

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REFLEX USA LLC,
Petitioner,

v.

LONGYEAR TM, INC. and GLOBALTECH CORPORATION PTY LTD.,
Patent Owners.

IPR2023-00642
U.S. Patent 10,830,013

PATENT OWNERS' PRELIMINARY RESPONSE

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CERTIFICATE OF SERVICE 42

PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
Ex.2001	File History for U.S. Patent No. 10,047,581
Ex.2002	U.S. Patent No. 10,047,581 (the “Grandparent Patent”)
Ex.2003	Table comparing independent claim 1 of the '013 Patent, the Parent Patent, the Grandparent Patent, and the Child Patent

I. INTRODUCTION

The Petition should be denied because it presents the precise scenario with which Congress was concerned when it included § 325(d) in the AIA. It asks the Board to relitigate an issue the Office has already addressed—whether WO 2008/113127 (“Beach-127”) discloses the “window” limitation of the ’013 Patent. On *three separate occasions* the Office considered this question, and on each occasion concluded that, no, Beach-127 does not teach the “window” limitation of the ’013 Patent. Petitioner’s only justification for asking the Board to take a fourth look at the issue is that the Office later rejected a different and broader “window” limitation over Beach-127. Moreover, Petitioner’s “new” evidence, U.S. Patent Pub. No. 2008/0001775 (“Wiese”), is cumulative to Beach-127 because Petitioner presents it as an *alternative* to Beach-127—urging the Board to find that both Beach-127 and Wiese teach a “window” in the same way under its claim construction. The Board should invoke the “procedural safeguards” of § 325(d) to screen out Petitioner’s “harassing and unfounded” petition. *See Synopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1325-27 (Fed. Cir. 2016) (quoting H.R. REP. NO. 112-98, pt. 1, at 48 (2011)) (“[T]he changes made by [the AIA] are not to be used as tools for harassment or a means to prevent market entry through repeated litigation and administrative attacks on the validity of a patent.”).

Even if the Board were to consider the Petition on the merits, Petitioner does not meet its burden to show the challenged claims are obvious over Beach-127, alone or in combination with Wiese. Petitioner fails to even address how Beach-127 discloses a window in “*optical*” communication with a sealed interior cavity—nor could it. Beach-127 illustrates an opaque exterior housing. Petitioner’s proposed modification that replaces Beach-127’s opaque exterior housing with Wiese’s window also fails to meet the “window” limitation because it would, at most, provide for optical communication with an underlying LED array, not the claimed “*sealed interior cavity*,” as required.

Longyear TM, Inc. and Globaltech Corporation Pty Ltd. (collectively, “Patent Owner”) respectfully request that the Board deny institution.

II. THE BOARD SHOULD DENY THE PETITION UNDER § 325(D)

The Board should deny institution under § 325(d) because the Petition is based upon the “same or substantially the same art previously [] presented to the Office” and fails to demonstrate “that the Office erred in a manner material to the patentability of the challenged claims.” *Advanced Bionics, LLC v. Med-El Electromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (Feb. 3, 2020) (precedential) (“*Advanced Bionics*”); *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”).

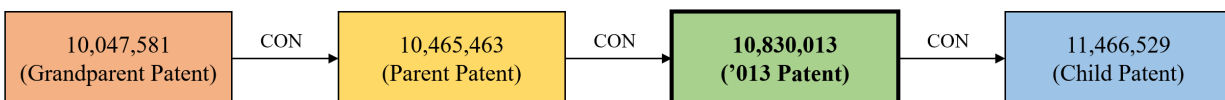
Under the first part of the *Advanced Bionics* framework, the Board has construed “previously presented” to refer to art and arguments presented to the Office prior to the filing of the petition at issue. *Ironsource Ltd. v. Digital Turbine Inc.*, PGR2021-00096, Paper 14 at 52 (Jan. 6, 2022). Under the second part of the framework, “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Advanced Bionics* at 9. If Petitioner fails to meet its burden to show a material error under this elevated standard, “the Director generally will exercise discretion not to institute *inter partes* review.” *Id.* at 8-9. “At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.* at 9.

Here, the Board should defer to the three previous Office evaluations of Beach-127 that found it does not teach the “window” limitation of the ’013 Patent. The Petition does not address these findings by the Office, much less show that the Office erred. Moreover, the “new” evidence in the Petition is cumulative and does not warrant expending Office resources relitigating the validity of the ’013 Patent.

A. History of the ’013 Patent Family

There are four issued patents in the ’013 Patent Family: U.S. Patent No. 10,047,581 (the “Grandparent Patent”); U.S. Patent No. 10,465,463 (the “Parent Patent”), a continuation of the Grandparent Patent; the ’013 Patent, a continuation

of the Parent Patent; and U.S. Patent No. 11,466,529 (the “Child Patent”), a continuation of the '013 Patent, as illustrated below.



