

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COLLEGE PRODUCTS, INC.,

Petitioner,

v.

INTIRION CORPORATION,

Patent Owner.

Case PGR2024-00004

Patent No. 11,674,746

PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION

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I. INTRODUCTION.

U.S. Patent No. 11,674,746 (the “’746 patent”) is directed to an innovative combination microwave and refrigerator system. The ’746 patent describes a microwave oven control circuit that is configured such that it may disable cooling power to the refrigerator when the microwave demands cooking power, thus limiting overall power draw to the combination unit. Ex. 1001 at 1:26-32; 40-46. The microwave may further include auxiliary outlets configured to provide low power for purposes of recharging batteries (such as mobile phone batteries). *Id.* at 2:40-45. The control circuit is configured such that power to the auxiliary outlets is disabled when the microwave receives cooking power. *Id.* at 2:47-51. Further, the microwave includes a smoke sensor in operative connection with the cooking area of the microwave.

Petitioner’s challenges to the ’746 patent piece together references that a person of ordinary skill in the art (“POSITA”) would not combine. Petitioner has not alleged either a reason to combine or a reasonable expectation of success in doing so. Petitioner also does not offer or demonstrate what in particular could be combined, let alone how any reference could be combined.

Petitioner’s failures do not stop there. Petitioner also relies on prior art disclosures that do not relate to microwave technology and do not disclose the invention claimed in the ’746 patent. As explained in more detail below, the Petition

and its declaration(s)¹ are flawed and demonstrate no more than hindsight-guided reconstruction using the claimed invention as a template.

Regarding Ground 1, Petitioner attempts to combine Emma, which discloses a method for managing power load in linked appliances to avoid current overload conditions, with ISDU, which has not been shown to be prior art. Nor, for that matter, has Petitioner demonstrated that the combination of Emma and ISDU would render obvious each element of the independent claims, including the “smoke sensor,” “control circuit,” “shut-down function,” or “reset enable function” elements required by all claims. Further, there would not have been a reasonable expectation of success in making the combination Petitioner proposes for at least two reasons. *First*, ISDU itself acknowledges that ISDU did not work. *Second*, Petitioner has not alleged what that combination would involve, and does not holistically describe the combination or how it meets the claim elements anywhere.

Ground 2 fares no better. Petitioner demonstrated that the combination of Emma and Smith would render obvious each element of the independent claims,

¹ Petitioner incorporates over 350 pages of expert declarations by utilizing its expert declaration from the failed petition for *inter partes* review regarding U.S. Patent Nos. 9,791,206, 10,495,374, and 11,274,876. Any argument not raised in the Petition should not be considered. *Freedom to Operate, Inc. v. Compass Pathfinder Ltd.*, Case No PGR2022-0012, Paper No. 18 at 20-21 (PTAB June 22, 2022) (refusing to consider arguments and “other reasons” that were improperly incorporated by reference in an expert witness declaration).

including the “smoke sensor,” “control circuit,” “shut-down function,” or “reset enable function” elements required by all claims. Nor has Petitioner demonstrated that there would be a motivation to combine Emma and Smith (and indeed, wholly ignores the teachings of Smith and Emma), which teach *away* from combining Emma, teaching power management, and Smith, which has a constant current draw over that which is allowed for combination appliances. Petitioner has further failed to demonstrate or allege a reasonable expectation of success, including because Petitioner has not identified what a combination of Emma and Smith would look like, or how it meets the requirements of the independent claims.

Grounds 3 and 4 likewise fail, *first*, because Petitioner has not demonstrated that the combinations of Emma and Butt, or Emma in view of Butt and Smith, would render obvious each element of the independent claims, including the “smoke sensor,” “control circuit,” “shut-down function,” or “reset enable function” elements required by all claims. *Second*, Petitioner has not alleged a motivation to combine nor a reasonable expectation of success in doing so, in part because Petitioner has not alleged what a combination would look like. And *third*, Petitioner has failed to allege the differences between the claimed subject matter and the alleged prior art, and has thus failed to allege obviousness under *Graham* for Grounds 3 and 4.

Grounds 5 and 6 fail because Petitioner improperly attempts to meet claim elements through the knowledge of a POSITA in contradiction of applicable

caselaw. And Grounds 5, 6, 7, and 8 all fail because Petitioner has not established that any independent claim is obvious. Finally, Grounds 9-11 fail because Petitioner has failed to raise a valid indefiniteness, written description, or enablement challenge, ignoring the plain language of the claims and explicit teaching in the specification.

Petitioner's attempt to recast and rewrite the limitations, and failure to holistically describe *any* alleged combination under § 103, dooms its Petition. The Board should decline to institute review.

II. LEVEL OF ORDINARY SKILL IN THE ART.

Intirion asserts a POSITA would have had (a) a bachelor's degree in mechanical engineering or electrical engineering or the equivalent; and (b) one-two years working experience designing appliances, including microwaves or comparable appliances. Equivalent experience and technical training might substitute for education, and advanced degrees might substitute for experience. Petitioner's assertion of a POSITA is: "a POSITA would have had at least a bachelor's degree in electrical engineering or computer engineering. Alternatively, a POSITA could have had a bachelor's degree in mechanical engineering, industrial engineering, physics, or a related engineering or discipline, plus at least two years of experience working with control circuits, sensors, kitchen appliances, or similar

fields.” Petition at 14 (citations omitted). The differences do not matter for purposes of this petition.

III. CLAIM CONSTRUCTION.

Patent Owner agrees that no claim construction is necessary because a person of ordinary skill in the art would readily understand the plain and ordinary meaning of the claim terms.² *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (“The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.”) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc)). Moreover, as discussed in further detail below, Petitioner has not established that the claims of the ’746 Patent are invalid.

² Petitioner makes incorrect statements regarding the meaning of “level of smoke” or amount of smoke. Contrary to Petitioner’s representations, Patent Owner does not suggest a special definition and has asked the court to give these terms their plain and ordinary meaning. These terms are comprised of non-technical words that a lay person can easily understand. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (“In some cases, the ordinary meaning of claim language ... may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly used words.”) (internal citations and quotations omitted). A POSITA would similarly understand “level of smoke” when read in the full context of the intrinsic record. *Thorner*, 669 F.3d at 1365 (citing *Phillips*, 415 F.3d at 1313).

IV. THE BOARD SHOULD DECLINE TO INSTITUTE REVIEW.

In a PGR, the Petitioner bears the burden to show that the information in the petition, if not rebutted, “would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a). Here, Petitioner has failed to meet its burden and institution should be denied.

A. Grounds 1, 5, and 7: Petitioner’s Grounds Based on ISDU Do Not Raise a Substantial Question of Patentability Because Petitioner Has Failed to Establish ISDU Qualifies as Prior Art.

Petitioner has failed to meet its burden to show that ISDU was publicly accessible no later than April 25, 2014 (the priority date of the ’746 patent). Public accessibility is the “touchstone in determining whether a reference constitutes a printed publication,” as Petitioner alleges here. *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016). At this stage, “the burden is on [Petitioner] to identify, with particularity, evidence sufficient to establish a reasonable likelihood that [ISDU] was publicly accessible before the critical date of the challenged patent, and therefore that there is a reasonable likelihood that it qualifies as a printed publication.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, at 16 (PTAB Dec. 20, 2019) (precedential); see *Adama Agan Ltd. V. Bayer Cropscience LP*, PGR2022-00057, Paper 9, at 29-30 (PTAB Feb. 13, 2023) (applying *Hulu* to a post-grant review except that the “more likely than not” standard applies).

A reference is considered “publicly accessible if it was ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.’” *Blue Calypso*, 815 F.3d at 1348 (citing *Kyocera Wireless Corp. v. ITC*, 545 F.3d 1340, 1350 (Fed. Cir. 2008)). For electronic documents, public accessibility may be demonstrated if the document was “indexed or catalogued, or if there were other tools for customary and meaningful research.” *Sophos Ltd. v. Open Text Inc.*, IPR2023-00732, Paper 23, at 8 (PTAB Nov. 1, 2023) (citing *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1196 (Fed. Cir. 2008)). Critically, the Federal Circuit has emphasized that “technical accessibility” is not sufficient: a reference must be “*meaningfully* indexed such that an interested artisan exercising reasonable diligence would have found it.” *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773-74 (Fed. Cir. 2018) (emphasis in original).

