition here exceeds 16,000 words, first by excluding from its word count purported "claim listings," which are in fact headings addressing each claim element. Second by excluding from its word count hundreds of additional words added as annotations to excerpted figures. Petitioner's blatant disregard of the word limits should by itself warrant denial of the Petition.

The Petition also fails on the merits as it fails to articulate a rationale supported by evidence for combining the references and fails to address objective indicia of non-obviousness precluding a finding of obviousness. Samsung, which is

one of the largest manufacturers of LCD screens in the world, itself has praised the patented innovations in MRI's products and sought to engage in collaborative efforts with MRI to "embrace the MRI technology [] blended in with Samsung displays." Ex. 2001. Petitioners Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Petitioners") failed to address objective indicia of non-obviousness of which Petitioners were aware before filing the Petition, including Samsung's praise of the technology central to the '287 Patent.

The Board has repeatedly "cautioned petitioners in prior proceedings that petitions may be denied if they do not address known evidence of secondary considerations," and Petitioners cannot simply fail to address "the most probative and cogent evidence" of non-obviousness when it has been developed in the public record. *Stryker Corp., et al. v. KFx Med., LLC*, IPR2019-00817, Paper 10 at 28-29 (PTAB Sept. 16, 2019); *Robert Bosch Tool Corp. v. SD3, LLC*, IPR2016-01751, Paper 15 at 15-16, 23-34 (PTAB Mar. 22, 2017).

For these and other reasons, Patent Owner respectfully requests that the Board deny institution of the Petition.

II. Background

Patent Owner Manufacturing Resources International, Inc. ("MRI") is a world-wide leader in the market for high-performance electronic displays for use in outdoor and semi-outdoor environments. Over the past 15+ years, MRI has made

substantial advancements in outdoor and semi-outdoor electronic display technology and holds hundreds of U.S. and foreign patents. Cooling systems are critical to the successful use of electronic displays in outdoor and semi-outdoor environments. The claims of the '287 Patent are directed to systems and products for effectively and efficiently cooling outdoor and semi-outdoor electronic displays using an open loop airflow pathway and closed loop airflow pathway.

Prior to the early 2000s, electronic displays were predominantly used in indoor environments and in small formats. The larger the LCD display, the more heat that is generated. When large format displays are placed in outside environments, the thermal load from ambient temperature and solar radiation may cause the outdoor electronic display to malfunction. '287 Patent at 2:7-18. Prior to MRI's invention, past systems for cooling the display attempted to remove heat from the electronic display through heat sinks and fans to direct ambient air over the electronic components. *Id.* at 2:3-7. However, such systems are insufficient in many climates, "especially when radiative heat transfer from the sun through a display window becomes a major factor." *Id.* at 2:8-9.

The '287 Patent discloses and claims solutions to these problems, using a closed loop airflow pathway in combination with an open-loop pathway to transfer heat from the closed loop to the open loop to cool a display device. The claimed system enables efficient heat transfer from the interior of the display device, and

since such a display device is used in an outdoor setting, also protects internal components from environmental conditions that may cause damage to sensitive components.

III. Institution Should be Denied Under Section 325(d).

MRI asks that the Board exercise its discretion to deny institution under § 325(d) because the Petition presents “the same or substantially the same prior art or arguments previously ... presented to the Office,” 35 U.S.C. § 325(d), and because Petitioners failed to meet their burden to show material error with respect to such art or arguments. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”); *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) (“*Becton*”). This Petition fails for all these reasons.

Under *Advanced Bionics*, the Board first considers “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” IPR2019-01469, Paper 6 at 7-8. If “either condition of [the] first part of the framework is satisfied,” the Board then considers “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Id.* at 8. “If the petitioner fails to show that the Office erred,

the Director may exercise his discretion not to institute *inter partes* review.” *Id.* (citing *Becton*, IPR2017-01586, Paper 8 at 24).

Here, institution should be denied because substantially the same prior art and arguments presented in Petitioners’ primary grounds previously were presented to the Office, the Examiner correctly resolved them, and Petitioners make no allegations to the contrary.

A. Part 1 of *Advanced Bionics*: Substantially the Same Prior Art and Arguments were Considered During Prosecution of Related Applications.

Petitioners argue that the claims would have been obvious in the following Grounds:

- Ground 1: WO 2007/116116A1 to Karppanen (“Karppanen”);
- Ground 2: the combination of U.S. Patent No. 6,798,655 to Nagashima et al. (“Nagashima”) in view of Karppanen;
- Ground 3: Japanese Patent No. 3118907 to Ohta (“Ohta”) in view of Japanese Unexamined Patent Publication H8-152604 to Marumoto (“Marumoto”)
- Ground 4: Ohta, and Maruumoto, further in view of GB 2402205A to Yare (“Yare”); and
- Ground 5: Japanese Unexamined Patent Application Publication No. H8-54834 to Kitamura (“Kitamura”) in view of U.S. Patent No.