The claims filed with the Grandparent Patent consisted of one independent claim and 31 dependent claims. Ex.2001, 848-852. Independent claim 1 recited a “core barrel head assembly” comprising several elements but not a “window.” *Id.* at 848. Dependent claim 9 instead recited a window limitation:

9. The core barrel head assembly of Claim 1, further comprising a plurality of windows defined in the elongate tube body that extend from the exterior surface of the elongate tube body into optical communication with the sealed interior cavity proximate a closed proximal end of the sealed interior cavity.

Id. at 849. During prosecution, the Examiner rejected independent claim 1 over Beach-127 in view of U.S. 4,955,438 to Juergens et al. (“Juergens”). Ex.2001, 637-640. As part of the rejection, the Examiner indicated that several dependent claims, including claim 9, would be “allowable” if written in independent form. *Id.* at 640. Patent Owner amended claim 1 to include the allowable window limitation of claim 9, and the claims were allowed. *Id.* at 630, 624, 268, 14-20.

When the application leading to the Parent Patent was subsequently filed, it similarly included one independent claim reciting a “core barrel head assembly” comprising several elements but not a “window.” Ex.1011, 204-207. The Examiner again rejected independent claim 1 over Beach-127 in view of Juergens. *Id.* at 54-56. In response, Patent Owner amended claim 1 to include the same “window” limitation now recited in claim 1 of the '013 Patent: “*a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity.*” *Id.* at 31. In the remarks accompanying the amendment, Patent Owner explained that “[b]oth Beach and Juergens are silent regarding the presence of such a window, and [a] person of ordinary skill in the art would not have been motivated to modify the cited references to provide such a window.” *Id.* at 36.¹ The Examiner subsequently allowed the claims over Beach-127 without comment. *Id.* at 9-13.

Shortly thereafter, Patent Owner filed the application leading to the '013 Patent. Ex.1002, 251-299. The as-filed claims included one independent claim reciting a “core barrel head assembly” with the same exact “window” limitation as

¹ Patent Owner also filed a terminal disclaimer to overcome a double patenting rejection based on the claims of the Grandparent Patent. *Id.* at 57-60, 43-45.

recited in the allowed claims of the Parent Patent. *Id.* at 283. Although Beach-127 was presented in an Information Disclosure Statement (IDS), the Examiner rejected the pending claims solely on the ground of double patenting over the claims of the Parent Patent. *Id.* at 95, 72-74. In response, Patent Owner filed a terminal disclaimer, and the Examiner issued a Notice of Allowance. *Id.* at 38, 45-47, 13-17.

After the allowance, Patent Owner filed the application leading to the Child Patent with two claims also reciting a “core barrel head assembly.” Ex.1013, 382-83. Independent claim 1 similarly recited a “window,” but one of *different and broader scope* than the “window” recited in claim 1 of the '013 patent, as illustrated below. *Id.* at 382.

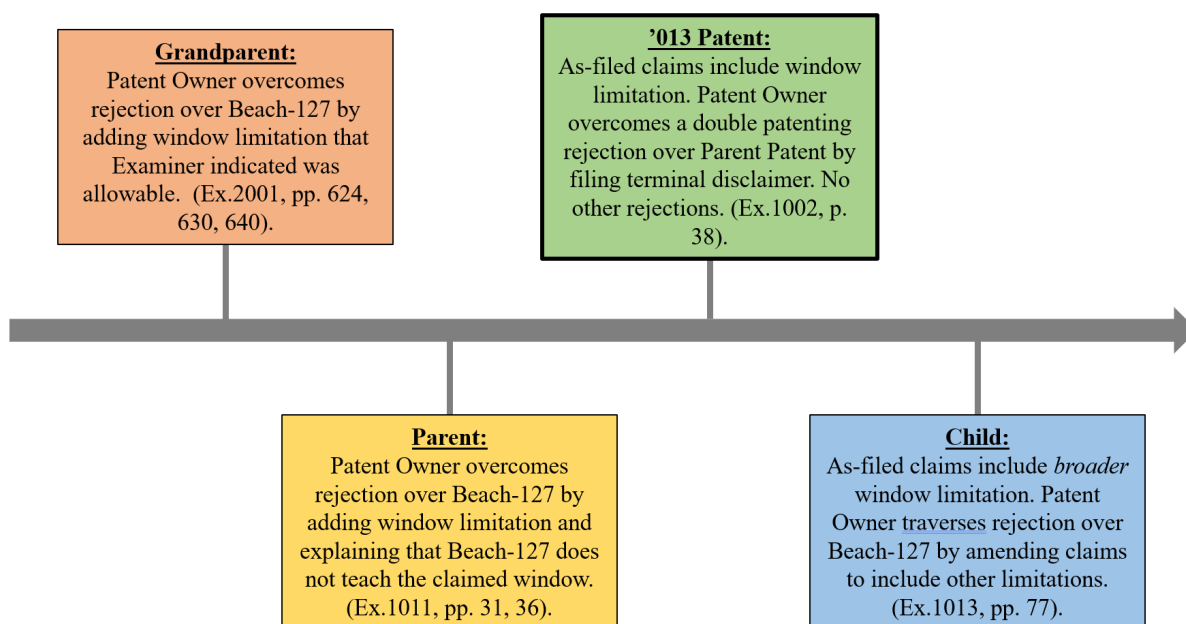
'013 Patent (issued claim 1)	Child Patent (as-filed claim 1)
a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity;	a window that extends from the exterior surface into optical communication with the sealed interior cavity;