Here, Petitioner’s purported evidence of public accessibility falls woefully short. Petitioner does not rely on anyone with first-hand knowledge of ISDU’s public accessibility. Nor does Petitioner rely on evidence of actual pre-critical date access of the ISDU reference. Petitioner does not even rely on evidence of those with first-hand knowledge of the system on which ISDU was allegedly published (“IRis”). Despite being well aware of the public accessibility issue here, the evidence Petitioner submits in support of its position that ISDU is a printed

publication is limited to (1) ISDU itself; (2) two unauthenticated documents that generically describe the IRis system, namely an undated brochure entitled “IRis: Digital Scholarship, Publishing, and Preservation at Northeastern University” (“IRis Brochure”), and a presentation titled “IRis at Northeastern University: Why, What, How” (“IRis PowerPoint”); and (3) its technical expert’s declaration, purportedly offering opinions regarding ISDU’s public accessibility by quoting the IRis Brochure and PowerPoint. Petitioner’s evidence falls short of its burden for three reasons.

First, the date listed on ISDU itself does not establish when the reference became publicly accessible. Petitioner points to the date of April 17, 2007, listed on ISDU along with an “IRis” stamp to argue that “ISDU was published and publicly available in Northeastern University’s digital archive in 2007.” Petition at 20-21. However, the relevant date is not the date listed on a document, but “[t]he date on which the public actually gained access to the invention by means of the publication.” *In re Bayer*, 568 F.2d 1357, 1361 (C.C.P.A. 1978). Petitioner has put forward no evidence to show when ISDU was actually made publicly accessible.

In fact, ISDU itself suggests that April 17, 2007, was the date the paper was submitted for a class. ISDU is a student paper, submitted as a capstone final, and the testing for the paper was set to conclude in early April 2007, presumably in time for the class deadline. Ex. 1012, ISDU at 33. This is reinforced by ISDU’s

conclusion: “We had set an ambitious goal of completing our integration by spring break of classes to ensure ample time for testing and completing our final report, as well as compiling our final presentation and as we reported to our advisor, we were able to meet that deadline.” Ex. 1012, ISDU at 27. Thus, April 17, 2007, appears to be when the paper was submitted—it does not purport to be a date wherein the document became accessible online.

The Board has repeatedly rejected similar evidence in denying institution. *See, e.g., In-Depth Geophysical, Inc. v. Conocophillips Co.*, IPR2019-00849, Paper 17, at 5, 12 (PTAB Mar. 30, 2020) (“Simply pointing to a date, alleged to be a ‘publication date,’ even where that date cascaded through various patent references, without interpretation or explanation, does not meet the threshold standard to show that it is reasonably likely that a reference was [publicly] accessible on that date.”); *EMC Corp. v. Acqis*, IPR2014-01469, Paper 56, at 16-20 (PTAB Mar. 8, 2016) (rejecting a paper as a printed publication where the listed date only showed when it was “submitted to the CERN/LHCC committee, not necessarily when it was available in the CERN Library”); *Apple Inc. v. DSS Tech, Mgmt., Inc.*, IPR2015-00373, Paper 12, at 6 (PTAB Aug. 12, 2015) (rejecting a thesis as a printed publication where the date stamped on the paper by the MIT Library was “evidence only of when [it] was archived,” which “cannot establish when, if ever, [the thesis] became publicly available”).

Just as the Board concluded in its informative decision in *In-Depth Geophysical*, Petitioner’s petition should be denied as to ISDU because it made no attempt to explain “what this date represents” such as whether it was “the date of submission, acceptance for publication, or publication,” and ISDU itself has no indicia such as express publication dates, journal numbers, or other markers that would indicate public availability. *In-Depth Geophysical, Inc.*, IPR2019-00849, Paper 14, at 9-10 (informative); *see Adama Agan Ltd.*, PGR2022-00057, Paper 9, at 31-32 (dissertation labeled with “date.available” stamp was insufficient evidence of public accessibility “[w]ithout any additional evidence ... about what this electronic record means in terms of the public accessibility of the reference for persons interested and ordinarily skilled in the subject matter or art”).

Second, Petitioner’s reliance on generic information about the Northeastern University’s old system, IRis, does not fill in the gaps. Petitioner points to the undated IRis Brochure and the IRis PowerPoint (Ex. 1002, App’xs B & D), both of which are unauthenticated under Federal Rules of Evidence 901-902 and are inadmissible hearsay under Rule 802, and so should be given no weight. *See In-Depth Geophysical*, IPR2019-00849, Paper 14, at 9 (denying institution where petitioners “do not even attempt to establish, for example in the form of testimony of a witness familiar with the exhibit, the authenticity of [the] exhibit or that it falls within an exception to Federal Rule of Evidence 901”); *TRW Automotive U.S. LLC*

v. Magna Electronics Inc., IPR201401348 Paper 25 at 12 (PTAB Jan. 15, 2016) (excluding alleged prior art publication because petitioner did not sufficient authenticate it); *cf. ServiceNow, Inc. v. Hewlett-Packard Co.*, IPR2015-00707, Paper 14, at 9-10 (PTAB Nov. 2, 2015) (giving little weight to hearsay in determining public accessibility). Petitioner’s expert attaches these documents to his declaration, but he has no personal knowledge to authenticate them—nor does he make any attempt to authenticate.

Even if the Board considers these exhibits, they provide no information as to when, if ever, ISDU became publicly accessible. Notably, neither the IRis Brochure nor the IRis PowerPoint mention ISDU. Instead, Petitioner argues that merely because these documents suggest that portions of the IRis system had the option of being indexed, ISDU was publicly available. Yet Petitioner has provided no evidence that ISDU itself was indexed. Further, the Federal Circuit made clear that “[t]he test for public accessibility is not ‘has the reference been indexed?’ ... [W]here indexing is concerned ... the ‘ultimate question is whether the reference was ‘available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.’” *Acceleration Bay*, 908 F.3d 765 at 774. A reference is not publicly accessible just because it is “technically accessible” where “it was not *meaningfully* indexed.” *Id.*

In this case, Petitioner has failed to submit any evidence of what, if any, information about ISDU was indexed, or how that would make ISDU discoverable by those of skill in the art. Indeed, the IRis PowerPoint shows that indexing information (metadata) may be input by the individual that uploads the paper to IRis—including title. Ex. 1002, App’x B at 277. That metadata may later be edited. *Id.* at 288. The presentation also stated others would have been responsible for any migration, which would include the later transition to the current “Digital Repository Service.” Petitioner provided no information on whether, how, or when any metadata was input. For example, if ISDU was input with the title “ISDU,” the publication date would be irrelevant—ISDU could not be reasonably found and would simply be inaccessible to one of ordinary skill in the art. *See Acceleration Bay*, 908 F.3d 765 at 774 (affirming that although a reference was indexed by author and year, it was not meaningfully indexed such that an interested artisan could find it); *In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989) (same).

Further, as the IRis PowerPoint demonstrates, IRis papers could be submitted in a way where the submission was kept confidential. Ex. 1002 at 240 (noting access restrictions), 260 (same), 237 (noting “not published” information), 238 (noting “fairly restrictive access to preprints”). In the end Petitioner’s arguments are no more than speculation that the ISDU reference was publicly available, which is insufficient as a matter of law. *In-Depth Geophysical, Inc*, IPR2019-00849, Paper

14, at 9-10; *Adama Agan Ltd.*, PGR2022-00057, Paper 9, at 31-32; *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1372 (Fed. Cir. 2019) (“[A] work is not publicly accessible if the only people who know how to find it are the ones who created it.”); *Sophos*, IPR2023-00732, Paper 23, at 12.

Third, Petitioner’s technical expert declaration fares no better. Dr. Horenstein merely parrots information he finds in a Google search, including the IRis Brochure and IRis PowerPoint. Ex. 1002, ¶¶ 98. His declaration is not made with first-hand knowledge. Dr. Horenstein is not a custodian of the ISDU reference and is instead utilizing documents he apparently found in 2023 to try to reconstruct the availability of the ISDU reference. The Board in *Sophos*, IPR2023-00732, Paper 23, at 5, similarly denied institution and dismissed an expert’s declaration where the expert had no personal knowledge of when the reference was first published and instead relied “on nothing more than speculation.” Further, Dr. Horenstein’s attempt to opine on IRis practices is also unavailing because neither he nor Petitioner point to any evidence that he has “the sort of specialized knowledge of [Northeastern University’s IRis system] procedures that would enable him to provide expert testimony regarding the public accessibility of [ISDU].” *DSS Tech. Mgmt.*, IPR2015-00373, Paper 12, at 6 (denying a rehearing request on a Board decision denying institution of an *inter partes* review).

Collectively, Petitioner’s purported evidence should be rejected because its “amounts to little more than a bare allegation” that ISDU was published on April 17, 2007. *In-Depth Geophysical*, IPR2019-00849, Paper 14, at 13. Because Petitioner falls short of its burden to show that ISDU qualifies as a prior art printed publication, Petitioner has not shown that it is more likely than not that it would prevail in its prior art challenges outlined in Grounds 1, 5, and 7.