5,748,269 to Harris, et al. (“Harris”).

i. The Examiner of Applications Related to the Application that Issued as the '287 Patent Relied Upon Karppanen, Yare in Rejecting Similar Claims.

During prosecution, the Office relied upon Karppanen and Yare to reject claims related to the claims of the '287 Patent.

With respect to Karpanen, US 2009/0279240 (“Karppanen II”), which claims priority to Karppanen, i.e., PCT/FI2006/050145, was used in a rejection of a parent of the '287 Patent, Application No. 12/234,360. *See* Ex. 2005. There, the Examiner relied on Karppanen II:

Karppanen [II] explicitly teaches it is desirable to cool displays (para. 26- 27) using an internal sealed fluid (para. 11, 14, 31) cooling the display and electronics and providing cross heat exchanger (80) in the middle part of the electronics board (see para. 32) through which external ambient air stream flows through second ducts (para. 34, 32) to provide increased cooling (para. 33) while at the same time providing the benefits of a sealed cooling gas for the electronics (para. 11, 14) preventing impurities from being introduced therein. Thereby teaching forcing ambient air into the housing of the system and exhausting air out of the housing, all while keeping the ambient air within the second ducts of the heat exchanger and sealed from the sealed cooling gas.

Ex. 2005 at 11-12.

With respect to Yare, it was used in a rejection of a different parent of the '287 Patent, Application No. 12/237,365. *See* Ex. 2006. There, the Examiner cited to Yare for “a plenum 70 placed behind the display device 20 and accepting circulating gas (air)” in combination with other references. And Application No.

12/237,365 ultimately issued as U.S. 8,879,042. Similar to the claims at issue in the '287 Patent, claim 1 of U.S. 8,879,042 recites:

A cooling system for an electronic display having a viewable area, the system comprising:

a front glass unit positioned in front of the viewable area of the electronic display, the front glass unit including: ...

a first gas chamber positioned anterior to the viewable area of the electronic display;

a second gas chamber positioned posterior to the viewable area of the electronic display and operatively connected to the first gas chamber to ***provide a closed loop for circulating gas***; and

a fan positioned to force ambient air between the ***first and second gas chambers such that the ambient air does not mix with the circulating gas***.

U.S. 8,879,042 at claim 1.

Thus, each of Karppanen and Yare was used in rejections during prosecution of related applications to reject elements similar to those for which those references are relied upon in the Petition. The remaining references—Nagashima, Ohta, Marumoto, Kitamura, and Harris—disclose nothing that is non-cumulative to those references already considered and rejected or overcome.

References considered during a related application are relevant for the child application for § 325(d) purposes. *Edge Endo, LLC v. Michael Scianamblo*, IPR2018-01321, Paper 15 at 15-16 (PTAB Jan. 14, 2019) (exercising discretion to deny institution under § 325(d), and “find[ing] that the respective prosecutions of related [patents] are pertinent for consideration of whether to exercise our discretion to deny institution under Section 325(d).”); *Microsoft Corp., et al. v.*

Koninklijke Philips N.V., IPR2018-00279, Paper 11 at 9-19 (PTAB June 8, 2018).

Thus, the Examiner was fully mindful of the prior art's teachings, yet correctly allowed the claims at issue in this proceeding. Petitioners' reliance on cumulative references considered during prosecution of related applications confirms that the Petition's arguments "add[] no teaching that was not before the [Office]." *Dr. Reddy's Labs. S.A. v. Indivior UK Ltd.*, No. IPR2019-00328, 2019 WL 2361780, at *7 (PTAB Jun. 3, 2019).

ii. Yare was Further Considered and Rejected when the Board Denied Institution of *Inter Partes* Review of a Related Patent.

The Petition further ignores that Yare was a primary reference relied upon in a Petition for *inter partes* review of U.S. Patent No. 8,854,572. *See* Ex. 2008, *Civiq Smartscales LLC v. Mfg. Res. Int'l, Inc.*, IPR2018-00774, Paper 6 (PTAB Sep. 25, 2018). The '572 Patent is a parent of the '287 Patent.

Yet, the Petition ignores that the Board has already "determine[d] that Petitioners' arguments and evidence are not sufficient to show a reasonable likelihood of prevailing with arguments that Yare anticipates claim 1." Ex. 2008 at 12-13. The Board similarly "determine[d] that Petitioner has not advanced arguments and evidence sufficient to show a reasonable likelihood of prevailing with arguments that claim 1 would have been obvious in view of Yare." *Id.* at 13.

