

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MAXLITE, INC.,
Petitioner,

v.

JIAXING SUPER LIGHTING ELECTRIC APPLIANCE CO., LTD.,
Patent Owner.

IPR2020-00208
Patent 9,807,826 B2

Before BRYAN F. MOORE, BRIAN J. McNAMARA, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION

Granting Petitioner's Request on Rehearing

37 C.F.R. § 42.71(d)

Granting Institution of *Inter Partes* Review

35 U.S.C. § 314

I. INTRODUCTION

A. Background

MaxLite, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1, 7, and 12–18 (the “challenged claims”) of U.S. Patent No. 9,807,826 B2 (Ex. 1001, the “’826 patent”). Paper 1 (“Pet.”). Jiaying Super Lighting Electric Appliance Co., Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Petitioner filed an authorized Reply to the Preliminary Response regarding the priority date of the challenged patent. Paper 7 (“Reply”). Patent Owner filed an authorized Sur-Reply to the Reply. Paper 9 (“Sur-Reply”).

We denied the Petition and did not institute an *inter partes* review of any of the challenged claims. Paper 10 (“Dec. on Inst.” or “Decision”).

Petitioner requests rehearing of our Decision not to institute review. Paper 11 (“Reh’g Req.”). Having considered the Request for Rehearing, we determine that Petitioner has shown that we abused our discretion in denying institution. We grant Petitioner’s request for the following reasons.

II. STANDARD OF REVIEW

37 C.F.R. § 42.71(d) provides that:

A party dissatisfied with a decision may file a request for rehearing. The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and where each matter was previously addressed in a motion, opposition, or a reply.

See Office Trial Practice Guide (84 Fed. Reg. 64,280 (Nov. 21, 2019)) (emphasis added). Under 37 C.F.R. § 42.71(c), “[w]hen rehearing a decision

on petition, a panel will review the decision for an abuse of discretion.” An abuse of discretion occurs when a “decision was based on an erroneous conclusion of law or clearly erroneous factual findings, or . . . a clear error of judgment.” *PPG Indus., Inc. v. Celanese Polymer Specialties Co., Inc.*, 840 F.2d 1565, 1567 (Fed. Cir. 1988) (citations omitted).

III. ANALYSIS

In its Request for Rehearing, Petitioner contends that we erred for two reasons. First, Petitioner contends that “[t]he Board’s denial of institution was based on an erroneous conclusion of law that improperly shifts the burden to MaxLite to bring forth *all* arguments with respect to why the challenged claims are not entitled to an earlier priority date.” Reh’g Req. 4–11. Second, Petitioner contends “the Board improperly shifted the burden to MaxLite with respect to the ’636 [Chinese] application inventorship issue.” *Id.* at 11–12. We address each of these arguments below.

A. Petitioner’s arguments regarding Dynamic Drinkware

In its Request for Rehearing, Petitioner contends “[t]he Board’s holding here is contrary to well-established Federal Circuit law, most recently articulated in *Dynamic Drinkware v. Nat’l Graphics, Inc.*, 800 F.3d 1375 (Fed. Cir. 2015).” Reh’g Req. 4. According to Petitioner, it has the initial burden of production, then upon satisfaction of the burden, it shifts to Patent Owner “to show that the challenged claim benefits from a filing date before the prior art.” Reh’g Req. 5 (citing *Dynamic Drinkware*, 800 F.3d at 1379–80; *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008); *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 (Fed. Cir. 2008)). Petitioner further asserts Patent Owner must show “why

the written description in the earlier application supports the claim.” *Id.* (citing *Dynamic Drinkware*, 800 F.3d at 1380). Petitioner further asserts that “[w]here there is a foreign priority claim, the patent owner must identify written description in the priority document for all limitations of the claims.” *Id.* at 6 (citing *Goeddel v. Sugano*, 617 F.3d 1350, 1353–54, 1357 (Fed. Cir. 2010)).¹ Finally, Petitioner contends “[o]nly if the patent owner makes this showing does the burden shift back to the petitioner to rebut the patent owner’s arguments or to show that the prior art benefits from an earlier filing date.” *Id.* (citing *Dynamic Drinkware*, 800 F.3d at 1379–80; *Tech. Licensing Corp.*, 545 F.3d at 1327–28).

Based on this asserted framework, Petitioner contends that after Petitioner asserted Duan, whose July 1, 2015 issuance date antedates the March 25, 2016 filing date of the ’826 patent, Patent Owner did not shift the burden back to Petitioner because “it failed to demonstrate that the ’636 application provided written description of **all of the challenged claims** and failed to demonstrate that it could actually claim priority to the ’636 application; instead it focused only on the claim term ‘mode determination circuit’ in its preliminary response.” *Id.* at 7 (citing Prelim. Resp. at 9–14; *Aquestive Therapeutics, Inc., v. Neurelis, Inc.*, IPR2019-00451, Paper 14 at 5–6 (PTAB Sept. 27, 2019) (Rehearing Decision)). For the reasons below, we agree.

When determining whether to institute a requested review, our inquiry seeks to ascertain whether Petitioner has demonstrated a reasonable

¹ As explained in the Decision, *Goeddel* is interference case that involves a different requirement of proof than an IPR. Dec. on Inst. 6.

likelihood of success on the challenges set forth in the Petition. 35 U.S.C. § 314(a); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

Petitioner relies on *Core Survival Inc. v. S&S Precision, LLC*, PGR2015-00022, Paper 8 at 9 (Feb. 19, 2016) and *L’Oréal USA, Inc. v. Liqwd, Inc.*, PGR2018-00025, Paper 78 at 13–14 (July 30, 2019) for the proposition that a petitioner has no initial burden to contest entitlement to a provisional filing date. Reh’g Req. 9–10. Those cases are not precedential. Additionally, those cases address a situation in which the petitioner has not raised the priority issue at all in its petition. *Core Survival Inc.*, Paper 8, 9 (“Patent Owner argues that the Petition fails to meet ‘its initial burden of demonstrating that the ’292 patent is not entitled to the November 23, 2009 or November 21, 2008 priority date.’”); *L’Oréal USA, Inc.*, Paper 78, 11 (“Petitioner did not, in this Petition, affirmatively challenge the priority date of the ’954 patent’s claims”). We determine that if such a burden exists, Petitioner has met that burden by contending that the challenged patent is not entitled to any priority date earlier than its filing date. Pet. 11–13 (“the ’826 patent is not entitled to any priority date prior to March 25, 2016.”).² Specifically, Petitioner asserted that none of the potential priority applications listed on the face of the ’826 patent “disclose all of the limitations of claim 1 (and challenged claims 7 and 12-18 depend from claim 1) including, for example, ‘mode determination circuit.’” *Id.* at 12. Thus, the issue presented here is not one in which Petitioner has failed to address priority but rather once priority is raised by Petitioner, can the Board

² We do not decide here whether Petitioner has an initial burden to challenge priority.

limit the case to the issues raised in the Petition. Nevertheless, those cases exemplify the tension between requiring a party to raise an issue versus placing a burden on a party to prove an issue.