The Examiner rejected the pending claims that included the broader “window” limitation over Beach-127. Ex.1013, 191-193.² To “facilitate prosecution,” Patent Owner traversed the rejection over Beach and amended independent claim 1 to include additional limitations. *Id.* at 77, 63. The Examiner subsequently allowed the claims. *Id.* at 23-29.

In sum, throughout the prosecution history of the '013 Patent family, the Examiner consistently found that Beach-127 does not teach the “window” limitation recited in the '013 Patent (or the slightly narrower version recited in the Grandparent Patent). In the prosecutions of both the Grandparent Patent and the Parent Patent, Patent Owner overcame rejections over Beach-127 by amending to include the “window” limitation. In the prosecution of the '013 Patent, Patent Owner avoided a rejection over Beach-127 by including the “window” limitation in the as-filed claims. The only instance in which the Examiner found Beach-127 to recite a “window” was during the prosecution of the Child Patent, which recites

² It appears that for the claimed “*window*,” the Examiner identified a portion of Beach-127’s assembly in Fig. 2 that he did not consider to be “*proximate the closed proximal end of the sealed interior cavity*,” as additionally required by the '013 Patent, Parent Patent, and Grandparent Patent. *See* Ex.1013, 192.

a window of *broader* scope. The below timeline of the '013 Patent family illustrates how Patent Owner repeatedly overcame Beach-127 based on the “window” limitation:



B. *Advanced Bionics* Part One: The Petition asserts the same art and substantially the same art that was already overcome during prosecution.

1. Beach-127

There is no dispute that the “Petition relies primarily on the Beach ’127 reference.” Petition, 78. There is also no dispute that Beach-127 “was before the Patent Office during prosecution of the ’013 Patent, as it was cited in an IDS.” *Id.*; Ex.1002, 95. The Petition further acknowledges that Beach-127 was substantively considered and used to reject the pending claims of the Parent Patent and Child Patent:

The prosecution histories of other patents in '013 Patent's family, however, show that both the Office and the Patent Owner recognized that Beach-127 discloses nearly all of the limitations of the challenged claims here, including all limitations of independent Claim 1. The Examiner examining the parent '463 Patent and the child '529 Patent cited and relied upon Beach-127 during the respective prosecutions of those patents, and asserted that it disclosed many claim limitations that are identical to those recited in the claims of the '013 Patent.

Petition, 78; Ex.1011, 54-56; Ex.1013, 191-193. Beach-127 was similarly used to reject the pending claims of the Grandparent Patent. Ex.2001, 637-640.

Accordingly, the intrinsic record reflects that the Examiner evaluating the '013 Patent family had a thorough understanding of Beach-127's disclosure and its relationship to the pending claims of the various family members.

The prosecution histories of the '013 Patent family members are pertinent to the § 325(d) analysis because they include claims similar to the claims of the '013 Patent. As described above, they all recite a "core barrel head assembly" with similar components including an "*exterior surface*," a "*sealed interior cavity*," and a "*window*" or "*plurality of windows*" (in the case of the Grandparent Patent). *See* Ex.2003 (table comparing independent claim 1 of the '013 Patent, the Parent Patent, the Grandparent Patent, and the Child Patent). The Examiner found the pending claims of the family members to be sufficiently similar so as to (i) issue a

double patenting rejection against the pending claims of the '013 Patent in view of the Parent Patent (Ex.1002, 72-74), and (ii) issue a double patenting rejection against the pending claims of the Parent Patent in view of the Grandparent Patent (Ex.1011, 57-60). Thus, the prosecution histories of both the Parent Patent and the Grandparent Patent are relevant to the Examiner's consideration of the '013 Patent. *See II-VII, Inc. v. Alexander Soto and Walter Soto*, IPR2021-01361, Paper 10 at 21 (Feb. 15, 2022) ("The Examiner found the claims of the [patent-at-issue] and the [grandparent patent] to be parallel when he issued an obviousness-type double patenting rejection later overcome by terminal disclaimer.").