Critically, the technical reasons the Board rejected Yare are applicable to the

claims here. In particular, the Board noted that “claim 1 [of the ’572 Patent] defines a single ‘gap’ formed by placing the planar surface adjacent to the rear of the electronic display and through which cooling air is forced.” Ex. 2008 at 12. In the Petition’s consideration of Yare, “[t]he first ‘gap’ ... is purportedly defined by the rear wall of atmospheric zone 40 and the rear surface of electronic display 20 The second ‘gap’ identified—the ‘gap’ through which cooling air is forced—is atmospheric zone 40 itself” *Id.* at 13. However, “in claim 1 [of the ’572 Patent], the ‘placing’ and ‘forcing’ steps recite a single gap,” which the Petition does not reconcile. *Id.* Similarly, the claims of the ’287 Patent require such a single gap through which cooling air is forced. *See*

- Claim 1 (“wherein the electronic display is coolable by a combination of gas circulation within the closed loop gas cooling chamber and ambient air flow through the open loop ambient air pathway in the electronic display housing”);
- Claim 12 (“wherein the electronic display is coolable by a combination of a closed loop of isolated gas which circulates within the housing and an open loop of ambient air which passes through the housing and along the backlight.”);
- Claim 18 (“a rear cooling chamber positioned behind the electronic display and containing an electrical component which is electrically

connected to the electronic display ... wherein the front surface of the electronic display is coolable by a closed loop of isolated gas and the rear surface of the electronic display is coolable by an open loop of ambient air.”);

- Claim 21 (“wherein the electronic display is coolable by a combination of closed loop cooling gas circulation within the electronic display housing, and ambient air flow through the open loop ambient air pathway in the electronic display housing.”).

Thus, for this additional reason, the Petition presents art and arguments that are cumulative of those that have already been considered and properly rejected.

B. Part 2 of *Advanced Bionics*: Petitioners Failed to Demonstrate that the Office Erred in a Manner Material to the Patentability of the Challenged Claims.

The second prong of the *Advanced Bionics* test is met because Petitioners completely failed to set forth any evidence of material error committed by the Office in its prior consideration of the prior art and allowance of the ’287 Patent’s claims. Petitioners do not even allege “material error” by the Office. There was none. The Board has declined “to guess or develop its own theory on what error may have been committed in prior proceedings over the [challenged] patent where the now-asserted prior art was at issue.” *Atrium Med. Corp. v. Bard Peripheral Vascular, Inc.*, IPR2021-01197, Paper 11 at 23 (PTAB Jan. 10, 2022).

Accordingly, Petitioners have not, and cannot, meet their burden of establishing that “the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, IPR2019-01469, Paper 6 at 7-11.

Because Petitioners identify no material error, the Board should exercise its discretion under § 325(d) and deny institution of the Petition. *See, e.g., ABS Glob., Inc. v. Cytonome/ST LLC*, IPR2021-00306, Paper 13 at 13-14, 16 (PTAB June 7, 2021).

IV. Petitioners Failed to Articulate a Rationale for Combining the References as Asserted.

Every ground in the Petition is based on obviousness. But “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Further, “obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998). Petitioners have failed to provide an articulated reason based on evidence to support any of their asserted Grounds.

A. Petitioners Provide No Support for the Assertion that Nagashima Could be Modified or Combined with Karpannen.

In Ground 2, Petitioners assert Nagashima in combination with Karpannen, which the Examiner already considered in a related case. Petitioners admit that the main chassis in Nagashima is not sealed, stating “To the extent that the main chassis 3 includes any openings, *it would have been obvious to seal any open holes* to prevent dust and dirt in the ambient air from entering the rear cooling chamber which contains critical electrical components.” Petition, 57 (citing Exs. 1007, 6:11-16; 1002, ¶214) (emphasis added). The cited portion of Nagashima does not support Petitioners’ statement. Rather, the cited section of Nagashima states only that “This allows the air inlet and outlet openings in the lower and upper portions to be *narrowed*.” Ex. 1007, 6:13-14. (emphasis added). Mr. Smith-Gillespie does not bolster this statement, as his testimony does nothing more than parrot the language of the Petition and cite the same section of Nagashima.

The Board gives little weight to an expert declaration that “merely repeats, *verbatim*, the conclusory assertion for which it is offered to support” or an expert who “does not cite to any additional supporting evidence or provide any technical reasoning to support his statement.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9 at 15 (PTAB Aug 24, 2022) (designated precedential Feb. 10, 2023). The Board observed that such circular declaratory assertions are particularly problematic in cases like this one, where “expert testimony is offered not simply to

provide a motivation to combine prior-art teachings, but rather to supply a limitation missing from the prior art.” *Id.*, 16. That is precisely what Mr. Smith-Gillespie does here. Petitioners admit the limitation is missing but state that it *could* be present. Mr. Smith-Gillespie “merely repeats, verbatim, the conclusory assertion” to fill in the gap.