In the Decision to Institute we acknowledged that a Patent Owner “is not presumed to be entitled to the earlier filing dates of ancestral applications which do not share the same disclosure.” Dec. on Inst. 8. However, we required, as other panels have required, that:

Petitioner, however, must first raise the issue of whether Patent Owner is entitled to an effective filing date by “identifying, specifically, the features, claims, and ancestral applications allegedly lacking written description support for the claims based on the identified features.” *Lupin*, IPR2015–01775, Paper 15 at 11 (citing *Focal Therapeutics*, IPR2014–00116, Paper 8 at 10). Once the initial production burden is satisfied by a petitioner, the patent owner must “make a sufficient showing of entitlement to earlier filing date(s), *in a manner that is commensurate in scope with the specific points and contentions raised by the petitioner.*” *Id.* (emphasis added).

Id. No Federal Circuit case is cited in our Decision to support this proposition.

Here, Petitioner has presented a specific feature and ancestral application as required by the *Lupin* case. We shifted the burden of production to Patent Owner as required by and explicitly defined in *Dynamic Drinkware*. “[T]he burden of production, or the burden of going forward with evidence, is a shifting burden, ‘the allocation of which depends on where in the process of trial the issue arises.’ The burden of production may entail ‘producing additional evidence and presenting persuasive argument based on new evidence or evidence already of record.’” *Dynamic Drinkware*, 800 F.3d at 1379. We required Patent Owner to produce

additional evidence and argument regarding the one limitation Petitioner alleged was missing from the ancestral applications. Dec. on Inst. 9 (“We determine Patent Owner responds sufficiently by providing specific citations and argument that one of the Chinese priority patent applications—the ’636 Chinese Application—provides written description support for the limitation of ‘mode determination circuit’ recited in claim 1.”); *See Hyatt v. Dudas*, 492 F.3d 1365, 1370–71 (Fed. Cir. 2007) (holding that identifying limitations lacking adequate written description is sufficient to make out a prima facie case under § 112); *Eli Lilly & Co. v. Los Angeles Biomedical Research Inst.*, IPR2014-00693, Paper 14 (PTAB Oct. 23, 2014); *Focal Therapeutics, Inc. v. SenoRx, Inc.*, IPR2014-00116, Paper 8 (PTAB Apr. 22, 2014) (Institution Decision).³

In order to resolve the tension between framing the issue as we did in the Decision and shifting the burdens as Petitioner asserts is required by Federal Circuit precedent, we look to *Tech Licensing*, which is cited by *Dynamic Drinkware. Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316 (Fed. Cir. 2008).

The *Tech Licensing* Court found that, after the party asserting prior art—analogue to the petitioner in an IPR—established a date prior to the filing date of the challenged patent, the patent owner “has the [production]

³ This framework is similar to the prosecution context; for example, the Federal Circuit in *Hyatt v. Dudas*, 492 F.3d 1365 (Fed. Cir. 2007), reversed a district court’s decision in a § 145 action and held that where an examiner’s rejection makes clear what “was missing by way of written description,” the burden properly shifts to an applicant “to cite to the examiner where adequate written description could be found, or to make an amendment to address the deficiency.” *Id.* at 1371.

burden of going forward with evidence . . . that the prior art . . . is not prior art because the asserted claim is entitled to the benefit of a filing date prior to the alleged prior art.” *Tech. Licensing*, 545 F.3d at 1327. This is similar to the situation here. The *Tech Licensing* Court then found that the patent owner was required “to show not only the existence of the earlier application, but why the written description in the earlier application supports the claim . . . that means producing sufficient evidence and argument to show that an *ancestor* to the [challenged patent], with a filing date prior to the [date of the asserted patent], contains a written description that *supports all the limitations* of [the challenged claims].” *Id.*

Considering all the cases discussed above and especially the precedent from the Federal Circuit, we determine that we failed to properly place the burden of production on Patent Owner to present argument and evidence to show that each of the limitations of the challenged claims of the ’826 patent could rely on an earlier priority date than the Duan reference. Further, where the relied on “ancestor(s)” do not have obvious common inventors, we determine the burden to show a prior application relied on by Patent Owner is properly an “ancestor” includes showing common inventorship.

Patent Owner has not provided support to show that each of the limitations of the challenged claims of the ’826 patent are supported by the ’636 Chinese Application. Nevertheless, given that we determine that Patent Owner had a production burden to show inventorship, which is also dispositive of the priority issue at this stage of the proceeding, we discuss inventorship below.

B. Petitioner’s argument that the Board improperly shifted the burden to MaxLite with respect to the ’636 application inventorship issue

Petitioner contends, “[b]ecause the Board improperly shifted the burden to MaxLite to specifically identify all ancestral applications allegedly lacking written description support, it also erroneously failed to consider MaxLite’s argument that Patent Owner is not entitled under 35 U.S.C. § 119(a) to rely on the ’636 application because that application does not share a single common inventor with the ’826 patent. Reply at 2–3; Institution Order at 13.” Reh’g Req. 11.