In this case, the prosecution histories of the ancestor patents are especially pertinent because Petitioner now asserts that Beach-127 teaches the "window" limitation that was the *reason for allowance* in the Parent Patent and Grandparent patent. That is, the Petition explicitly contradicts the consistent finding by the Examiner that Beach-127 does *not teach* the "window" limitation. The Examiner allowed the Grandparent Patent over Beach-127 because Patent Owner amended independent claim 1 to include a slightly narrower version of the window limitation, which the Examiner had indicated was "allowable" over Beach-127. Ex.2001, 640, 630, 624, 268, 14-20. The Examiner allowed the Parent Patent over Beach-127 because Patent Owner amended independent claim 1 to include the *exact* window limitation recited in claim 1 of the '013 Patent. Ex.1011, 54-56, 36,

31, 9-13. The Examiner allowed the '013 Patent over Beach-127 because the as-filed claims already recited the allowable window limitation. Ex.1002, 95, 72-74 (issuing only a double patenting rejection over Parent Patent), 38, 45-47, 13-17. Accordingly, three times the Examiner considered whether Beach-127 taught the window limitation and three times he found that it did not.

Petitioner does not address this highly pertinent fact in the Petition. Rather, it obscures the record by alleging Patent Owner “secured allowance” of the Parent Patent “by amending the then-pending claims to recite additional limitations **not included** in challenged Claim 1 of the '013 Patent.”³ Petition, 81 (“Instead, the Patent Owner secured allowance of the respective '463 and '529 Patents over Beach-127 by amending the then-pending claims to recite additional limitations not included in challenged Claim 1 of the '013 Patent.”). This is objectively not true. Patent Owner secured allowance of the Parent Patent by amending the then-pending claims to recite the exact “window” limitation that is now recited in the '013 Patent—and arguing in the accompanying remarks that “Beach ... [is] silent regarding the presence of such a window.” Ex.1011, 36. Patent Owner’s

³ All emphasis is added unless otherwise noted.

amendment to pending claim 1 of the Parent Patent is reproduced below, along with claim 1 of the '013 Patent for comparison.

Listing of Claims:

1. (Currently Amended) A core barrel head assembly[[,]] having an exterior surface and comprising:

an elongate tube body defining a first interior cavity, [[and]]

a selectively sealed interior cavity spaced distally from the first interior cavity and having a closed proximal end; wherein the elongate tube body has;

a threaded proximal end portion for coupling to a wire line retrieval portion of a head assembly,

a base portion, wherein the first interior cavity extends distally from the threaded proximal end portion to [[a]] the base portion of the elongate tube body, and wherein the elongate tube body further defines,

a port positioned proximate the base portion and extending from the exterior surface of the elongate tube body into fluid communication with the first interior cavity;

a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity.

at least one electronic instrument that is configured to obtain orientation data mounted therein the sealed interior cavity, wherein the at least one electronic instrument comprises at least one digital and/or electro-mechanical sensor[[s]] in a core orientation data recording tool that can be configured to determine a core orientation of a sample core just prior to or after [[the]] a core break;

a power source in operable communication with the at least one electronic instrument, wherein the power source is mounted therein the interior cavity; and

communication means to receive and/or a transmitter configured to transmit core orientation data,

wherein the sealed interior cavity is sized and shaped to hermetically enclose the at least one electronic instrument and the power source.

What is claimed is:

1. A core barrel head assembly having an exterior surface and comprising:

a first interior cavity;

a selectively sealed interior cavity spaced distally from the first interior cavity and having a closed proximal end;

a threaded proximal end portion for coupling to a wire line retrieval portion of a head assembly;

a base portion, wherein the first interior cavity extends distally from the threaded proximal end portion to the base portion;

a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity;

at least one electronic instrument that is configured to obtain core orientation data, wherein the at least one electronic instrument comprises at least one digital and/or electro-mechanical sensor in a core orientation data recording tool; and

a transmitter configured to transmit core orientation data, wherein the sealed interior cavity is sized and shaped to enclose the at least one electronic instrument.

Ex.1011, 31 (amendment to pending claim 1 of Parent Patent); Ex.1001, claim 1.

The Petition includes similar inaccurate statements throughout. *See, e.g.,* Petition, 1-2 (“Indeed, the file histories of patents in the same family as the '013 Patent show a mutual understanding between both the Patent Office and the Patent Owner that Beach-127 satisfies all limitations of Claim 1.”), 9 (“[T]he intrinsic record demonstrates that Beach-127 anticipates Claim 1 of the '013 Patent.”), 9 (“Thus, the Patent Owner acquiesced to the argument that Beach-127 discloses all limitations of Claim 1, as well as dependent claims 2-3 and 19-

22, of the '013 Patent.”). The Petition’s attempt to downplay the pertinence of the Examiner’s evaluation of the '013 Patent family is reason enough to discretionarily deny under § 325(d) or § 314(a).