Petitioners repeat the same mistake when they state, “Likewise, cover 12 in Nagashima can be a unitary body with no openings that allow external air to enter.” *Id.*, 58 (citing Exs. 1007, Fig. 13; 1002, ¶217). Again, with no supporting evidence, Mr. Gillespie-Smith merely repeats the Petitioners’ argument, “[l]ikewise, as reflected by Figure 1, cover 12 can be a unitary body with no open holes or vents with the exception of a small vent located at the bottom of the space formed by main chassis 3 and cover 12.” Ex. 1002, ¶217. For this additional reason, Ground 2 should be rejected and the Petition denied.

B. Petitioners’ Provide No Rationale for Combining Embodiment Examples 3 and 5 of Ohta in Grounds 3 and 4.

In Ground 3, Petitioners attempt to combine two separate embodiments of Ohta in a way that is *directly contrary* to the problem that Ohta is trying to solve. This is improper. “If [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” MPEP § 2143.01 (citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)). “An inference of

nonobviousness is especially strong where the prior art's teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009). This is the case here.

The Ohta reference teaches away from the combination that Petitioners assert. The Ohta reference states: “***Prior to now***, either no cooling device whatsoever was used in a plasma display panel, or ***an integrated structure combining a plasma display panel 1, a housing 11, and a cooling fan 10 was used.***” Ex. 1004, ¶ (0004). Ohta then describes two categories of solutions to the problem of the integrated device:

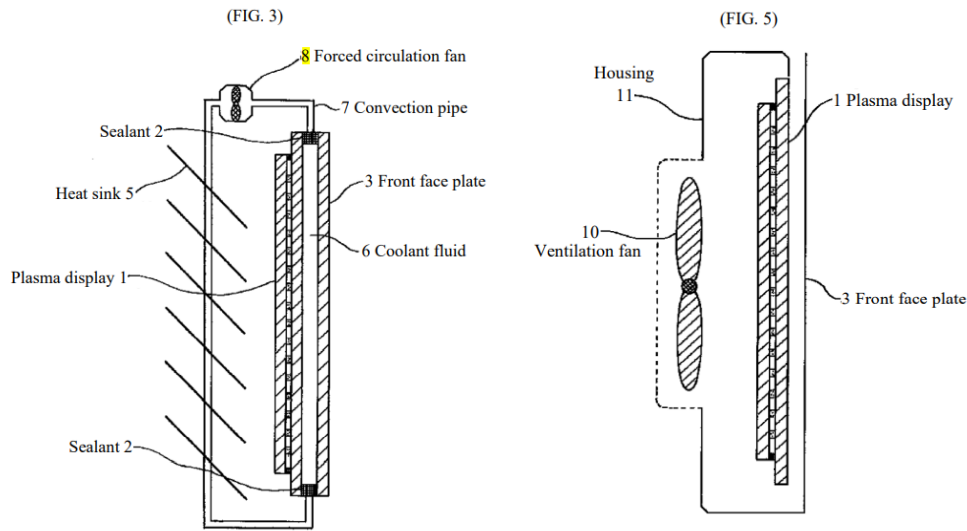
- (1) “a container that is directly mounted at an appropriate space from the plasma display panel so as to form an airtight container between itself and the plasma display panel, and coolant that either flows in/out of this airtight container or is sealed within the same,” or
- (2) “a front face plate that is directly mounted at an appropriate space from the plasma display panel, and a fan that ventilates the interior of this space.”

Id., ¶¶ (0006), (0007). Petitioners first concede that “a housing is not explicitly disclosed in ‘embodiment example 3.’” Petition, 79. But then, ignoring the problem Ohta identifies—an integrated structure combining a plasma display panel

1, a housing 11, and a cooling fan 10—Petitioners assert, “a POSITA would understand that, based on the teaching in ‘embodiment example 5,’ the electronic display and cooling systems taught in Ohta could be included *in the same housing*.” *Id.* (citing Ex. 1002, ¶300) (emphasis added). Confirming the weakness of this argument, Petitioners then suggest, “[e]ven if not, a POSITA would be motivated to contain the display and its accompanying cooling system *in a single housing* to protect both from the environment during outdoor use and to facilitate easier transfer.” *Id.* (emphasis added). The only support for these assertions, which are completely contrary to the explicit teachings of Ohta, is a paragraph from Mr. Gillespie-Smith’s declaration that again merely parrots the same arguments in the Petition. *See*, Ex. 1002, ¶ 300.

The disclosures in Ohta regarding each of the example embodiments further illustrates the errors in Petitioners’ assertions. As illustrated in the figures below, combining the two example embodiments is improper because it modifies Ohta in

a way that it is no longer suited for its intended purpose.