In support of their argument that § 119(a) does not support the validity of the priority claim in the Petition, Petitioner cites *Boston Scientific Scimed, Inc. v. Medtronic Vascular, Inc.*, 497 F.3d 1293 (Fed. Cir. 2007) (“*Boston Scientific*”). In that case, an organization filed a European patent application for an invention, and then later became affiliated with an American inventor. That inventor tried to claim priority to the European application, but the Federal Circuit ruled that, because the organization had not been acting on the American’s behalf at the time the application was filed, the priority claim was improper under § 119(a). Specifically, the court held that “a foreign application may only form the basis for priority under section 119(a) if that application was filed by either the U.S. applicant himself, *or by someone acting on his behalf at the time the foreign application was filed.*” *Id.* at 1297–98 (emphasis added) (“while the foreign application must obviously be for the same invention and may be filed by someone other than the inventor, section 119(a) also requires that a nexus exist between the inventor and the foreign applicant at the time the foreign application was filed.”).

Boston Scientific cites to another case *Vogel v. Jones*, 486 F.2d 1068 (CCPA 1973). The facts underlying *Vogel* are effectively the converse of those present here but are particularly relevant to the issue in this IPR. In *Vogel*, an inventor Jones had assigned the rights to a U.S. patent application to Imperial Chemical Industries Ltd. (“ICI”). That U.S. patent application claimed priority to a British application. *Vogel* took the position that Jones could not claim the benefit of priority to the British application because of the existence of another prior patent application filed by different inventors, but also assigned to ICI. The Court of Customs and Patent Appeals rejected *Vogel*’s argument. The Court concluded that the right to priority arising under § 119 was “personal” to Jones and that the existence of a foreign application with the same assignee (ICI), but filed on behalf of different inventors, was “irrelevant” to Jones’s right of priority based on his own applications. *Vogel*, 486 F.2d at 1072. In *Boston Scientific*, the Court of Appeals for the Federal Circuit held that *Vogel* remained “binding” precedent. *Boston Scientific Scimed, Inc.*, 497 F.3d at 1297.

We note that the ’636 Chinese Application and the ’826 patent, although having the same assignee, appear to share no common inventors. Reply at 2–3. Petitioner is correct that *Boston Scientific* (which quotes *Vogel*) is particularly relevant, for the present situation. *See id.* at 2–3. Based on the holdings of *Boston Scientific* and *Vogel*, the ’636 Chinese Application, though owned by the same assignee as the ’826 patent, appears to share no common inventors with the ’826 patent. There is no evidence to indicate that ’636 Chinese Application was filed on behalf of the ’826 patent’s inventors. Thus, we determine that, at this preliminary stage, the ’826 patent cannot properly claim priority to the ’636 Chinese Application.

To the extent Patent Owner suggests that, because there is a common assignee between the '826 patent and '636 Chinese Application, there is a “nexus” between the respective inventors or that the '636 Chinese Application was filed on behalf of the inventor of the '826 patent, even though there is no common inventorship, that view is not well supported. Patent Owner has not presented explicit argument or evidence regarding such a nexus. On the record before us, we are not persuaded by Patent Owner’s argument that the '826 patent derives priority from the '636 Chinese Application. Accordingly, we conclude that, on this record, *Vogel* dictates that the '826 patent is not entitled to Patent Owner’s asserted priority claim. That conclusion establishes, at this stage of the proceeding, that Duan is prior art to the '826 patent.

Patent Owner suggests “[g]iven that the U.S. and China have different requirements as to naming inventors, and the '636 [Chinese] Application and '826 patent have overlapping disclosure but different claims, the analysis cannot end at the named inventors.” Sur-Reply 5. Nevertheless, Patent Owner does not explain sufficiently or point to sufficient evidence in the record that the '636 Chinese Application was filed on behalf of the named inventors of the '826 patent, under the *Boston Scientific* test.

Thus, we grant Petitioner’s rehearing and below we include a decision on institution examining the merits of this IPR.

IV. DECISION ON INSTITUTION

A. Background

The standard for institution is set forth in 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R § 42.4(a) (2019) (“The Board institutes the trial on behalf of the Director.”).

For the reasons that follow, we institute *inter partes* review of the challenged claims of the ’826 patent.

B. Related Proceedings

The parties identify the following pending district court proceeding involving the ’826 patent: *Jiaxing Super Lighting Electric Appliance Co., Ltd. v. MaxLite, Inc.*, 2:19-cv-04047 (CD Cal.). Pet. 67; Paper 3, 2.

C. Real Parties-in-Interest

Petitioner identifies MaxLite, Inc. as a real party-in-interest. Petitioner identifies CH Lighting Technology Co., Ltd., as “potentially” a real party-in-interest. Pet. 66. Patent Owner identifies Jiaxing Super Lighting Electric Appliance Co., Ltd., Obert, Inc., and Zhejiang Super Lighting Electric Appliance Co. Ltd. as the real parties-in-interest. Paper 4, 2.

D. The ’826 Patent

The ’826 patent is drawn to “illumination devices, and more particularly to an LED tube lamp and its components including the light sources, electronic components, and end caps.” Ex. 1001, 1:50–54.

According to the '826 patent, the tube lamp of the invention comprises “a first rectifying circuit, a second rectifying circuit, an LED lighting module, a mode determination circuit and a mode switching circuit.” *Id.* at 3:8–11.

E. Illustrative Claim

The '826 patent has eighteen claims of which claim 1 is the sole independent claim. Nine claims (1, 7, and 12–18) are challenged in the Petition. *See supra.* Claim 1 recites:

1. [pre] An LED tube lamp, comprising:
 - [a] a first rectifying circuit, coupled to a first pin and a second pin and configured to rectify an external driving signal transmitted from the first pin and/or the second pin;
 - [b] a second rectifying circuit coupled to a third pin and a fourth pin and configured to rectify the external driving signal with the first rectifying circuit;
 - [c] a filter circuit, coupled to the first rectifying circuit and configured to filter the rectified signal;
 - [d] an LED lighting module, having a driving circuit and an LED module, and coupled to the filter circuit and connected to receive the filtered signal;
 - [e] a mode determination circuit, configured to generate a first determined result signal based on the external driving signal; and
 - [f] a mode switching circuit, coupled to the filter circuit and the driving circuit, configured to determine whether to perform a first driving mode or a second driving mode based on the first determined result signal,
 - [g] wherein the driving circuit is configured to receive a filtered signal from the filtering circuit and drive the LED module to emit light when performing the first driving mode, and the filtered signal bypasses at

least a component of the driving circuit to drive the LED module to emit light when performing the second driving mode.

Ex. 1001, 72:64–73:21 (formatting and bracketed material added).