With respect to the non-window limitations, the Petition applies Beach-127 to the claims of the '013 Patent in the same way the Examiner did during prosecution of the Parent Patent and the Grandparent Patent. *Compare* Petition, 24-31, 42-48 *with* Ex.1011, 54-56 and Ex.2001, 637-639. Petitioner does not deny it applies Beach-127 in the same way the Examiner did, if fact, it embraces that fact. *See, e.g.*, Petition, 24, 25, 28, 30-31, 32, 43, 45, 47, 48 (noting, after mapping Beach-127 to each claim limitation, that “the intrinsic record demonstrates the Office’s finding ... that Beach-127 discloses this limitation”). Thus, there is significant overlap between the arguments made during prosecution of the '013 Patent family and the arguments made in the Petition. *See Becton-Dickinson* at 17-18 (factor (d)); *see also Bio-Rad Laboratories, Inc. v. 10X Genomics, Inc.*, IPR2019-00566, Paper 21 at 10 (July 22, 2019) (denying institution under § 325(d) in part because “the Petition relies on [the prior art] in the same manner as the Examiner did in the rejection of the original claims.”) (“*Bio-Rad Laboratories*”).

For these reasons, Beach-127 is the same art that was extensively analyzed by the Examiner—and overcome by Patent Owner—during prosecution of the '013 Patent and its family members. *See Becton-Dickinson* at 17-18 (factor (a)).

2. Wiese

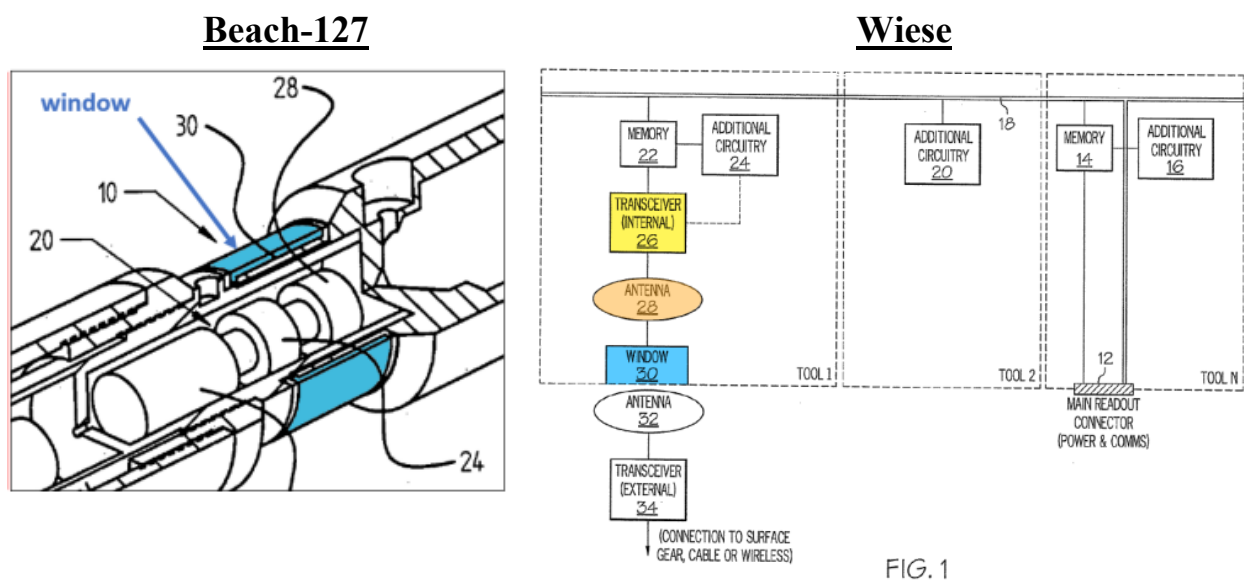
The Petition alleges that “discretionary denial is inappropriate” because “all proposed Grounds of this Petition combine Beach-127 with one or more prior art references *not* before the Patent Office during prosecution.” Petition, 78 (emphasis in original). For independent claim 1, Petitioner combines Wiese with Beach-127 exclusively for the “window” limitation. Petition, 36-42. Wiese, however, is cumulative to Beach-127, and Petitioner provides no argument or analysis to the contrary. In fact, Petitioner does the opposite—it urges the Board to find that both Wiese and Beach-127 teach the claimed “window” under its claim construction.