B. Petitioner’s Obviousness Grounds Do Not Raise a Substantial Question of Patentability Because No Combination of Asserted References Teach All Elements and Petitioner Has Failed to Identify Any Motivation to Modify the Prior Art or Reasonable Expectation of Success.

A patent is unpatentable as obvious under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter would have been obvious to a POSITA at the time of the effective filing date. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). A showing of obviousness requires: (1) that the prior art teach or suggest each claim limitation; (2) that there is a motivation to combine or modify the prior art in the way Petitioners propose; and (3) that a POSITA would have a reasonable expectation of success in the proposed combination or modification. *Id.*; *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007); *Regents of Univ. of California v. Broad Institute, Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018).

For all grounds, Petitioner attempts to place the burden on the Board and Intirion to figure out the arguments on its behalf. Instead of discussing the combinations holistically, the Board (and Intirion) are left to cross-reference portions of over 80 pages of petition to determine what each reference is alleged to disclose, then come up with the mechanism of the combination ourselves. Petitioner's attempt to place the burden on the Board and Intirion to figure out the arguments on its behalf, but this should be rejected. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) ("In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.... Thus, it was Harmonic's burden to explain to the Board how Haskell combined with Rossmere rendered the challenged claims unpatentable.").

Further, the Petition's conclusory, piecemeal analysis of the claims fails to show the references (even if the method of combination were described) meet all the claim elements of the independent claims 1, 15, and 22. Accordingly, the Petition's flaws are fatal to its allegation of obviousness with regard to all claims.

i. Ground 1: Emma and ISDU.

As an initial matter, Petitioner has not met (and cannot meet) its burden to show ISDU qualifies as prior art, as there is no evidence it was published until long after the critical date. *See* Section A. Regardless, Ground 1 also fails because Emma and ISDU combined do not render obvious all elements of the independent claims

of the '746 patent, including the “smoke sensor,” “the control circuit,” “shut-down function,” and “reset-enable function” elements. Absent any one of these elements, Petitioner’s Petition fails. Further, the combination of Emma and ISDU also fails because Petitioner relies on ISDU to supply claim limitations that ISDU itself recognizes are not enabled. Even setting aside those failures, Ground 1 fails because Petitioner has not met its burden to show both a motivation to combine Emma and ISDU or a reasonable expectation of success.

1. Emma and ISDU fail to disclose all elements of independent claims 1, 15, and 22.

Petitioner has failed to meet its burden to show that the combination of ISDU and Emma teaches each and every claim element. *KSR Int’l Co.*, 550 U.S. at 406. Nowhere is Ground 1 discussed holistically. Rather, we are meant to somehow puzzle together Petitioner’s grounds (without reference to the actual claim language) by cross-referencing piecemeal portions of the Petition spanning nearly forty pages. In obfuscating its grounds, Petitioner has failed to even allege the combination of Emma and ISDU meets all claim elements. The Board has repeatedly stated that a party must adequately explain its positions and cannot rely on the Board to wade through the record to uncover arguments it failed to articulate. *Tct Commc’n Tech. Holdings Ltd. V. Dataquill Ltd.*, No. IPR2020-00746, 2020 WL 5592711, at *10 (P.T.A.B. Sept. 18, 2020) (denying institution where petitioner’s argument merely quoted sections of the prior art “unaccompanied by explanation of how the cited

portions teach or disclose limitation 1.f, or of their significance to the analysis”); *Fellowes, Inc., Petitioner, v. Treefrog Devs., Inc., Pat. Owner.*, No. IPR2020-01623, 2021 WL 1287222, at *5 (P.T.A.B. Apr. 6, 2021) (denying institution where petitioner argued that a claim limitation “can be satisfied by a variety of different disclosures in [the prior art]” because such arguments failed to “identify with sufficient specificity the structure of [the prior art] that allegedly meets the [limitation]”).³ Thus, it is unsurprising Petitioner does not offer evidence satisfying its burden to prove a combination of Emma and ISDU satisfies all elements, including for example (1) “smoke sensor,” (2) “control circuit,” (3) “shut-down function,” and (4) “reset-enable function”.

a. “Smoke sensor.”

The combination of Emma and ISDU does not disclose a smoke sensor in operative connection with the cooking area as described in independent claims 1, 15 and 22. Claims 1, 15, and 22 require:

Claim 1:

a smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area,

Claim 15:

at least one smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area,

³ This applies equally to each asserted Ground 1-8, as each of Petitioner’s grounds is scattered piecemeal throughout the entire Petition.

Claim 22:

at least one smoke sensor, wherein the at least one smoke sensor is positioned in operative connection with the cooking area.

Ex. 1001 at claims 1, 15, and 22.

The smoke detector in ISDU is not located in operative connection with a cooking area inside the microwave oven. Instead, ISDU teaches a smoke detector wherein a portion of the smoke detector (including the sensitivity adjustment) is located *outside of* the microwave. Ex. 1012, ISDU at 3. In other words, the microwave of ISDU does not include a smoke sensor.

b. “Control circuit.”

The combination of Emma and ISDU does not disclose the control circuit is in operative connection with the smoke sensor as described in independent claims 1, 15 and 22. Claims 1, 15, and 22 require:

Claim 1:

wherein the at least one power control circuit is in operative electrical connection with each of the power cord, the at least one electrical connector, the magnetron, and the smoke sensor,

Claim 15:

wherein the at least one power control circuit is in operative electrical connection with the magnetron, the at least one smoke sensor, and the at least one electrical connector,

Claim 22:

wherein the at least one power control circuit is in operative connection with each of the magnetron and the at least one smoke sensor,

Petitioner fails to allege, let alone support, that the smoke sensor of ISDU is in operative connection with the claimed control circuit. While Petitioner alleges Emma discloses the claimed power control circuit, Petitioner does not allege Emma discloses a smoke sensor, and thus, Petitioner does not argue Emma discloses the claimed control circuit in operative communication with a smoke sensor. Petition at 33-37, 46-52. Instead, Petitioner alleges ISDU meets this limitation because the smoke detector of ISDU is in operative connection with ISDU's circuit. *See* Petition at 46-47. Petitioner is not relying on ISDU to disclose the claimed control circuit. *Id.* at 37-38. And nowhere does Petitioner allege a combination wherein the smoke detector of ISDU is in operative connection with the control circuit of Emma. *See generally* Petition. Thus, Petitioner has failed to even allege that the combination of Emma and ISDU meet the "smoke sensor" claim elements, and Ground 1 fails. *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006) (proving obviousness requires "articulated reasoning with some rational underpinning").

c. "Shut-down function."

Petitioner also fails to show the "shut-down function" element of claims 1, 15, and 22:

Claim 1:

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session,

Claim 15:

wherein responsive at least in part to a level of smoke sensed by the at least one smoke sensor during a cooking session, the at least one power control circuit is operative to cause power to the magnetron to be withdrawn to end the cooking session prior to a set end time,

Claim 22:

wherein the at least one power control circuit is operative to cause responsive at least in part to a level of smoke sensed by the at least one smoke sensor, cooking power being currently delivered to the magnetron to be withdrawn whereby a current cooking session is ended prior to a set end time.

Emma is not alleged to meet this claim element, and Petitioner has failed to allege (and ISDU does not teach) ending a microwave operation prior to a set end time of a current cooking session. Petition at 52-54. Further, as cited by Petitioner, ISDU does not disclose the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn. Rather, ISDU teaches that microwave operations are temporarily disabled, without reference to whether cooking power is available or not. Ex. 1012, ISDU at 1.

d. “Reset enable function.”

Petitioner further has not shown that the combination of Emma and ISDU discloses the “reset enable function” found in each independent claim.

Claim 1:

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session.

Claim 15:

wherein after the cooking session has been caused the end based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive power to commence a next subsequent cooking session,

Claim 22:

wherein the at least one power control circuit is operative to cause after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, cooking power to be delivered to the magnetron to commence a next subsequent cooking session.

Petitioner does not allege Emma discloses this “reset enable function” element. Petitioner further does not allege or offer any evidence that ISDU meets this element. Petitioner’s full argument that this element is met by ISDU is provided below:

As shown above, ISDU discloses the power control circuit enables the microwave oven, including its magnetron, to receive cooking power in a subsequent cooking session to enable further cooking. *Id.*; Ex. 1002 ¶¶[186-87, 283, 289] Ex. 1023 ¶[225].