F. References and Other Evidence

The Petition relies on the following reference: CN 204442771U, filed Feb. 10, 2015, published July 1, 2015 (Ex. 1004, with corresponding English translation Ex. 1003, “Duan”). In addition, Petitioner submits the Declaration of Regan Zane, Ph.D. (Ex. 1002, “Zane Decl.”).

G. Asserted Ground of Unpatentability

Petitioner asserts the challenged claims are unpatentable on the following ground.

Claims Challenged	35 U.S.C. §	Reference/Basis
1, 7, and 12–18	102(a)(1)	Duan

Pet. 2.

V. PRELIMINARY MATTERS

A. Level of Ordinary Skill

Petitioner contends a person of ordinary skill in the art at the time of the invention would have had

a B.S. degree in electrical engineering, or an equivalent field, as well as at least 2-4 years of academic or industry experience in lighting design, including knowledge of LEDs and related technology for driving LEDs. A person of ordinary skill in the art with a higher level of education may have fewer years of academic or industry experience, or vice versa.

Pet. 22 (citing Ex. 1002 ¶ 10). Patent Owner does not contest Petitioner’s articulation of the level of skill in the art. We regard Petitioner’s definition as consistent with the prior art before us. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (prior art itself may reflect an appropriate

level of skill). Thus, for the purpose of this Decision, we adopt Petitioner’s proposal.

B. Claim Construction

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

We see no need to construe any terms for the purposes of this Decision. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy).⁴

⁴ Patent Owner asserts, however, that Petitioner’s failure to construe all but one term and its assertion that it reserves the right to take other positions in other fora “telegraphs its intent to engage in gamesmanship, such as offering an inconsistently narrower construction in the underlying litigation.” Prelim. Resp. 4. We do not discern any “gamesmanship” on behalf of Petitioner nor

C. Duan (Ex. 1004, Ex. 1003 (English Translation))

Petitioner’s challenge relies only on Duan as an anticipating reference. *See* Pet. 2. Duan is a patent titled “Safety Switch Device, General Type Light-Emitting Diode Lamp Tube and Power Supply System Thereof.” Ex. 1003, code (54). Duan discloses a “light-emitting diode (LED) lamp tube having a safety switch mechanism and a power supply system thereof, and in particular . . . a safety switch device, a general type LED light tube and a power supply system thereof.” *Id.* ¶ 1.

D. Challenge to Claims 1, 7, and 12–18 Based on Duan

Petitioner contends claims 1, 7, and 12–18 are anticipated by Duan. Pet. 22–66. Petitioner supports this assertion with testimony from its declarant, Dr. Zane. Ex. 1003 ¶¶ 88–208.

1. Combining Figures 3 and 7–11 with Figure 16

As an initial matter, Patent Owner argues that the Petition relies on embodiments in Figures 3 and 7–11 generally but relies on Figures 16 to show the combination as claimed. Prelim Resp. 15–16. Patent Owner asserts this is “problematic” because Duan’s specification has no description of Figure 16 beyond a general statement that Figure 16 is “a detailed circuit diagram of the general type LED light tube according to the present utility model.” *Id.* at 15 (quoting Ex. 1003 ¶ 24). Patent Owner also asserts “nothing in Duan indicates that Figure 16 can be incorporated with the disclosures of other embodiments—indeed, and as explained in more detail below, the components from other embodiments that Petitioner relies on

do we find that potential positions Petitioner takes in other fora would cause us to use our discretion to deny institution in this case.

often do not match what is depicted in Figure 16.” *Id.* at 16. Thus, Patent Owner asserts Petitioner’s “combin[ing] separate embodiments within [a single reference] to account for the limitations of the claim, [is] an improper basis for anticipation.” Prelim. Resp. 16 (citing *Microsoft v. Biscotti*, 878 F.3d 1052, 1066 (Fed. Cir. 2017)). Although we agree that Duan has no description of Figure 16 beyond the quotation above, we disagree at this stage that Petitioner Figure 16 is improperly combined with Figures 3 and 7–11, as explained below.

For a prior art reference to anticipate a claim, it must disclose all of the limitations of the claim, “arranged or combined in the same way as in the claim.” *Net MoneyIN*, 545 F.3d at 1370. For example, in *Net MoneyIN*, the Federal Circuit held that an “Internet payment system” was not anticipated by a prior art reference that disclosed all the components of the invention, because the reference disclosed two separate payment protocols, each of which contained only a subset of the components claimed in the patent at issue. *Id.* at 1371. “[T]he [prior art] reference must clearly and unequivocally disclose the claimed [invention] or direct those skilled in the art to the [invention] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *Id.* (citation omitted).

Nevertheless, the Federal Circuit has also held that “a reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016); *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d

1376, 1381 (Fed. Cir. 2015). This proposition does not apply when a limitation is missing from the prior art reference. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 851 F.3d 1270, 1274 (Fed. Cir. 2017).

We determine that issues in the present IPR are distinguishable from Federal Circuit cases where a limitation was missing from the reference. *See e.g. Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355 (Fed. Cir. 2016). Here, there is not a missing limitation because any allegedly missing limitations are found in Figure 16 and the declarant's testimony explains that one of ordinary skill in the art would understand the disclosure in Figure 16 despite a lack of description in the specification. *See Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1338 (Fed. Cir. 2020) (finding limitation was not *missing*, stating "here the Board relied on expert evidence, which was corroborated by Hua, in concluding that pipelining was not only in the prior art, but also within the general knowledge of a skilled artisan.")

In explaining the combination of Figures, Petitioner contends that Figure 16 replaces the blocks shown in Figures 7–9 with actual circuit components. Pet. 19. Petitioner also contends that "[b]y combining the information of Figures 8, 9 and 16, the current flow through Figure 16 is readily apparent." *Id.* at 20.