Example embodiment 3 circulates a fluid in a closed system while example embodiment 5 circulates ambient air, which is incompatible with a closed, fluid-filled system. In other words, and as Ohta explains, these two embodiments solve the same cooling problem in entirely different ways. Petitioners ignore this when suggesting they could be combined.

Apparently recognizing the weaknesses of Ground 3, Petitioners retreat to Ground 4, which combines Ohta and Marumoto with Yare. “Nevertheless, to the extent that the combination of Ohta and Marumoto does not disclose or suggest a housing for use with a combined open and closed loop cooling system, it would have been obvious to include a housing such as that disclosed by Yare (Ex. 1013).” Petition, 105. But Ground 4 contains the same deficiencies as Ground 3. Each of these Grounds should be rejected and the Petition denied.

C. Ground 5 is Hindsight-Based and Adds Nothing.

Ground 5 suffers from two fatal flaws. *First*, the Petition relies on “the structural similarity between the two electronic display assemblies, namely, the cooling plenum 30 and the duct 38 in Kitamura” as the motivation to combine. And Petitioners’ expert merely parrots this. *See* Ex. 1002, ¶438. The Board has made clear that a mere “statement of similarity, however, does not constitute an articulated reasoning with rational underpinning as to why a POSITA would combine elements of one reference with another, and why a POSITA would modify the teachings of the references to arrive at the claimed invention.” *William Wesley Carnes, Sr., Inc. v. Seaboard Int’l Inc.*, No. IPR2019-00133, Paper 10 at 18 (PTAB May 8, 2019).

Second, Ground 5 is a purely hindsight-driven exercise that relies upon the claim as a road map, which is improper. The “[d]etermination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.” *ATD*, 159 F.3d at 546. According to Petitioners, Kitamura discloses a closed loop system, and Harris an open loop one. *See, e.g.*, Petition, 110. And according to Petitioners, this and the fact that they are “structurally similar” is sufficient to render the claims obvious. However, this does not explain why it would be obvious to integrate two fundamentally different cooling mechanisms. Instead, it

illustrates the problem with using the claim as a roadmap. Without “a reasoned explanation that avoids conclusory generalizations,” “conclusory statements and unspecific expert testimony” are insufficient to support a finding of obviousness. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1366 (Fed. Cir. 2016); *see also KSR*, 550 U.S. at 418. This is because “inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418-19 (2007). Thus, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 418.

Thus, Petitioner has not satisfied its burden of establishing an adequate motivation to combine these elements as claimed. Ground 5 should be rejected and the Petition denied.

V. Petitioners Failed to Consider their Own Praise of the Claimed Invention of which Petitioners were Plainly Aware.

There are multiple objective indicia of non-obviousness for the '287 Patent with a nexus to MRI's outdoor and semi-outdoor electronic display products, which practice the '287 Patent, including at least industry praise, commercial success, long felt need, unsuccessful attempts by others, and copying.¹ Petitioners

¹ Evidence of each of these categories has been produced in the corresponding ITC litigation subject to a protective order and thus is not separately addressed here, but

at least knew about evidence of industry praise before filing the Petition because it was a Real Party in Interest that praised MRI's patented products. *See* Exs. 2001-2003.

Objective evidence “may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012). In fact, “[i]t is the secondary considerations that are often most probative and determinative of the ultimate conclusion of obviousness or nonobviousness.” *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996). Here, the objective indicia of non-obviousness is compelling and overwhelms any of Petitioners' contrary arguments.

“Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claimed invention would have been obvious. Industry participants, especially competitors, are not likely to praise an obvious advance over the known art. Thus, if there is evidence of industry praise of the claimed invention in the record, it weighs in favor of the non-obviousness of the claimed invention.” *Apple Inc. v. Samsung Elecs Co.*, 839 F.3d 1034, 1053 (Fed. Cir. 2016) (en banc).

will be addressed if the Board institutes a proceeding.

MRI's BoldVu® products have been praised in the field of electronic displays for their ability to withstand high ambient temperatures and high solar load and draw little energy for cooling systems. Samsung SDS America—an entity that is plainly related to Petitioners (and is a Real Party in Interest)—praised MRI's technical achievements as well.² On April 24, 2020, Samsung SDS America told MRI:

What you've done at MRI *it's impressive and unique*; I bet was not easy entering into a virgin space and then shortly after being able to pioneer a new business model based on turnkey solutions for DOOH [Digital Out Of Home], *raising the bar for high quality standards*.

Per our conversation, *I see loads of opportunities for collaboration in the outdoor space* (smart city, transit, rail, etc) *where we can embrace the MRI technology* and blended in with Samsung displays. Our customers will benefit from quality products and executions.