Petition at 57. Yet this claim element is not “shown above” or described previously.⁴ Instead, ISDU is shown to “reset the *smoke detector circuit* for further use.” *Id.* (citing Ex. 1012 at 8-9). Further, Petitioner’s citation to Exhibits 1002 and 1023—*pages* of Dr. Horenstein’s declarations for a separate petition for *inter partes*

⁴ As with the “smoke sensor” claim element, Petitioner has failed to allege that the control circuit of Emma is used to meet this claim element. *See* Petition at 56-59 (“reset-enable” prior art claims); 68-72 (describing the alleged combination). Thus, Ground 1 fails.

review and this Petition—*cannot* be the sole basis for Petitioner’s argument that ISDU meets this claim element. *Freedom to Operate, Inc.*, No. PGR2022-0012, Paper No. 18 at 20-21.⁵

Because Petitioner has failed to demonstrate that the combination of Emma and ISDU renders any of the independent claims of the ’746 patent obvious, Petitioner has failed to show that the dependent claims 2-3, 5-6, 8-11, 13-14, 16-17 and 20-21, and 23-24 are obvious.

2. ISDU does not enable the claim elements for which Petitioner utilizes ISDU.

In addition to not being shown to be prior art and failing to teach all required elements of the independent claims, by its own admission, ISDU did not function. On its face, ISDU purports to be a student paper, with the goal of completion by “spring break”. Ex. 1012, ISDU at 27. Despite the students’ efforts, ISDU encountered “implementation issues,” and the students did not produce a working model. *Id.* at 25-26. Indeed, the students experienced forced resets of the magnetron, and their attempts to fix the issue resulted in “disable[ment of] our reset function.” *Id.* at 26. While prior art need not be self-enabling, when it is not, that prior art has more narrow utility in an obviousness analysis. “For example, a reference that does

⁵ Moreover, as is the case with the bases above, Petitioner has failed to allege, let alone support, that the control circuit of Emma (the alleged claimed control circuit) is what “is operative thereafter to enable the magnetron to receive cooking power.” *See supra* Sections IV.B.i.b-d. For this reason, too, Ground 2 fails.

not provide an enabling disclosure for a particular claim limitation may nonetheless furnish the motivation to combine, and be combined with, another reference *in which that limitation is enabled.*” *Raytheon Techs. Corp. v. General Elec. Co.*, 993 F.3d 1374 (Fed. Cir. 2021) (emphasis added). “In this context the reference must necessarily enable the relied-upon portion of its own disclosure—the same standard applied to anticipatory references.” *Id.* (citing *In re Antor Media Corp.*, 689 F.3d 1282, 1290 (Fed. Cir. 2012) (“[A] prior art reference need not enable its full disclosure; it only needs to enable the portions of its disclosure alleged to anticipate the claimed invention.”)).

Here, Petitioner relies on ISDU to disclose the “smoke sensor” (Petition at 46-47), “shut-down function” (*id.* at 52-54), and “reset enable function” (*id.* at 57). Putting aside for now that Petitioner does not contend with the actual claim language, the “shut-down function” and “reset enable function” are *precisely* what ISDU’s student writers indicated did not work. Ex. 1012, ISDU at 26. Because ISDU does not enable these claim elements—found in each independent claim of the ’746 Patent—Ground 1 fails.

3. Petitioner fails to show motivation to combine Emma and ISDU and fails to demonstrate a reasonable expectation of success.

Despite that ISDU was an undergraduate paper that never functioned, Petitioner asserts that a POSITA would be motivated to combine ISDU with Emma.

But a POSITA would not be motivated to combine a non-functional student paper with Emma. Emma does not mention smoke sensors *at all*. *See generally* Ex. 1002. To the extent Emma mentions sensors, they are current sensors—which is what Emma *is* focused on. *E.g.*, Ex. 1002, ¶[0029]. Petitioner’s only link in its alleged motivation to combine ISDU and Emma is that both are concerned with microwave safety, and that adding a smoke sensor to Emma is obvious in light of Emma’s goal of improving the safety of microwaves (despite that Emma is directed to preventing current overload conditions). Petition at 66-67. Petitioner’s “motivation to combine” is no more than an improper attempt to reconstruct the claimed invention of the ’746 patent through hindsight using the claimed invention itself as a template. *See Sensonics Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (“The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.”). A POSITA would not have been motivated to combine Emma with ISDU.

Petitioner also has the burden of showing a reasonable expectation of success. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (“It was [Petitioner]’s burden to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have

had a reasonable expectation of success in doing so.”); *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015) (“Dynamic, as the petitioner, had the burden of persuasion to prove unpatentability by a preponderance of the evidence, and this burden never shifted.”). Yet Petitioner fails to meaningfully allege an expectation of success in combining Emma and ISDU, or offer any support thereof. Petition at 68-69. The closest Petitioner comes to attempting to meet its burden is stating:

Based on ISDU’s teaching and/or the motivation to have the smoke sensor be optimally positioned in a location to detect generated smoke close to its source, a POSITA would have placed, or at least tried to place, the smoke detection sensor in operative connection with the cooking area of the microwave oven; otherwise, it would not function as intended. Ex 1023 ¶[256]. The POSITA would have had a reasonable expectation of success in detecting smoke more quickly compared to attempting to detect smoke using a smoke detector positioned further away from the cooking area. *Id.*

Petition at 68. This is the full extent of Petitioner’s explanation of a POSITA’s reasonable expectation of success. This paragraph is directed just to the placement of the smoke sensor in operative connection with the microwave oven and does not come close to demonstrating how or why Emma and ISDU could successfully be combined. *See Unified Patents LLC v. Divx LLC*, IPR2019-01379, Paper 52, *36–37 (“Although proof of physical or bodily incorporation is not required, a satisfactory explanation of ‘how the combination of the . . . references [is] supposed to work’ is necessary to support [a conclusion of obviousness].”)

Petitioner has not demonstrated that a POSITA would be motivated to combine Emma and ISDU, nor that a POSITA would have a reasonable expectation of success in doing so.

ii. Ground 2: Emma and Smith.

Petitioner argues the combination of “the microwave refrigerator combination of Emma with the smoke sensor discussed in Smith” render claims 1-3, 5, 6, 8-11, 13-17 and 20-24 of the ‘746 Patent invalid. Petition at 70. Ground 2 fails because Petitioner has not shown Emma or Smith show critical elements, including a smoke sensor, enabling to receiving cooking power in a next subsequent cooking session smoke sensor, which are recited in all the Challenged Claims. Additionally, Petitioner’s Ground 2 fails because Petitioner has not shown both that a POSITA would have been motivated to combine Emma and Smith or have a reasonable expectation of success in doing so. Petitioner’s failures are unsurprising, as Smith is *at best* duplicative of references already considered and repeatedly rejected by the Examiner during prosecution.

1. Emma and Smith do not show a reset, removal of power prior to a set end time, a next subsequent cooking session, or a smoke sensor.

Petitioner fails because it did not meet its burden to show that Smith (or Emma) discloses the claimed “smoke sensor,” the Shut-Down Function Element,” the removing power prior to the magnetron prior to a set end time, the enablement

to receiving cooking power, let alone, in a next subsequent cooking session—claim limitations which are found in the independent claims of the '746 patent.

a. “Smoke sensor.”

First, the combination of Emma and Smith does not disclose a smoke sensor, let alone a smoke sensor in operative connection with the cooking area as described in independent claims 1, 15 and 22.

Petitioner admits Emma does not teach a smoke sensor. However, Petitioner does not meet its burden to show that Smith teaches the claimed smoke sensor. As Petitioner nearly acknowledges, Smith discloses only gas sensor 52, which is specifically described as being responsive to “water vapor”—i.e., it is no more than a humidity sensor. *See* Petition at 48; Ex. 1014, Smith at 1:32-40, 3:15-16. This is also consistent with Smith’s description that the sensor is normally used for “automatic cooking.” Indeed, cooking sensors used at that time for automatic cooking were humidity sensors. (*See, e.g.*, Ex. 1002 at 93-94, 100 (describing use of vapor/humidity sensors in automatic cooking), at 139 (arguing Ueda and Smith “use the same” sensor).)

Rather than address the actual disclosure in Smith, Petitioner relies on a completely different Figaro Model No. 816 sensor rather than the disclosed Figaro Model No. 186, and complains in declarations that the Smith disclosure must have been a typographical error. Put simply, Petitioner cannot read in a wholly separate

sensor into Smith.⁶ In addition to citing nothing in the document itself, the prosecution history, or any related patents, supporting that “Model TGS No. 186” was a typographical error, Petition does not even show the separate 816 model number was available by July 7, 1983. Petition at 48-50. Instead, Petitioner relies on a conclusory declaration that refers to documentation for a Model 816 dated (and revised) nearly 20 years later. Petition at 48-50. Petitioner cannot show a smoke sensor by reading in a “typographical error” which it does not show would have been appreciated by a POSITA, and which is based on extrinsic documentation 20-years-post-dating the Smith reference. Moreover, it appears this was not a “typographical error” and instead an intentional choice, which was restated multiple times in this specification. Ex. 1014, Smith at 3:15-16, 4:16, 5:58.

b. “Control circuit.”