We also credit Petitioner's declarant who testifies that applying Figure 7 to Figure 16 "a POSITA would easily be able to determine the current path." Ex. 1002 ¶ 77. Additionally, we credit Dr. Zane's testimony that "Duan Figure 16 is a full circuit diagram of an LED light tube according to Duan, that includes all three of Duan's improvements over conventional LED light tubes: the safety switch device (item 1), the power supply conversion device, which includes the driving circuit in combination with

the frequency selecting circuit (item 3), and the virtual filament circuit (item 4).” *Id.* at ¶ 60. In fact, the item numbers in Figure 16 correspond to the item numbers in Figure 6–10 and 15 suggesting that the embodiments in those figures correspond to the embodiment in Figure 16. *See generally*, Ex. 1005; *see also* Ex. 1002 at ¶ 60 (explaining the significance of the item numbers). Dr. Zane also testifies that “the full wave rectifier of Figure 16 functions in the same way as the full wave rectifiers in Figures 3, 4, and 5” (Ex. 1002 ¶ 83) and “Figures 3, 4 and 5 all depict different embodiments of the safety switch device of Duan,” (*id.* ¶ 82) which is also shown in Figure 16. Thus, on this preliminary record, Petitioner’s anticipation position does not appear to require combining distinct embodiments to arrive at the claimed subject matter; rather, it is that other description and figures in Duan help explain how the skilled artisan would understand Duan’s Figure 16.

Patent Owner makes several specific arguments which all essentially contend that Figure 16 cannot be combined with other figures in Duan. For example, as to whether Figure 3 can be combined with Figure 16 to meet the claimed “rectifying circuit,” Patent Owner argues, “Petitioner does not explain how a different circuit in Figure 16 can incorporate” the conversion unit of Figure 3. Prelim. Resp. 19. Thus, Patent Owner argues that Petitioner combines Figure 3 with Figure 16’s alleged rectifying circuit but “Petitioner cites to nothing in Duan that says a ‘full-bridge conversion unit’ is a rectifying circuit.” *Id.* Patent Owner argues “Petitioner does not explain how a different circuit in Figure 16 can incorporate [the] disclosure [in the specification regarding Figure 3 given that] Figure 3 is clearly a different embodiment than Figure 16.” *Id.* However, Petitioner contends that the ’826 patent describes the rectifier broadly. Pet. 29. Additionally,

Petitioner's declarant ties Figure 3 to 16 because the item number 1 in each refers to the "safety switch device" suggesting they are relevant to each other, and Petitioner provides testimony from its declarant that "the full wave rectifier of Figure 16 functions in the same way as the full wave rectifier[] in Figure[] 3." Ex. 1002 ¶¶ 61, 83, 101. Thus, we are not persuaded by this specific argument by Patent Owner.

As another example, Patent Owner asserts

Duan does not disclose that Figure 7's "rectifier filtering circuit" is also depicted [in] Figure 16. Duan provides no disclosure with respect to the circuitry of Figure 7's rectifier filtering circuit, much less that it resembles anything in Figure 16. Duan also does not disclose that Figure 7's "rectifier filtering circuit" uses a capacitor for filtering, or provide any indication that the capacitor Petitioner highlighted in Figure 16 is a part of a rectifier filtering circuit. [A]ll Figure 7 depicts is a box labeled "Rectifier filter circuit," and all Duan says about the rectifier filtering circuit is that it "receives the external power supply V_x , and performed rectification and filtering operations on the external power supply V_x to provide a rectified and filtered power supply." Ex. 1003, ¶53.

Prelim. Resp. 22–23. In other words, Patent Owner argues Petitioner has not supported sufficiently the combination of Figure 7 and Figure 16. *Id.*

Nevertheless, Petitioner asserts that "[t]he filter is a capacitor located after the first rectifier, and in combination with the rectifier, provides a rectified and filtered power supply," based on its location in the circuit and the description in Duan. Pet. 31 (citing Ex. 1003 ¶ 53.). Petitioner also provides testimony that the capacitor of Duan is consistent with the disclosure in the '826 patent and explains the location of the capacitor in the circuit as connected to the first rectifying circuit, which is shown in Figure 7. Ex. 1002 ¶¶ 64 ("POSITA would understand that the rectifier filter circuit 32

in Figure 7 corresponds to the full bridge rectifier and capacitor filter circuit of Figure 16”), 109–111. We credit the testimony of Petitioner’s declarant. Thus, we are not persuaded by this specific argument by Patent Owner. *Id.*

As another example, Patent Owner argues “nowhere does Duan disclose that the power loops in Figures 8 and 9 are applicable to Figure 16. . . . Figure 9 does not depict the purported second rectifying circuit in Figure 16, nor does Figure 8—they are therefore different embodiments that cannot be combined in an anticipation challenge.”

Nevertheless, Petitioner illustrates the current path and asserts, supported by testimony from its declarant, that a person of ordinary skill at the time of the invention would “easily” be able to determine the current path during a positive or negative half cycle when transistor switch 362 is closed or open (i.e. the current path is “readily apparent”). Pet. 20, 40–43; Ex. 1002 ¶¶ 71–79. We credit the testimony of Petitioner’s declarant. Ex. 1002 ¶¶ 71–79. Thus, we are not persuaded by this specific argument by Patent Owner.

As explained above, we determine that Petitioner’s contentions and Dr. Zane’s testimony sufficiently show that one of ordinary skill in the art would “at once envisage the claimed arrangement” of the limitations of claim 1 by applying the teaching of Figures 3 and 7–11 and the accompanying description with the circuits shown in Figure 16.

Additionally, we find Patent Owner’s arguments described above, that are not based in specifically refuting the underpinnings of Petitioner’s contentions are conclusory, unpersuasive, and do not cast substantial doubt on those contentions. *C.f. Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d at 1075 (Upholding a board finding that a Petitioner improperly combined

embodiments where “[t]he Board found this contention unpersuasive because [Patent Owner] had introduced evidence that ‘cast substantial doubt’ regarding whether a POSA would have considered the interface connections appropriate for connecting with a set-top box.”). Thus, we are not persuaded by these arguments by Patent Owner.

We determine that Petitioner has explained sufficiently that Figures 3, 7–11 and 16 are compatible embodiments such that they teach the limitations of claim 1 arranged in the same way as the ’826 patent without the need to pick and choose disparate disclosures.

Patent Owner also argues “everything that Petitioner asserts is disclosed in Figure 16 comes from Petitioner rather than any disclosure in Duan.” Prelim. Resp. 16. Thus, according to Patent Owner, “[i]t is not proper for Petitioner to substitute its own words for what Duan actually discloses.” *Id.* at 17. As explained below, we disagree that Petitioner has improperly relied on attorney argument and expert testimony. We discuss this argument, below, in association with each specific claim limitation to which this argument is directed.