Ex. 2001 (MRI-ITC-1331_0000435123-24 (4/24/2020 Romulus Stoain email to Dunn) (emphasis added)). Samsung SDS America even attempted to enter into a “Mutual Non-Disclosure Agreement” with MRI. Ex. 2002 (MRI-ITC-1331_0000435125-27). Samsung SDS America's representative, Stoain, told Dunn that after their “discussion relative to *all weather, outdoor*, daylight viewable LCD

² Petition at 2 (“The real parties-in-interest are Samsung Electronics Co. Ltd., Samsung Electronics America, Inc., Samsung SDS Co., Ltd., ***Samsung SDS America, Inc.***, Coates Signco Pty Limited, Coates US Inc. and Industrial Enclosure Corporation d/b/a Palmer Digital Group.” (emphasis added)).

products” he “spoke internally and [Petitioner] Samsung Electronics is looking for *a key partner in outdoor enclosures.*” Ex. 2003 (MRI-ITC-1331_0000435133-34 (5/4/2020 Romulus Stoain email to Dunn)).

“For objective evidence ... to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (emphasis & citation omitted). In an *inter partes* review, when the patent owner shows the claimed invention is embodied in a particular product, nexus between the secondary considerations associated with that product and the patent claims is presumed. *PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, 815 F.3d 734, 747 (Fed. Cir. 2016) (“Because the evidence shows that the SignalTight connectors are the invention disclosed and claimed in the patent, we presume that any commercial success of these products is due to the patented invention” (quotation marks omitted)); *see also Omron Oilfield & Marine Inc. v. MD/TOTCO*, IPR2013–00265, Paper 11 at 14 (PTAB Oct. 31, 2013) (“A prima facie case of nexus is established when the patentee shows both that there is commercial success, and that the product that is commercially successful is the invention disclosed and claimed in the patent.”).

This is true here, because all of the secondary considerations relate to the MRI’s products and the objective evidence ties directly to the claimed features,

i.e., heat transfer systems that enable “*all weather, outdoor*, daylight viewable LCD products.” Ex. 2003. For example, the praise above discusses Samsung’s belief that Patent Owner would be a “key partner in outdoor enclosures,” and that Patent Owner’s innovations are both “impressive and unique” and “rais[e] the bar for high quality standards.” Exs. 2001, 2003. In particular, Samsung saw “loads of opportunities for collaboration in the outdoor space (smart city, transit, rail, etc) where we can embrace the MRI technology and blended in with Samsung displays.” Ex. 2001.

This praise is all tied directly to the claimed invention, i.e., systems and products for effectively and efficiently cooling outdoor and semi-outdoor electronic displays. Such systems are exactly what makes these outdoor displays possible—through enabling efficient cooling while still protecting sensitive internal components from the elements.

“All of the *Graham* factors must be considered, including the objective indicia when present, before any conclusion regarding obviousness is reached.” *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017); *see also Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed. Cir. 2008) (stating that objective indicia are “not just a cumulative or confirmatory part of the obviousness calculus but constitute[] independent evidence of nonobviousness”). “These indicia *cannot* be set aside in the analysis of

obviousness.” *Millennium*, 862 F.3d at 1368 (emphasis added). Yet, this is exactly what Petitioners sought to do, claiming “Petitioners are not aware of any evidence of secondary considerations of nonobviousness, such as commercial success, alleged long felt but unresolved need, alleged failure of others, or copying by others.” Petition at 125.

Tellingly, Petitioners ignored in their statement of secondary considerations of non-obviousness that industry praise is such a secondary consideration and, indeed, that the praise came from a Real Party in Interest. *See id.* Praise from a competitor—like Petitioners—is “especially” important as “competitors, are not likely to praise an obvious advance over the known art.” *Apple*, 839 F.3d at 1053.

Any obviousness determination must consider all the *Graham* factors, and Petitioners’ ignorance of addressing these factors is another ground for denying institution. Moreover, because Petitioners were aware of their own praise of the patented invention at the time they filed the Petition, Petitioners should not be allowed to supplement their Petition through Reply or otherwise to address evidence it should have addressed in the first instance. *See, e.g., Robert Bosch Tool Corp. v. SD3 LLC*, IPR2016-01751, Paper 15 at 22-33 (PTAB Mar. 22, 2017) (denying institution for failure to address objective indicia presented during an ITC proceeding); *see also Coalition for Affordable Drugs V LLC v. Hoffman–LaRoche, Inc.*, IPR2015–01792, Paper 14 at 17-18 (PTAB Mar. 11, 2016) (denying

institution for failure to address objective indicia considered by Examiner during original prosecution); *see also Merial Ltd. v. VIRBAC*, IPR2014–01279, Paper 13 at 27-28 (PTAB Jan. 22, 2015) (denying institution for failure to address objective indicia considered by Examiner during original prosecution and noting “Merial was aware of the unexpected results showing which the Examiner found persuasive Merial should have addressed unexpected results in the first instance.”); *Omron Oilfield*, IPR2013–00265, Paper 11 at 12-16 (denying institution for failure to address objective indicia successfully argued in a reexamination).