Petitioner asserts that the term “window” “should be construed to require a solid material that is transmissive to a communication signal.” Petition, 11. When mapping the window limitation to the prior art, Petitioner expressly states that both Beach-127 and Wiese meet its proposed claim construction in exactly the same way:

⁶ As shown in Figure 2, Beach-127 discloses a “window” even if that term were narrowly construed to require a solid material transmissive to a communication signal. *See* Section IV.A., *supra*; Ex. 1022, ¶ 118.

⁷ Wiese—like Beach-127—thus discloses a “window” even if that term were construed to require a solid material transmissive to a communication signal, as discussed above. *See* Section VI.A, *supra*.

Petition, pp. 33, n.6, 38, n.7. As shown, Petitioner describes Beach-127’s and Wiese’s disclosure as being interchangeable with respect to its claim construction because each discloses “a solid material transmissive to a communication signal” (rather than, for example, a void or a port). Petition, 33, 38, 11-12. Consistent with this, Petitioner annotates figures from Beach-127 and Wiese to establish that both allegedly include a “window”:



Petition, 33, 37 (annotating both “windows” in blue).

Importantly, Wiese’s disclosure is even more limited than Beach-127’s disclosure with respect to the full “window” limitation. Although Wiese uses the term “window,” Wiese fails to teach any of the *other* requirements of the window limitation: “a window *that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity.*” The Petition does not rely on Wiese to teach each of these additional requirements. *See* Petition, 32-42. For example, the Petition does not map any element in Wiese for the claimed “*sealed interior cavity*” or the claimed “*closed proximal end of the sealed interior cavity.*” *Id.* at 25-28.

Importantly, Petitioner does not even allege that Wiese teaches the specific requirement that the Examiner believed was missing in Beach-127—a window that

extends “*proximate the closed proximal end of the sealed interior cavity.*” In other words, this is **not** the situation in which a Petitioner cites to a new secondary reference to cure a deficiency identified by an Examiner in a previously cited reference. See, e.g., *Halliburton Energy Servs., Inc. v. U.S. Well Servs., LLC*, IPR2021-01038, Paper 11 at 19 (January 19, 2022) (finding a newly cited reference “not cumulative” because it taught “the exact aspect the Examiner deemed was missing” from the previously cited reference). Petitioner is relying upon Wiese to teach the same thing as Beach-127: a “window” as defined by its claim construction, making Petitioner’s use of Wiese cumulative. See *Motorola Mobility LLC v. Maxell, LTD*, IPR2022-01287, Paper 11 at 18-19 (Feb. 2, 2023) (“Petitioner is therefore relying on [the second prior art reference] to teach the same thing as [the first prior art reference], making Petitioner’s use of [the second prior art reference] for this purpose cumulative to [the first prior art reference].”).

Moreover, Petitioner’s assertion that both Beach-127 and Wiese teach a “window” under its construction forms the basis for its alternative grounds of rejection. See Petition, 32 (“This [window] limitation is disclosed by Beach-127, or else a POSA would have been motivated to implement this feature based on Beach-127 alone or in view of Wiese.”). Specifically, Petitioner asserts that Beach-127 alone discloses the window limitation, and also asserts ***in the alternative*** that that Beach-127 in view of Wiese discloses the window limitation. Petition, 5, 32-

42 (“Even if Beach-127 were interpreted as *not* disclosing ‘a window’”) (emphasis in original). The Board has consistently held under part one of *Advanced Bionics* that when a Petitioner uses a second prior art reference as an alternative to a first, the second prior art reference is “cumulative” to the first prior art reference. *See, e.g., Bio-Rad Laboratories* at 7 (finding an alternative reference cumulative because “Petitioner has not indicated, in the context of 35 U.S.C. § 325(d), any material differences between [the prior art references]. Indeed, Petitioner **relies upon them in the alternative** for its obviousness challenge.”); *Microsoft Corporation v. Throughputer, Inc.*, IPR2022-00757, Paper 10 at 19 (Nov. 1, 2022) (finding an alternative reference cumulative because “we understand the Petition to be applying [the prior art references] mainly as **alternatives** to [the first prior art reference]”); *see also Splunk Inc. v. Sable Networks, Inc.*, IPR2022-00003, Paper 10 at 11-12 (April 14, 2022). Accordingly, Petitioner’s own use of Wiese as an alternative to Beach-127 under its construction of “window” establishes that Wiese is cumulative to Beach-127 under *Advanced Bionics*. *See Becton-Dickson* at 17-18 (factor (b)).

Petitioner makes no effort to argue that Wiese is not cumulative to Beach-127—nor could it. Doing so would require Petitioner to undercut the entire structure and theory of the Petition. Petitioner would either have to admit that Beach-127 does not teach the window limitation or drop Wiese as a ground

altogether. Accordingly, even if given the chance, Petitioner cannot show that Wiese is cumulative to Beach-127.