2. Analysis

Petitioner’s element-by-element analysis of independent claim 1 in relation to Duan appears at pages 22–49 of the Petition. Petitioner supports its analysis with testimony from Dr. Zane. Ex. 1003 ¶¶ 88–145.

a. Independent claim 1

i. Preamble and Limitation [pre] “An LED tube lamp, comprising”

Petitioner contends that Duan discloses an LED tube lamp, as recited in the preamble of claim 1. Pet. 22–24. Petitioner relies upon Duan’s

disclosure of “light-emitting diode (LED) lamp tube.” *Id.* (citing Ex. 1003 ¶¶ 1, 3, 6, 21, 22, 25, 29, 50; Ex. 1002 ¶¶ 89–91).

We have reviewed the record, and find that Petitioner provides sufficient evidence that the prior art teaches the preamble and limitation [a] of claim 1.⁵ Patent Owner makes no arguments contesting the prior art teachings of these claim limitations. *See generally*, Prelim. Resp.

ii. Limitation [a]

“a first rectifying circuit, coupled to a first pin and a second pin and configured to rectify an external driving signal transmitted from the first pin and/or the second pin”

Petitioner contends that limitation [a] of claim 1 is taught by Duan’s disclosure of rectifying filter circuit 32, the rectifying circuit in Figure 16, CON1, and CON2. Pet. 24–27 (citing Ex. 1003 ¶¶ 25, 29, 53, 62, Figs 7, 16; Ex. 1002 ¶¶ 61, 64, 93–99).

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan teaches limitation 1[a]. Patent Owner makes no other arguments contesting the prior art teachings of this claim limitation. *See generally*, Prelim. Resp.

iii. Limitation [b]

“a second rectifying circuit coupled to a third pin and a fourth pin and configured to rectify the external driving signal with the first rectifying circuit”

Petitioner contends that limitation [b] of claim 1 is taught by Duan’s disclosure of rectifying filter circuit 32, the rectifying circuit in Figure 16,

⁵ We need not determine whether the preamble of claim 1 is limiting because Petitioner has shown Duan discloses the preamble. *See Nidec*, 868 F.3d at 1017.

CON3, and CON4. Pet. 27–31 (citing Ex. 1003 ¶¶ 25, 29, 34, 44, 62, Figs. 3, 11, 16; Ex. 1003 ¶¶ 61, 100–106).

Patent Owner argues “Duan provides no express disclosure with respect to the circuit highlighted by Petitioner, including no express disclosure that it is a rectifying circuit, or that it rectifies current from the external driving signal. Nor does Petitioner argue that Duan inherently discloses such a circuit.” Prelim. Resp. 18. Nevertheless, as explained above, Petitioner combines the description of Figure 3 with the disclosures in Figure 16 supported by its declarant’s testimony. Pet. 27–31. Thus, we are not persuaded by Patent Owner’s argument.

Patent Owner also argues “Petitioner provides no explanation for how the purported ‘second rectifying circuit’ rectifies current from the CON3 and CON4 endpoints in view of the intervening elements” and “Petitioner fails to establish that Duan discloses that the purported ‘second rectifying circuit’ rectifies a current *with* the purported first rectifying circuit.” Prelim. Resp. 20–21. We disagree. As to the intervening elements, Petitioner asserts “although some intervening elements are depicted between the pins and the second rectifying circuit, these elements are still considered coupled to each other. Therefore, CON3 and CON4 are ‘coupled’ to the second rectifying circuit of Duan.” Pet. 30–31. “Coupled to” is a term that is defined in the specification as “can be directly connected or coupled to, or on the other element or intervening elements may be present.” Ex. 1001, 8:55–9:2. Patent Owner does not explain sufficiently why this definition should not apply. For the purpose of this Decision, we adopt this definition. Thus, we are not persuaded by Patent Owner’s argument which is not commensurate with the proper scope of the claims.

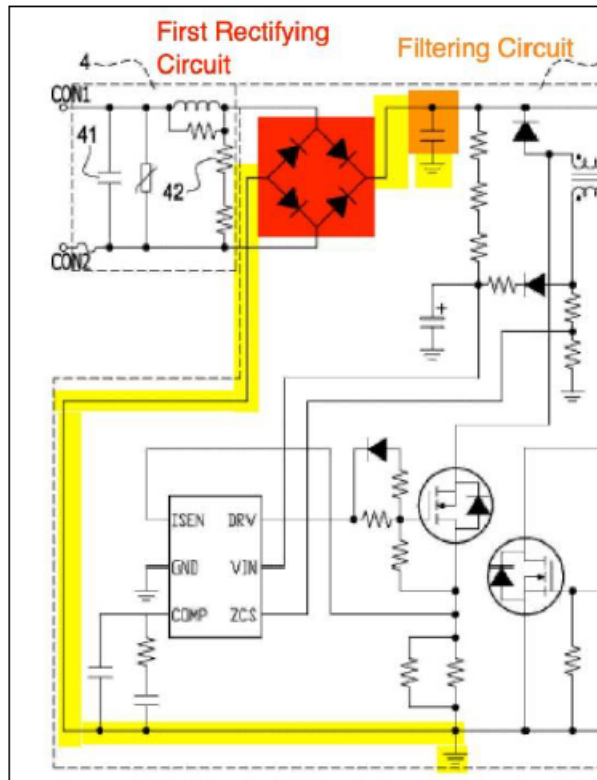
As to the alleged lack of explanation of how the circuit rectifies, Petitioner explains how the circuit works at a sufficient level of detail and the current flow through the first and second rectifying circuit. Pet. 19–21. By contrast, Patent Owner’s provides conclusory attorney argument without a technical explanation of why the intervening elements or anything else would prevent the circuit from working the Petitioner asserts it does. The Federal Circuit informs us that in our decisions “the amount of explanation needed varies from case to case, depending on the complexity of the matter and the issues raised in the record.” *Rovalma, S.A. v. Bohler-Edelstahl GmbH & Co. KG*, 856 F.3d 1019, 1025 (Fed. Cir. 2017) (citing *Personal Web Technologies*, 848 F.3d at 991–94; *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364–67 (Fed. Cir. 2015); *In re Lee*, 277 F.3d 1338, 1342–46 (Fed. Cir. 2002)). Thus, we are not persuaded by Patent Owner’s argument.