VI. Claim Construction

Patent Owner reserves the right to later dispute Petitioners’ proposed constructions. Petitioners first ask the Board to construe three terms (“closed loop gas cooling chamber,” “closed loop of isolated gas” and “closed loop of cooling gas”) without any analysis. Rather, Petitioners ask the Board to adopt the district court’s constructions from a prior litigation without any discussion or citation to evidence in support of those constructions. Petition at 12-14. Petitioners simply cite to the District Court Claim Construction Order (Ex. 1011) and a Memorandum Opinion (Ex. 1012), in an improper attempt to incorporate the court’s reasoning by reference. *See* 37 C.F.R. § 42.6(a)(3); *see also* Rules of Practice for Trials Before The Patent Trial and Appeal Board and Judicial Review of Patent Trial and Appeal Board Decisions; Final Rule, 77 Fed. Reg. 48,612, 48,617 (Aug. 14, 2012)

(prohibition against incorporation by reference is to eliminate abuses that arise from incorporation).

By incorporating by reference the arguments and analysis from the Order into the Memorandum Opinion, Petitioners further circumvent the page limits imposed on petitions for *inter partes* review. The Board should not consider information that is not provided in the Petition, but is instead incorporated by reference to the cited *Markman* Order. *Apple Inc. v. ContentGuard Holdings, Inc., et al.*, IPR2015-00442, Paper 9 at 9 (PTAB Jul. 13, 2015). A petition for *inter partes* review must identify how each challenged claim is to be construed. *See* 37 C.F.R. § 42.104(b)(3). The Petition’s improper incorporation by reference fails to meet this requirement.

Petitioners also rely on “guidance” provided in the Memorandum Opinions issued by the District Court (Ex. 1012, Ex. 1032), again without providing any reasoning or rationale. Petitioners also mischaracterize the District Court’s opinions. Petition at 12-14. For example, Petitioners state, “[a]s to the ‘open loop,’ the District Court determined that it is not limited to a ‘gas pathway within a display housing that is open to or accessible to external air.’” Petition, 13. The District Court did not make this determination. Rather, the District Court found that Petitioners’ “proposed construction provides no additional clarity to the term ‘open loop’ as used in both patents.” Ex. 1012, 8. Moreover, Petitioner’s proposed

construction is contrary to the plain language of the limitation, which recites “an open loop ***ambient*** air pathway.” Petitioner’s improper incorporation by reference and mischaracterizations of the District Court’s analysis warrant denial of the Petition.

As to “open loop of ambient air which passes through the housing and along the backlight,” Petitioners ask the Board to rewrite the phrase “along the backlight” as “in thermal communication with the backlight.” Petition, 15. The Board applies the same *Phillips* claim construction standard applied in district court. 37 CFR § 42.100(b). Under the *Phillips* standard, claim terms are generally given their plain and ordinary meaning. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313–14 (Fed. Cir. 2005) (en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Petitioners have not suggested that either exception applies here. Nor could they.

The new language Petitioners propose is nowhere in the intrinsic record of the ’287 Patent. Thus, Patent Owner could not have acted as its own lexicographer. Further, there is no disavowal. Rather, Petitioners rely on an amendment to a claim in a different patent. Petition, 15. Moreover, the language that Petitions now invite

the Board to adopt is not even in the claim amendment on which Petitioners rely.

The claim on which Petitioners rely recited “traveling along the rear surface of the LED backlight” before the amendment and was amended to recite “contacting the rear surface of the LED backlight.” Ex. 1020, 223. Nothing in this amendment provides support for Petitioners’ “thermally conductive” language. Thus, Petitioners’ proposed construction should be rejected.

VII. Other Circumstances Also Warrant Denying Institution

Finally, the Petition should be denied because it exceeds the word count limit set forth in 37 C.F.R. § 42.24(a)(1)(i). Petitioners certify the word count as 13,992, but when Patent Owner suspected an egregious violation of the rule, it converted the Petition from Adobe Acrobat to Word and discovered that the Petition is well in excess of 16,000 words. Upon conferring with counsel for Patent Owner via email (*see* Ex. 2009) Patent Owner determined that the additional words are the result of Patent Owner’s contention that headings, such as the example heading provided below, are “claim listings,” which despite appearing throughout the body of the Petition, need not be included in the word count.