For these reasons, Petitioner presents the same art (Beach-127) and substantially the same art (Wiese) that was before the Examiner during prosecution—thereby satisfying part one of the *Advanced Bionics* framework.

C. *Advanced Bionics* Part Two: The Petition has not shown that the Examiner materially erred during prosecution of the '013 Patent.

1. Petitioner cannot meet its burden by pointing to rejections of materially different claims

Petitioner asserts that the Office materially erred because “the Examiner either failed to consider Beach-127 substantively during prosecution of the '013 Patent, or else that he misapprehended or overlooked its disclosures in doing so.” Petition, 80. Petitioner apparently believes the Examiner should have rejected the pending claims of the '013 Patent over Beach-127 because “the same Examiner *did* issue prior art rejections based on Beach-127 during the respective prosecutions of the parent '463 Patent and the child '529 Patent,” and “**those pending claims recite the same limitations of challenged Claims 1-3 and 19-22 of the '013 Patent.**” Petition, 80, 9. Petitioner’s characterization does not show the Office erred because it is not accurate. The pending claims of the Parent Patent and the Child Patent rejected over Beach-127 were *substantively different* than the claims of the '013 Patent, as explained above in Section II.A.

With respect to the Parent Patent, the pending claims rejected over Beach-127 did **not** include the window limitation of the '013 Patent. Ex.1011, 204-207, 54-56. Patent Owner amended the claims to **add** the window limitation to gain allowance. Ex.1011, 204-207, 36, 31, 9-13. After securing allowance of the Parent Patent based on the window limitation, Patent Owner included the same allowable window limitation in the as-filed claims of the '013 Patent. Ex.1002, 283. The Examiner thus had no reason to reject the pending claims of the '013 Patent—they included the same allowable subject matter as the recently-issued Parent Patent. Despite Petitioner's contentions to the contrary, the Examiner did not “misapprehend[] or overlook[]” Beach-127 when evaluating the '013 Patent. Petition, 80. Rather, by issuing only a double patenting rejection over the claims of the '013 Patent, he **confirmed** that Beach-127 does not disclose the window limitation.

The pending claims of the Child Patent rejected over Beach-127 similarly did not recite the “window” limitation of the '013 Patent. Instead, they recited a different and broader window limitation—one that did not include the requirement that the window extend “*proximate the closed proximal end of the sealed interior cavity.*” Ex.1013, 382-83. This requirement is also recited in the window limitations added to the pending claims of the Parent Patent and Grandparent Patent that the Examiner deemed allowable, as illustrated below.

Grandparent Patent	Parent Patent	'013 Patent	Child Patent
a plurality of windows defined in the elongate tube body that extend from the exterior surface of the elongate tube body into optical communication with the sealed interior cavity proximate a closed proximal end of the sealed interior cavity;	a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity;	a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity;	a window that extends from the exterior surface into optical communication with the sealed interior cavity;

The Petition never acknowledges this material difference in the window limitation of the Child Patent. *See, e.g.*, Petition, 9 (the “pending claims [of the Child Patent] recite the same limitations of challenged Claims 1-3 and 19-22 of the '013 Patent.”). Instead, Petitioner implies that the Examiner somehow changed his mind with respect to whether Beach-127 teaches the window limitation and, given another chance, would reject the '013 Patent over Beach-127. The Examiner did not change his mind; Patent Owner changed the claims.

Moreover, even if the Examiner did change his mind about Beach-127 (which he didn't), Petitioner could still not meet its high burden of showing material error. The Examiner reversing his position shows, at most, that "reasonable minds can disagree" regarding whether Beach-127 teaches the claimed window. *Advanced Bionics* at 9.

Accordingly, Petitioner has not met its burden to show the Office materially erred in its evaluation of the '013 Patent because it points to rejections of materially different claims. The Office in fact did **not** err in allowing the '013 Patent over Beach-127. The claims of the '013 Patent include subject matter already found allowable over Beach-127 and thus the Examiner had no reason to reconsider Beach-127 during its prosecution. The Examiner only reconsidered Beach-127 during the prosecution of the Child Patent because its window limitation is different and broader.