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan teaches limitation 1[b].

iv. Limitation [c]

“a filter circuit, coupled to the first rectifying circuit and configured to filter the rectified signal”

Petitioner contends that Duan discloses limitation 1[c] by its disclosure of rectifier filtering circuit 32 and a capacitor in Figure 16. Pet. 31–33 (citing Ex. 1003 ¶ 53, Figs. 3, 16; Ex. 1002 ¶¶ 107–112). Petitioner’s annotated portion of Figure 16, reproduced below, illustrates the location of the capacitor.



Petitioner’s annotated portion of Figure 16, reproduced above, illustrates the location of the alleged filtering capacitor (orange) and the circuit path (yellow) to the alleged first rectifying circuit (red).

Patent Owner argues Petitioner does not explain how a capacitor in Figure 16 is the “filtering circuit” and how it is to be combined with Figure 7. Prelim. Resp. 21–22. Patent Owner also offers attorney argument that “description of Figure 7 is hardly an express disclosure of a filter that filters a *rectified signal*. At best, it indicates the *power supply* is filtered.” *Id.* at 22. Nevertheless, as shown above, Petitioner shows the signal path from the rectifier to the filter—this showing is supported by Petitioner’s declarant. Ex. 1002 ¶¶ 107–112. Additionally, Patent Owner does not explain sufficiently why Petitioner’s assertion is technically incorrect; rather,

Patent Owner suggests without explanation its own alternate reading of the figure. Thus, we are not persuaded by Patent Owner's argument.

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan teaches limitation 1[c].

v. Limitation 1[d]

“an LED lighting module, having a driving circuit and an LED module, and coupled to the filter circuit and connected to receive the filtered signal”

Petitioner asserts that Duan discloses limitation 1[d] by Duan's disclosure of DC to DC conversion circuit 34, and LED light strip 2. Pet. 33–36 (citing Ex. 1003 ¶ 53, Fig. 16; Ex. 1003 ¶¶ 113–121). Specifically, Duan recites the DC to DC conversion circuit 34 “is connected to the rectifier filtering circuit 32 and converts this rectified and filtered power supply to output a driving power supply and then to drive the LED light strip 2.” *Id.* at 36 (quoting Ex. 1003 ¶ 53).

We have reviewed the record and find that Petitioner provides sufficient evidence that Duan discloses limitation 1[d]. Patent Owner makes no arguments contesting the prior art teachings of this claim limitation. *See generally*, Prelim. Resp.

vi. Limitation 1[e]

“a mode determination circuit, configured to generate a first determined result signal based on the external driving signal”

Petitioner contends that Duan teaches limitation [e] by its disclosure of “frequency selecting circuit 36,” which performs an “on operation” when the external power supply “is a high-frequency power supply” and an “off operation” when the external power supply “is a low-frequency power

supply.” Pet. 36–38 (citing Ex. 1003 ¶¶ 58, 61, Figs. 10, 16; Ex. 1002 ¶¶ 122–125).

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan limitation 1[e]. Patent Owner makes no arguments contesting the prior art teachings of this claim limitation. *See generally*, Prelim. Resp.

vii. Limitation 1[f]

“a mode switching circuit, coupled to the filter circuit and the driving circuit, configured to determine whether to perform a first driving mode or a second driving mode based on the first determined result signal”

Petitioner contends that Duan discloses limitation 1[f] by its disclosure of transistor switch 362. Pet. 38–43 (citing Ex. 1005 ¶¶ 61, Fig. 16; Ex. 1002 ¶¶ 126–134). Specifically, based on the determined result signal described above, “when the external power supply V_x is the high-frequency power supply, the transistor switch 362 is turned on via the filter resistor R_f and the filter capacitor R_f ; conversely, when the external power supply V_x is the low-frequency power supply, the transistor switch 362 is turned off.” Pet. 40–41 (quoting Ex. 1003 ¶ 61).

As to the claimed mode switching circuit, Patent Owner argues that “[m]uch of Petitioner’s explanation for why [the alleged switching] component in Figure 16 is a ‘mode switching circuit’ is conclusory, lacks any explanation, and is not anchored to any disclosure in Duan” and “Petitioner provides its own unexplained description for Figure 16 which cannot be found anywhere in Duan.” Prelim. Resp. 26. We disagree. Petitioner provides a detailed explanation of the current paths and the operation of the switching component of Figure 16 with reference to the

disclosures regarding Figures 9 and 10. Pet. 15–21, Ex. 1003 ¶¶ 71–79, 126–137. As explained above, for purposes of this Decision, we determine that Petitioner has not improperly combined Figures 9, 10, and 16 as Patent Owner suggests. Thus, we are not persuaded by Patent Owner’s argument.

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan discloses limitation 1[f].

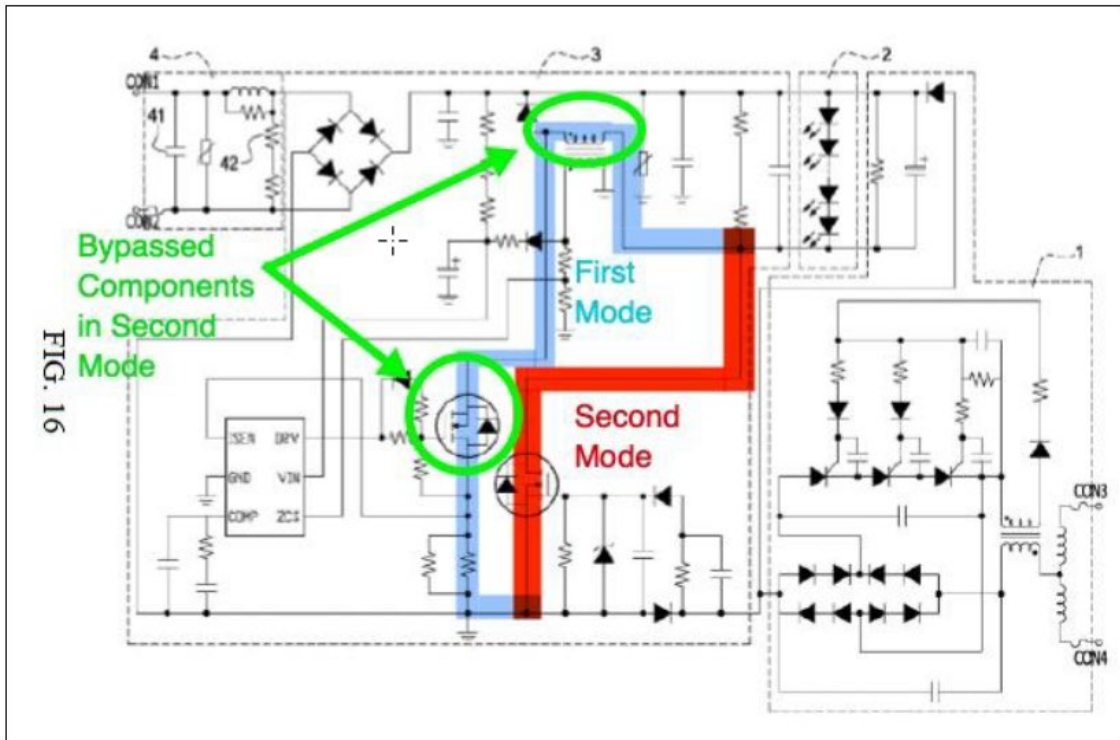
viii. Limitation 1[g]