Second, Petitioner also fails to allege, let alone support, that Smith discloses the claimed control circuit, including that the claimed power control circuit is in operative connection with a “smoke sensor.” While Petitioner alleges Emma

⁶ Petitioner’s only “support” is its citation to Exhibits 1002 and 1023, which are the Declarations of Dr. Horenstein from petitions for *inter partes* review on related patents (which were not instituted) and the supplemental report submitted here—not the Smith reference. These citations contain pages of conclusory argument—pages that *do not appear in the Petition*. The Board should disregard these improperly incorporated arguments as an improper attempt to exceed the word count limit. *Freedom to Operate, Inc.*, Case No PGR2022-0012, Paper No. 18 at 20-21 (refusing to consider arguments and “other reasons” that were improperly incorporated by reference in an expert witness declaration).

discloses the claimed power control circuit, Petitioner does not allege Emma discloses a smoke sensor, as noted above. Thus, Petitioner does not argue Emma discloses the claimed control circuit in operative communication with a smoke sensor. Petition at 33-37, 46-52. Instead, Petitioner seeks to rely on Smith, alleging Smith meets this limitation because “the smoke sensor” in Smith is in operative connection with a microprocessor in Smith. *See* Petition at 37. Petitioner cannot be relying on Smith to disclose the claimed “control circuit.” *Id.* at 33-41. And nowhere does Petitioner allege a combination wherein the “smoke sensor” of Smith is in operative connection with the control circuit of Emma. *See generally* Petition; Petition at 70-74. Thus, Petitioner has failed to even allege that the combination of Emma and Smith meet the “power control” claim elements, and Ground 2 fails. *In re Kahn*, 441 F. 3d at 988 (proving obviousness requires “articulated reasoning with some rational underpinning”).

c. “Shut-down function.”

Third, Ground 2 further fails because Petitioner does not demonstrate that either Emma or Smith teach removing power to the magnetron prior to a set end time, required by all independent claims. Petitioner describes this as falling under “The Shut-Down Function Element.” *See* Petition at Appendix A. However, in the “Shut-Down Function Element” section, Petitioner does not mention Emma at all, and does not mention “a set end time” or “removing power prior to the set end time,”

let alone doing so “responsive at least in part to a level of smoke sensed by the smoke sensor.” Petition at 52-56. Thus, Petitioner must be relying solely on Smith. However, Smith does not disclose such, and Petitioner makes no argument to the contrary. Petition at 54-55. Petitioner has failed to meet its burden on this critical element.⁷

d. “Reset enable function.”

Fourth, Petitioner’s Ground 2 fails because neither Emma nor Smith teach the element of enablement to receive cooking power, let alone, enabling to receiving cooking power in a next subsequent cooking session. Petitioner argues this limitation falls under the “reset enable function.” Petition at Appendix A. Petitioner does not allege Emma teaches this element. Petition at 57-60. Likewise, Petitioner does not meaningfully argue Smith discloses this element. Petition at 59-60 (failing to identify a reset, or any enablement of cooking power in a subsequent cooking session by the claimed control circuit). Further, Petitioner’s limited allegation that Smith meets this claim limitation is disingenuous, because Smith does not mention a reset or enabling power in a subsequent session after a current cooking session has been caused to end based on sensing smoke.

⁷ Additionally, Petitioner has failed to allege, let alone support, that the control circuit of Emma (the alleged claimed control circuit) is what “is operative to cause cooking power to the magnetron to be withdrawn.” For this reason, too, Ground 2 fails.

Additionally, Petitioner has failed to allege, let alone support, that the control circuit of Emma (the alleged claimed control circuit) is what “is operative thereafter to enable the magnetron to receive cooking power.” *See supra* Section IV.B.i.1.d. For this reason, too, Ground 2 fails.

Petitioner cannot create this, or any other, missing element out of thin air. Nonetheless, despite Ground 2 being based on Emma and Smith, Petitioner further attempts to improperly combine these references with the knowledge of a POSITA. *E.g.*, Petition at 75-76 (arguing a POSITA would have added “the Reset Enable Function.”) This is improper and should not be considered. *See Tct Commc'n Tech. Holdings Ltd.*, No. IPR2020-00746, 2020 WL 5592711, at *10; *Fellowes, Inc., Petitioner*, No. IPR2020-01623, 2021 WL 1287222, at *5; *Kahn*, 441 F. at 988 (requiring “articulated reasoning with some rational underpinning”).⁸ Additionally, the Board has recognized that, “in an obviousness analysis, conclusory assertions

⁸ Petitioner’s argument that “should the Board disagree” additionally fails to inform the Board regarding the difference between the claim and the alleged prior art references. Thus, Petitioner has not met its burden to establish “the differences between claimed subject matter and the alleged prior art, Smith—or what missing limitations Petitioner seeks to derive from [a POSITA].” *See Eizo Corp. v. Barco N.V.*, IPR2014-00358, Paper 11, at 29-30(PTAB July 23, 2014) (holding that Petitioner failed its burden under *Graham* in failing to disclose the differences between the claimed subject matter and the prior art, leaving the Board unable to determine what limitations of the prior art Petitioner was relying on to disclose a disputed limitation). Thus, for this additional reason, Ground 2 fails. (*See infra* Section IV.B.iii.3 (describing *Eizo*).)

from a third party about general knowledge in the art cannot, without supporting evidence of record, supply a limitation that is not evidently and indisputably within the common knowledge of those skilled in the art.” *See* November 2019 Update to the Trial Practice Guide at 36. “Furthermore, because an inter partes review may only be requested ‘on the basis of prior art consisting of patents or printed publications,’ 35 U.S.C. § 311(b), expert testimony cannot take the place of disclosure from patents or printed publications. In other words, expert testimony may explain ‘patents and printed publications,’ but is not a substitute for disclosure in a prior art reference itself.” *Id.*; *see also K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014); *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1366-67 (Fed. Cir. 2016) (Reversing obviousness decision because the Patent and Trial Appeal Board presumed a missing claim limitation was present in the prior art based on conclusory statements made by Petitioner’s expert).

Regardless, a POSITA would not be motivated to further modify Smith and/or the Smith/Emma combination to contain the “Reset Enable Function.” For example, there is no teaching within the references that after “fire detection” circuitry is triggered, the system should be turned back on. The opposite is true. Indeed, the purpose of the invention is to prevent or cease feeding a fire, and contrary to Petitioner’s suggestion, the Smith states the alarm is for “an imminent fire condition in the cooking cavity.” Ex. 1014, at 5:14-15. It would be illogical and counter to

the stated purpose of Smith to allow the system to be re-enabled. This is especially true here, because Smith discloses turning off power to the blower. Indeed, absent some other teaching that it would be okay to re-enable power to the microwave (let alone do so to deliver power in a subsequent cooking session), Petitioner has offered no evidence of a “reset” element taught in Smith or Emma and cannot even begin to meet its burden.

2. Petitioner fails to demonstrate a reasonable expectation of success or motivation to combine.

Petitioner next asserts that a POSITA would be motivated to combine the power demanding humidity sensor of Smith with Emma. However, Smith’s current draw would likely have not complied with the maximum standby draw under statute for consumer microwaves. *See* 73 Fed. Reg. 62034, at -036 (noting maximum standby power = 1.0 watt for microwave ovens); 78 Fed. Reg. 36316, at -317 (noting adoption of the 1.0 watt maximum standby power limit); *see also* Ex. 1002, Appendix C. Thus, a POSITA would not have looked to Smith.

Moreover, the references relate to two wholly separate purposes, with Smith using a humidity sensor to prevent or cease feeding a fire and Emma in part being directed to minimizing draw on dormitory outlets via the use of power cycling in a combination appliance. Not only are the purposes unconnected, in fact, Emma’s purpose would be undercut by incorporating the humidity sensor proposed by Smith which appears to require significant standby power. Petitioner’s conclusory

assertion unsurprisingly fails to address any of these deficiencies. Emma does not mention smoke sensors *at all*. *See generally* Ex. 1002. To the extent Emma mentions sensors, they are current sensors—which is what Emma *is* focused on—and are a means to control and minimize current draw via power cycling. *E.g.*, Ex. 1002, ¶[0029].