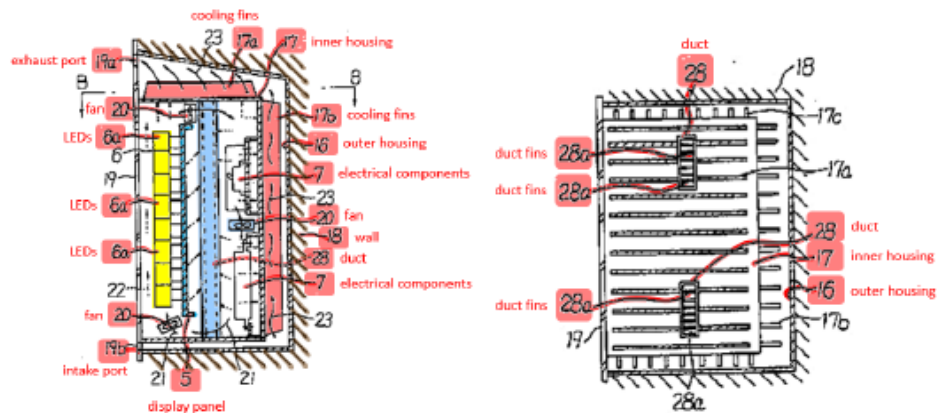
C. Claim 5	
5	The electronic display assembly of claim 1 wherein: the closed loop gas cooling chamber and the ambient air pathway are configured such that gas circulation within the gas cooling chamber will occur in a direction that is substantially perpendicular to the direction that ambient air will flow through the electronic display housing.
Ohta in combination with Marumoto discloses cooling an LCD display using a closed loop gas cooling chamber. (<i>Supra</i>, §X.A.3; Ex. 1002, ¶323.) As shown in Ohta Figure 3, while air within the closed loop gas cooling chamber in Ohta as modified by Marumoto moves in both vertical and horizontal directions, it moves predominantly in a vertical direction. (Ex. 1002, ¶323.)	

Petition at 85 (highlighting added).

Under Petitioner’s interpretation, the highlighted text above is excluded from the Word Count because of its formatting, i.e., the box around the claim language, despite the fact that this claim language appears in the argument sections of the Petition. This interpretation of 37 C.F.R. § 42.24 is disingenuous at best. Rule 42.24 states “The word count or page limit does not include a table of contents, a table of authorities, mandatory notices under § 42.8, a certificate of service or word count, or *appendix of exhibits or claim listing*.” 37 C.F.R. § 42.24 (emphasis added). The clause “or appendix of exhibits or claim listing” refers explicitly to both an appendix of exhibits and an appendix of a claim listing. The immediately preceding clause, “a certificate of service or word count,” uses the

identical phrasing and plainly refers to both a certificate of service and a certificate of word count, not just the word count itself. Moreover, the C.F.R. consistently uses the Oxford comma to delimit the last item in lists of items. *See, e.g.*, § 42.24(a)(2) (“Any other motion to waive word counts or page limits must be granted in advance of filing a motion, opposition, ***or reply for which the waiver is necessary.***” (emphasis added)), § 42.24(b) (“The word counts or page limits set forth in this paragraph (b) do not include a listing of facts which are admitted, denied, ***or cannot be admitted or denied.***” (emphasis added)). Thus, the only valid interpretation of “or appendix of exhibits or claim listing” is that Petitioner could have provided an appendix of a claim listing that would be excluded from the word count. Petitioner did not do so, instead Petitioner flouts the Board’s word-count requirement by thousands of words.

Further Petitioners ignore that the Petition includes hundreds of annotations in figures. These annotations include text that would not be captured by the word processing software. *See, e.g.*, Petition at 26-27 (including three figures with more than 40 words in annotations); and 60 (including 20 words in annotations). An example of such overuse of annotations is shown below:



Petition at 27. Such annotations are found in dozens of locations throughout the 126-page Petition.

The Trial Practice Guide notes, “Excessive words in figures, drawings, or images . . . in order to circumvent the rules on word count, may lead to a party’s brief not being considered.” TPG, 40 (citing *Pi-Net Int’l, Inc. v. JPMorgan Chase & Co.*, 600 F. App’x 774 (Fed. Cir. 2015)). Further, “[e]xcept in cases of obvious abuse, the Board will generally accept a party’s certification of compliance with word count limits.” *Id.* This Petition is an example of obvious abuse. Patent Owner is prejudiced because the Petitioner included thousands of additional words of argument in each of the Petitions, which otherwise would have been unavailable to it. For this additional reason, institution should be denied.

VIII. Conclusion

For the foregoing reasons, institution should be denied.

Dated: March 22, 2023

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this Preliminary Response contains 6,533 words according to the word-processing program used to prepare this paper. The foregoing word count complies with the 14,000 word type-volume limit specified by 37 C.F.R. § 42.24(b)(1).

Dated: April 20, 2023

Respectfully submitted,

/John C. Alemanni/

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Lead Counsel for Patent Owner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Preliminary Response has been served electronically via email upon the following:

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