“wherein the driving circuit is configured to receive a filtered signal from the filtering circuit and drive the LED module to emit light when performing the first driving mode, and the filtered signal bypasses at least a component of the driving circuit to drive the LED module to emit light when performing the second driving mode”

Petitioner contends that Duan teaches limitation 1[g] by its disclosure of a first driving mode and second driving mode as described above.

Pet. 43–49.

Petitioner provides an annotated version of Figure 16, reproduced below, to explain which circuits are bypassed. Pet. 48.



Petitioner provides an annotated version of Figure 16, reproduced above, which circuits are bypassed (in green) in the alleged First Mode of operating Duan (in blue) as opposed to the Second Mode of operating (in red). *Id.*

Patent Owner asserts that Petitioner fails to show that Duan meets the limitation of “bypasses at least a component of the driving circuit to drive the LED module.” Prelim. Resp. 30–32. As explained above, Patent Owner argues that Petitioner improperly combined Figures 8 and 9 with Figure 16. As we indicated above, we are not persuaded by that argument. Patent Owner also argues

[n]othing in the corresponding descriptions for Figures 8 and 9 indicate that the current path highlighted by Petitioner in Figure 8 bypasses any component of the DC to DC conversion circuit 34, *i.e.* the alleged driving circuit. Duan simply states that, with respect to Figure 8, the “power supply loop Lp3 sequentially consist[s] of the rectifier filter circuit 32, the DC to DC

conversion circuit 34, the LED light strip 2” Similarly, with respect to Figure 9, Duan states that the “power supply loop Lp5 sequentially consist[s] of the rectifier filter circuit 32, the DC to DC conversion circuit 34, the LED light strip 2” The descriptions are identical, and there is no disclosure of any component of the alleged driving circuit being bypassed.

Prelim. Resp. 30. In other words, Patent Owner argues Figures 8 and 9 do not disclose which component of the alleged driving circuit is being bypassed. Patent Owner misses the point. Patent Owner’s argument focuses on Figures 8 and 9 without discussing the full circuit shown by the disclosure of each of the Figures and how Figure 16, by *its* configuration and disclosure, indicate that components are bypassed. Thus, we are not persuaded by this argument.

Patent Owner also argues that the “current bypasses the driving circuit *after going through the LEDs.*” Prelim. Resp. 31. Patent Owner then asserts “Petitioner provides no explanation for how the purported bypassing of the highlighted components are in any way connected to the driving of the LED module,” because the current bypass happens after going through the LEDs. *Id.* at 32. Patent Owner appears to oversimplify how current propagates through a circuit by using a common sense argument without any technical explanation or sufficient evidence of why what Petitioner contends is incorrect. In contrast, Petitioner, supported by its declarant’s testimony, asserts “the power supply loop includes the switch and the inductor of the DC to DC conversion unit which is used to drive the LEDs. Ex. 1003 ¶ 0056; Ex. 1002 ¶ 140.” Pet. 45. Patent Owner provides only attorney argument without an explanation of why Petitioner’s assertion that the circuit drives the LEDs is wrong. At this stage, Petitioner’s unrebutted expert testimony outweighs Patent Owner’s attorney argument.

Scientific Corp. v. Innovasystems, Inc., 536 F.3d 1256, 1267 (Fed. Cir. 2008) (holding that expert testimony was required to establish invalidity on grounds of anticipation where the subject matter is sufficiently complex to fall beyond the grasp of an ordinary layperson); *c.f. also Wyers v. Master Lock Co.*, 616 F.3d 1231, 1240 n. 5 (Fed. Cir. 2010) (“‘expert testimony regarding matters beyond the comprehension of laypersons is sometimes essential,’ particularly in cases involving complex technology.”).

We have reviewed the record, and find that Petitioner provides sufficient evidence that Duan teaches limitation 1[g].

ix. Conclusion

On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that claim 1 is anticipated by Duan.

b. Claims 7, and 12–18

Claims 7, and 12–18 each depend directly or indirectly from claim 1. Petitioner asserts that Duan discloses the limitations of dependent claims 7, and 12–18. Pet. 49–66. We have reviewed the record and find that Petitioner provides sufficient evidence that Duan discloses the limitations of these dependent claims. Patent Owner makes no arguments contesting the prior art teachings of the limitations of these claims. *See generally*, Prelim. Resp.

On this record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that claims 7, and 12–18 is anticipated by Duan.

VI. CONCLUSION

Based on the arguments and evidence presented in the Petition, the Preliminary Response, and accompanying exhibits, we have determined there is a reasonable likelihood Petitioner would prevail with respect to at least one claim challenged in the Petition. We conclude that the threshold has been met for instituting *inter partes* review, and we institute on all challenged claims and the sole ground. See *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354 (2018); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018). We have not made a final determination on claim construction or as to the patentability of any of the challenged claims. Our final determination will be based on the record as fully developed during trial.

VII. ORDER

Accordingly, it is:

ORDERED that Petitioner's Request for Rehearing is granted;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to challenged claims 1, 7, and 12–18 of the '826 patent for the sole ground raised in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this Order.

IPR2020-00208
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