Petitioner’s main argument in its alleged motivation to combine Smith into Emma is that both are concerned with “optimizing electric cooking appliances,” and that adding a humidity sensor to Emma is allegedly obvious in light of Emma’s goal of improving the safety of microwaves (despite that Emma is directed to preventing current overload conditions). Petition at 70-71. Petitioner’s “motivation to combine” is no more than an improper attempt to reconstruct the claimed invention of the ’746 patent through hindsight using the claimed invention itself as a template. *See Sensonics Inc.*, 81 F.3d at 1570 (“The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.”). A POSITA would not have been motivated to combine Emma with Smith, let alone do so by operatively connecting Smith to the control system of Emma, as required by all independent claims, for a purpose not discussed in either reference.

Regardless, Petitioner also has the burden of showing reasonable expectation of success, which it fails to satisfy. *See Intelligent Bio-Systems, Inc.*, 821 F.3d at

1367–68 (“It was [Petitioner]’s burden to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’”); *Dynamic Drinkware, LLC*, 800 F.3d at 1379 (“Dynamic, as the petitioner, had the burden of persuasion to prove unpatentability by a preponderance of the evidence, and this burden never shifted.”). Petitioner fails to allege anything beyond a conclusory assertion of an expectation of success in combining “any of these known potential solutions.” Petition at 71-72. This single paragraph containing Petitioner’s conclusory assertion of a POSITA’s reasonable expectation of success **does not** come close to demonstrating how or why Emma and Smith could successfully be combined and further modified. *See Unified Patents LLC*, IPR2019-01379, Paper 52, *36–37 (“Although proof of physical or bodily incorporation is not required, a satisfactory explanation of ‘how the combination of the . . . references [is] supposed to work’ is necessary to support [a conclusion of obviousness].”).

Petitioner has not demonstrated that a POSITA would be motivated to combine Emma and Smith (and further modify the combination), nor that a POSITA would have a reasonable expectation of success in doing so.

iii. Grounds 3 and 4: Emma combined with Butt or Emma in view of Butt and Smith.

Ground 3 and 4 fail because Petitioner's combination of either Emma and Butt, or Emma in view of Butt and Smith, does not render obvious all elements of the independent claims of the '746 patent, including the "smoke sensor," "control circuit," "shut-down function," and "reset-enable function" elements. *KSR Int'l Co.*, 550 U.S. at 406. Grounds 3 and 4 also fail because Petitioner has not met its burden to show either a motivation to combine Emma and Butt or Emma, Butt, and Smith, or a reasonable expectation of success. Grounds 3 and 4 should be disregarded.

1. The combination of Emma and Butt (and Emma, Butt and Smith) fails to disclose all elements of the independent claims.

Petitioner has not demonstrated (nor could it) that the combinations of Emma and Butt, or Emma in view of Butt and Smith, disclose the "smoke sensor," "shut-down function," or "reset enable" terms, which are recited in all independent claims of the '746 patent. Thus, Grounds 3 and 4 fail to render obvious the '746 patent. *KSR Int'l Co.*, 550 U.S. at 406.

a. "Smoke sensor."

The combination of Emma and Butt, or Emma, Butt, and Smith, does not disclose a smoke sensor in operative connection with the cooking area as described in independent claims 1, 15 and 22. Claims 1, 15, and 22 require:

Claim 1:

a smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area,

Claim 15:

at least one smoke sensor, wherein the smoke sensor is positioned in operative connection with the cooking area,

Claim 22:

at least one smoke sensor, wherein the at least one smoke sensor is positioned in operative connection with the cooking area.

Emma is not alleged to meet these claim elements. *See generally* Petition.

Butt does not make up for Emma's deficiency.

Butt is directed to a controller for a safety shut-off system. Ex. 1015. Butt discloses a "controller," including a smoke detector or tremor detector, that may be plugged into a stove's cord, to then be plugged into the wall. *Id.* at Fig. 1A and 1B, 4:29-40. Upon sensing a trigger, the controller interrupts the AC power supply to the stove, thus limiting the "energy that would otherwise act as an accelerant for the fire". *Id.* at 4:55-60.

Butt fails to disclose a smoke sensor in an appliance, let alone (as the claims require) a smoke sensor *positioned in operative connection with a cooking area inside the microwave oven*. Indeed, Petitioner does not even allege Butt discloses a smoke sensor *positioned in operative connection with a cooking area inside the microwave oven*. Petition at 50-51. Petitioner alleges instead that Butt "includes a

smoke sensor in operative connection with the cooking area of a cooking range.” *Id.* at 51. This allegation is insufficient, because Petitioner does not allege Butt discloses a smoke sensor’s position in relation to “a cooking area inside *the microwave oven.*” Moreover, Petitioner’s cited “support” for this statement fails to even disclose a smoke sensor in operative connection with the cooking area of a cooking range. *See* Ex. 1015 at 2:22-25 (“According to a first aspect of the invention, there is provided a controller for a system that interrupts a supply of electricity to an electrical appliance upon detecting a trigger.”) (cited at Petition at 51). Put simply, a microwave is not a range, and regardless, Petitioner’s citations do not support Petitioner’s contention that Butt discloses a smoke sensor in operative connection with the cooking area of a cooking range.

In addition to not coming close to satisfying its evidentiary burden, Petitioner’s argument related to Butt, including specifically Petitioner’s argument that Butt, plugged into the wall, is in operative connection with the cooking area of a cooking range, fails to give effect to all words of the claim. The claim requires the smoke sensor be in operative connection with the *cooking area*. Petitioner’s apparent interpretation is a smoke sensor within the vicinity of the microwave itself meets this limitation. If this is what the claim meant, the claim would read “in operative connection with the microwave.” It does not, and Petitioner’s position should be rejected.

Finally, the addition of Smith to Emma and Butt does not rectify these deficiencies. As discussed in Section IV.B.ii.1, Smith does not disclose a smoke sensor as required by the claims. Thus, even assuming Petitioner had sufficiently described what a combination consisting of Emma, Butt, and Smith would look like, *see infra* Section IV.B.iii.2-3, Smith does not supply this claim element, and Grounds 3 and 4 fail.

b. “Control circuit.”

The combination of Emma and Butt, or Emma, Butt, and Smith, does not disclose the control circuit is in operative connection with the smoke sensor as required in independent claims 1, 15 and 22.

Petitioner also fails to allege or support that the smoke sensor in Butt is in operative connection with the claimed control circuit. Instead, Petitioner alleges Butt meets this limitation because the smoke sensor of Butt is in operative connection with *Butt’s* “controller.” Petition at 39-41 (“Butt teaches a controller 20 configured to control the operation of a kitchen appliance (i.e., “at least one power control circuit”) that is in operative electrical connection to a smoke detector (i.e., “Smoke Sensor”)”). Petitioner is not relying on Butt to disclose the claimed control circuit. *Id.* at 38-41. And nowhere does Petitioner allege a combination wherein the smoke sensor of Butt is in operative connection with the control circuit of Emma. *See generally* Petition. Thus, Petitioner has failed to even allege that the

combination of Emma and Butt meets the “smoke sensor” claim elements, and Ground 3 fails.

The addition of Smith to Emma and Butt does not rectify the deficiencies. As discussed in Section IV.B.ii.1, Smith does not disclose a smoke sensor as required by the claims, let alone the claimed control circuit in operative connection with the claimed smoke sensor. Thus, even assuming Petitioner had sufficiently described what a combination consisting of Emma, Butt, and Smith would look like, *see infra* Section IV.B.iii.2-3, Smith does not supply this claim element, and Grounds 3 and 4 fail.

c. “Shut-down function.”

The combination of Emma and Butt, or Emma, Butt, and Smith, does not disclose the “shut-down function” as described in independent Claims 1, 15, and 22. Claims 1, 15, and 22 require:

Claim 1:

wherein responsive at least in part to a level of smoke sensed by the smoke sensor, the at least one power control circuit is operative to cause cooking power to the magnetron to be withdrawn to end a current cooking session prior to a set end time of the current cooking session,

Claim 15

wherein responsive at least in part to a level of smoke sensed by the at least one smoke sensor during a cooking session, the at least one power control circuit is operative to cause power to the magnetron to be withdrawn to end the cooking session prior to a set end time,

Claim 22:

wherein the at least one power control circuit is operative to cause responsive at least in part to a level of smoke sensed by the at least one smoke sensor, cooking power being currently delivered to the magnetron to be withdrawn whereby a current cooking session is ended prior to a set end time.

Emma is not alleged to meet this claim element, and Petitioner has failed to allege (and Butt and Smith do not teach) configuration to withdraw cooking power to a microwave prior to a set end time of a current cooking session. Petition at 52-56. Rather, as Butt teaches, Butt stops *all* power to a range in the event of a fire, to make it so that “the energy that would otherwise act as an accelerant for the fire is eliminated.” Ex. 1015, 4:55-60. This does not disclose withdrawing cooking power to a magnetron, a set end time of a current cooking session, or withdrawing power prior to a set end time. Thus, Emma in view of Butt fails to teach the “shut-down function.”⁹

Smith does not supply this element as described in Section IV.B.ii.1. Thus, the combination of Emma, Butt, and Smith likewise fails to teach the “shut-down function,” which is found in every independent claim of the ’746 Patent, so Grounds 3 and 4 fail.

⁹ As with the “smoke sensor” claim element, Petitioner has failed to allege that the control circuit of Emma is used to meet this claim element. See Petition at 52-55 (“shut-down function”); 74-80 (describing the alleged combination). Thus, Grounds 3 and 4 fail.

d. “Reset enable function.”

The combination of Emma and Butt (or Emma, Butt, and Smith) does not disclose the “reset enable function” element, required in independent Claims 1, 15, and 22:

Claim 1:

wherein after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive cooking power in a next subsequent cooking session.

Claim 15:

wherein after the cooking session has been caused the end based on the sensed level of smoke, the at least one power control circuit is operative thereafter to enable the magnetron to receive power to commence a next subsequent cooking session.

Claim 22:

wherein the at least one power control circuit is operative to cause after the current cooking session has been caused to end prior to the set end time based on the sensed level of smoke, cooking power to be delivered to the magnetron to commence a next subsequent cooking session.

Petitioner does not allege Emma discloses this element. Petitioner does not allege that Butt discloses “the control circuit” (Petition at 40-41), and thus, even without more, Butt cannot disclose “the control circuit is operative” to do anything. Even ignoring Butt does not teach “the control circuit,” Petitioner further does not allege that Butt’s “control circuit is operative to enable the magnetron to receive cooking power in a next subsequent cooking session.” For example, nowhere does Butt describe microwaves, let alone magnetrons. *See generally* Ex. 1015. Instead,

Petitioner incorrectly alleges that Butt’s reset button, which allows AC power to be delivered to a cooking range, meets this claim limitation. Petition at 57. Importantly, allowing AC power to be delivered to a cooking range fails to disclose the control circuit being operative to enable a magnetron to receive cooking power in a next subsequent cooking session or the control circuit enabling cooking power to be available to the magnetron in a next subsequent cooking session.

As discussed in Section IV.B.ii.1, Smith does not disclose this element. Thus, Petitioner has failed to show that the combination of Emma and Butt, or Emma, Butt, and Smith, make obvious the “reset enable function” found in all independent claims of the ’746 patent, and Grounds 3 and 4 fail.

2. Petitioner has not alleged motivation to combine or a reasonable expectation of success for Emma and Butt or Emma, Butt, and Smith.

Petitioner has not shown a motivation to combine Butt with Emma or Emma and Smith. Initially, as with Emma and ISDU or Emma and Smith, there is no teaching in Emma that would lead a POSITA to reasonably combine Emma with a smoke sensor reference. Yet Emma combined with Butt is even further afield than Emma and ISDU or Smith—at least ISDU and Smith relate to microwaves. Petitioner baldly states that “Emma’s teaching [cycling power to a refrigerator and auxiliary electrical outlets for the purpose of improving the safety of the Emma appliance] would motivate a POSITA to look to further microwave functionalities,

including those in Butt.” Petition at 75. Butt does not even *mention* microwaves. *See generally* Ex. 1015. Butt is directed to an external controller for a safety shut-off system. Ex. 1015. Butt discloses a “controller,” including a smoke detector or tremor detector, that may be plugged into a stove’s cord, to then be plugged into the wall. *Id.* at Fig. 1A and 1B, 4:29-40. Upon sensing a trigger, the controller interrupts the AC power supply to the stove, thus limiting the “energy that would otherwise act as an accelerant for the fire”. *Id.* at 4:55-60. The device of Butt is plugged into the wall, then a stove or oven is plugged into Butt. The device of Butt also teaches away from including this “controller for a safety shut-off system” into a stove, as it discloses that including this wiring in the home itself using standard size circuit boxes avoids “increase[d] manufacturing costs, which must be passed on to consumers,” and is designed such that it can be used to remove supply “for any reason whatsoever, including those unrelated to a kitchen fire (e.g., an earthquake.)” or “leaving young children alone.” The Petition contains no explanation why a POSITA would be motivated to combine Butt—which has a sensor placed away from the appliance, teaches away from integration into a stove, and does not discuss microwave applications—with Emma or Emma and Smith. Petitioner’s argument that a POSITA would be motivated to combine Butt with Emma or Emma and Smith is based on the flawed premise that a POSITA would look to a reference directed to stoves. Petitioner’s combination of Emma and Butt (or Butt and Smith) is blatant

hindsight manipulation of the art, and should be disregarded. *Sensonics Inc.*, 81 F.3d at 1570.

Petitioner also has the burden of showing reasonable expectation of success. *See Intelligent Bio-Systems, Inc.*, 821 F.3d at 1367–68 (“It was [Petitioner]’s burden to demonstrate both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’”); *Dynamic Drinkware, LLC*, 800 F.3d at 1379 (“Dynamic, as the petitioner, had the burden of persuasion to prove unpatentability by a preponderance of the evidence, and this burden never shifted.”). Yet Petitioner fails to even allege an expectation of success in combining Emma and Butt (Petition at 76-77, describing Emma and Butt motivation to combine) or Emma, Butt, and Smith (*Id.* at 77-81). The closest Petitioner comes to attempting to meet its burden is stating:

- “It would have been obvious to a POSITA to modify Emma with Butt and Smith to include the smoke sensor in operative connection with the microwave oven with the reset functionality disclosed by Butt for the added benefit of re-using the microwave oven. A POSITA would have been able to pursue any of these known potential solutions with a reasonable expectation of success grounded in the disclosures of the prior art.” Petition at 77 (internal citations omitted).
- “The POSITA would have had a reasonable expectation of success in detecting smoke more quickly compared to attempting to detect smoke using a smoke detector positioned further away from the cooking area.” *Id.* at 79.

These conclusory allegations of reasonable expectation of success do not come close to demonstrating how or why Emma, Butt, and Smith could successfully be combined. *See Unified Patents LLC*, IPR2019-01379, Paper 52, *36–37 (“Although proof of physical or bodily incorporation is not required, a satisfactory explanation of ‘how the combination of the . . . references [is] supposed to work’ is necessary to support [a conclusion of obviousness].”) With Grounds 3 and 4, Petitioner seeks to combine concepts from different technologies, without making any showing of why or how a POSITA would expect that the technologies of one could reasonably be applied to the other. Indeed, the Petition has no discussion regarding how Butt—which is plugged into an outlet, then has a stove plugged into it, uses standard sized circuit boxes, and uses large “wireless smoke detectors” for home—could be combined with Emma or Emma and Smith, or which portions of Butt or Smith would be combined with Emma to meet the claims. Petitioner has failed to meet its burden as to Grounds 3 and 4.

3. Petitioner has not shown the differences between the claimed subject matter and Smith or Butt as required by *Graham*.

To establish obviousness, Petitioner needed to address the *Graham* factors, and establish the differences between claims 1, 15, and 22 and each of Emma, Butt, and Smith. *Graham*, 383 U.S. at 17-18; *see also Eizo Corp. v. Barco N.V.*, IPR2014-

00358, Paper 11, at (PTAB July 23, 2014). Petitioner failed to do so, and thus Grounds 3 and 4 fail.

Here, Petitioner makes the conclusory assertion that, “[t]o the extent the Board determines that the combination of Emma and Butt do not render obvious the aforementioned claims, Ground 4 is [sic] it would be obvious to a POSITA to combine Emma with Butt and Smith.” Petition at 76. “Absent an analysis clearly distinguishing the limitations of [the claims] from those of [Butt],” Petitioner has not met its burden to establish “the differences between [the claims] and [Butt] and what missing limitations Petitioner seeks to derive from [Smith].” *See Eizo Corp.*, Paper 11 at 29-30 (holding that Petitioner failed its burden under *Graham* in failing to disclose the differences between the claimed subject matter and the prior art, leaving the Board unable to determine what limitations of the prior art Petitioner was relying on to disclose a disputed limitation); *see also, e.g., Moses Lake Indus., Inc. v. Enthone, Inc.*, Case No. IPR201400243, Paper 6 at 18 (P.T.A.B. June 18, 2014); *eBay, Inc. v. Paid, Inc.*, No. CBM2014-00125, Paper 15 at 21 (P.T.A.B. Sept. 30, 2014). As in *Eizo Corp.*, it is unclear what claimed subject matter Petitioner believes are not met by Butt, or which limitations would be supplemented by Smith. The Board should find Petitioner has not established a reasonable likelihood that Petitioner would prevail in showing the unpatentability of [the independent claims] under 35 U.S.C. § 103(a) as obvious over Emma, Butt, and Smith.

iv. Grounds 5-6: Emma combined with either ISDU and Smith, in further view of the knowledge of a POSITA.

For the reasons stated above, none of Emma combined with ISDU and/or Smith, render obvious any of the independent claims in the '746 patent. Nonetheless, Petitioner further alleges that Emma combined with either ISDU and Smith, and further combined with the knowledge of a POSITA, would render obvious claims 4, 7, 8, 12, 18, and 19 of the '746 Patent.

The Board has recognized that, “in an obviousness analysis, conclusory assertions from a third party about general knowledge in the art cannot, without supporting evidence of record, supply a limitation that is not evidently and indisputably within the common knowledge of those skilled in the art.” *See* November 2019 Update to the Trial Practice Guide at 36. “Furthermore, because an inter partes review may only be requested ‘on the basis of prior art consisting of patents or printed publications,’ 35 U.S.C. § 311(b), expert testimony cannot take the place of disclosure from patents or printed publications. In other words, expert testimony may explain ‘patents and printed publications,’ but is not a substitute for disclosure in a prior art reference itself.” *Id.*; *see also K/S Himpp*, 751 F.3d at 1365; *Arendi S.A.R.L.*, 832 F.3d at 1366-67 (Reversing obviousness decision because the Patent and Trial Appeal Board presumed a missing claim limitation was present in the prior art based on conclusory statements made by Petitioner’s expert). Thus, Petitioner cannot use the “knowledge of a POSITA” to supplement the teachings of

Emma, ISDU, and/or Smith to meet a claim element, the USB port, that is not disclosed by any of these references. Petitioner does not allege that Emma (or ISDU or Smith) discloses a USB port. *See generally* Petition; *id.* at 81-84. Thus, the knowledge of a POSITA cannot be used to meet this claim element, and Grounds 5 and 6 fail.

Regardless, because Petitioner fails to show Emma combined with ISDU or Smith disclose all limitations in any independent claims 1, 15, and 22 (as discussed above with respect to Grounds 1-4), Petitioner cannot invalidate dependent claims.

v. Grounds 7-8: Emma combined with ISDU or Smith, in further view of Quezada.

The Board does not need to consider “arguments that certain dependent claim limitations would have been obvious where the base claim has not been proven invalid.” *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013). As discussed above with respect to Grounds 1-4, Petitioner fails to show Emma combined with ISDU or Smith disclose all limitations in any independent claims 1, 15, and 22. *See supra* Sections IV.B.i-iii. With respect to Grounds 7-8, Petitioner does not argue Quezada teaches or discloses any of the limiting limitations of claims 1, 15, and 22. Petition at 80-87. Petitioner instead argues Quezada teaches additional limitations in dependent claims related primarily to USB ports. Petition at 80-87. Because Petitioner fails to demonstrate any independent claim is invalid, Petitioner likewise fails to teach any dependent claim is invalid. *See Ortho-McNeil*

Pharm., Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1365 (Fed. Cir. 2008) (holding that “if claim 1 is not obvious then claims 6-8 also cannot be obvious because they all depend from a nonobvious claim”) (internal citation omitted); *Hartness Int’l, Inc. v. Simplimatic Eng’g Co.*, 819 F.2d 1100, 1108 (Fed. Cir. 1987); *In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) (holding that a claim that depends from a non-obvious independent claim is nonobvious because it contains all the limitations of the independent claim, plus a further limitation).

C. Ground 9: All Claims Are Not Indefinite As “In Operative Connection” Has Its Plain and Ordinary Meaning (Claims 1-28).

“In operative connection” is sufficiently definite. This term is not technical; it is a general descriptive term. This and similar terms are “frequently used in claim drafting to reflect a functional relationship between claimed components.” *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1118 (Fed. Cir. 2004) (referring to the term “operatively connected.”). When read in light of the specification, this term plainly describes that the cooking area is connected to the smoke sensor such that the smoke sensor is able to operate, *i.e.* sense smoke in the cooking area.

Petitioner’s argument that it does not understand “whether the connection is such that the smoke sensor somehow operates in the area or the smoke sensor operates based on being connected to the area” is unsound. The former proposed meaning gives no effect to the “connection” portion of the term, and therefore cannot

be correct. *See, e.g., Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”). By contrast, Petitioner’s latter proposed meaning gives effect to both “operative” and “connection.” A POSITA would therefore understand the plain meaning to be in accordance with the latter.

The remaining argument, that the POSITA would not know whether the claim is directed to a logical or electrical connection, is merely a complaint about the breadth of the claim. It is black letter law, however, that a broad term is not indefinite merely because it is broad. *See e.g., Ultimex Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1352 (Fed. Cir. 2009) (“Merely claiming broadly” does not “prevent the public from understanding the scope of the patent.”); *In re Gardner*, 427 F.2d 786, 788 (CCPA 1970) (“Breadth is not indefiniteness.”); *Corning Optical Commc'ns Wireless, Ltd. v. SOLiD Inc.*, No. 5:14-CV-03750-PSG, 2015 WL 5096472, at *12 (N.D. Cal. Aug. 19, 2015) (“Because [Defendant and its expert] have merely identified issues of claim breadth, the court finds that the term . . . is not indefinite.”). Here, the claim term contemplates, but is not limited to, both logical and electrical connections. This does not render the claim indefinite. Petitioner has not met its burden of proving that “in operative connection” is indefinite.

D. Ground 10: Claim 10 Is Not Indefinite, Does Not Lack Written Description, and Does Not Lack Enablement (Claim 10).

Petitioner argues that claim 10 of the '746 Patent does not have adequate written description and is not enabled. These arguments both fail. A specification provides adequate written description of an invention when it “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). A specification meets the enablement requirement when it teaches a POSA how to make and use the invention without undue experimentation, which is determined based on the consideration of multiple factors. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). Petitioner has made no showing of lack of possession or of undue experimentation. Petitioner’s lack of enablement and written description arguments should therefore be rejected.

Petitioner’s indefiniteness argument seems to take issue with the word “continuously.” To prove indefiniteness, Petitioner must show that the claims, read in light of the intrinsic record, “fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). But Petitioner’s entire argument is essentially a set of nonsensical rhetorical questions. The claim term “continuously” is not a technical term; it is a term that a POSA, or even a lay person, would understand with

reasonable certainty. Petitioner's indefiniteness argument should therefore be rejected.

E. Ground 11: Claim 14 Is Not Indefinite and Does Not Lack Written Description (Claim 14).

The Patent Statute requires that "the specification shall contain a written description of the invention" 35 U.S.C. § 112(a). Petitioner ignores the specification of the '746 Patent, including blatant written description support for claim 14 in column 4, lines 55-61:

When cooking power is demanded by the microwave the compressor is disabled by having electrical power thereto withdrawn by the at least one control circuit for a preset minimum period. When power demand to the magnetron ceases, refrigerator compressor power is restored provided that the preset minimum period has expired.

The claim term "preset minimum period" is not a technical term and a POSITA would understand it with reasonable certainty in light of the example provided in the specification at column 6, lines 43-51:

In another exemplary arrangement, a clock function 21 included in the at least one power control circuit 4 is used to provide timed delays during which, for example, refrigerator 3 would be prevented from undesirably rapid on/off cycles. When the compressor of the refrigerator 3 is disabled during microwave cooking operation, a time delay of 3 minutes is provided during which the compressor of the refrigerator 3 will remain disabled, even if microwave use is only for a short period.

Petition may not create indefiniteness or written description positions by ignoring the portions it does not like. Petitioner has not met its burden of proving

that claim 14 lacks written description or is indefinite and Ground 11 should therefore be rejected.

V. CONCLUSION

For all the above reasons, Patent Owner respectfully requests that the Board decline to institute PGR2024-00004.

Dated: January 17, 2023

/R. Scott Johnson/

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Counsel for Patent Owner Intirion

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(a)(1)(i), the undersigned hereby certifies that the foregoing Patent Owner's Preliminary Response contains 12,483 words, excluding parts of this Preliminary Response exempted under § 42.24(a), as measured by the word-processing system used to prepare this paper.

Dated: January 17, 2023

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CERTIFICATE OF SERVICE

Per agreement of the parties and pursuant to 37 C.F.R. ¶ 42.105(b), the undersigned certifies that a copy of this Patent Owner's Preliminary Response to Petition was served on January 17, 2023, electronically via Secured File Transfer on the following:

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