Petitioner attempts to prop up its § 325(d) analysis by alleging that "Patent Owner acquiesced in the Examiner's assessments regarding Beach-127 and, in turn, that Beach-127 discloses all limitations of challenged Claim 1." Petition, 81, 36. As an initial matter, whether Patent Owner did or did not acquiesce in the Examiner's assessments is irrelevant to whether the Office erred. *See Sanofi v. Watson Lab'ys Inc.*, 875 F.3d 636, 650 (Fed. Cir. 2017) (holding that the "familiar pattern" in which "an applicant adopts an explicit claim-narrowing limitation to

achieve immediate issuance of a patent containing the narrowed claims” does not, without more, create disclaimers with respect to the unamended claim language). More importantly, Patent Owner in fact did not acquiesce in the Examiner’s assessments regarding Beach-127. During the prosecution of the Parent Patent, the opposite was true—the *Examiner agreed with Patent Owner*. Patent Owner argued that “Beach ...[is] silent regarding the presence of such a window,” and the Examiner then allowed the claims containing the window limitation. Ex.1011, 204-207, 36, 31, 9-13. During the prosecution of the Child Patent, Patent Owner “respectfully traverse[d]” the rejection over Beach-127 and elected to amend claim 1 to incorporate subject matter from allowable claim 2 “in an effort to facilitate prosecution.” Ex.1013, 77, 63, 194. Petitioner is therefore wrong that Patent Owner conceded that Beach-127 taught the window limitation (or any other limitation) of the ’013 Patent.

Petitioner has thus failed to prove that the Office materially erred during prosecution of the ’013 Patent. *See Becton-Dickinson* at 17-18 (factor (e)).

2. The Petition does not present any evidence that would warrant reconsideration

Petitioner does not point to any additional evidence or facts that would warrant reconsideration of the Examiner’s decision to allow the ’013 Patent over Beach-127. *See Becton-Dickinson* at 17-18 (factor (f)). With respect to Beach-127,

Petitioner alleges that the Petition points to the same figure (Fig. 2) and portions of Beach-127 that the Examiner considered. *See, e.g.*, Petition, 24, 25, 28, 30-31, 32, 43, 45, 47, 48 (“the intrinsic record demonstrates the Office’s finding ... that Beach-127 discloses this limitation”). Petitioner does not allege that the Examiner overlooked any part of Beach-127. *See Advanced Bionics* at 21.

Additionally, as explained in Section II.B.2 above, Wiese is cumulative to Beach-127 and does not add any significant evidence or facts that would warrant reconsideration. Petitioner does not allege that Wiese cures any deficiency in Beach-127, including the requirement that the Examiner believed was missing in Beach-127—a window that extends “*proximate the closed proximal end of the sealed interior cavity.*” Accordingly, even if the Examiner had Wiese in front of him when evaluating the ’013 Patent, the result would have been the same.

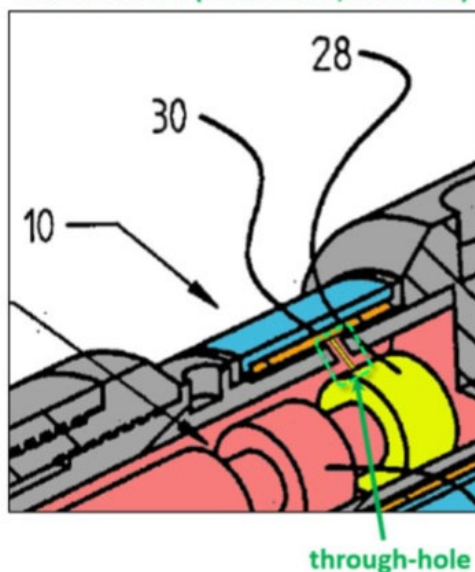
Further, Petitioner’s expert declaration does not provide any additional evidence or facts about Beach-127 that would warrant reconsideration. The declaration, like the Petition, asserts that it points to the same portions of Beach-127 (e.g., Fig. 2) that the Examiner allegedly considered. *See, e.g.*, Ex.1022, ¶¶ 96, 100, 105, 111, 114, 123, 142, 146 149, 152. Without more, Petitioner cannot prove material error simply by pointing to expert testimony that disagrees with the Examiner. *See Ivantis, Inc. v. Sight Sciences, Inc.*, IPR2022-01530, Paper 14 at 18, 23, 29 (March 27, 2023) (“Here, [the expert witness] looked at substantially the

same references as the Examiner and comes to a different conclusion, but that is not compelling, especially when there is no explanation how the Examiner erred.”); *Risen (Suzhou) Pharma Tech. Co. Ltd. V. Alzheon, Inc.*, PGR2022-00051, Paper 14 at 60 (January 13, 2023) (The expert witness’s “testimony regarding additional studies with larger patient populations, while relevant, fails to provide concrete evidence of error. ... Without more, we find that Petitioner has not sufficiently shown the Examiner’s actions were error rather than an exercise of judgment on which reasonable minds can disagree.”).

Dr. Rodgers’ testimony regarding an inherent “through-hole” in Beach-127 also does not warrant reconsideration. First, Petitioner does not establish—or even allege—that the Examiner “overlooked” this allegedly inherent concept when evaluating Beach-127. Petitioner has therefore not made the required “showing” under *Advanced Bionics* with respect to this testimony. *Advanced Bionics* at 21 (“Petitioner must demonstrate that the Examiner erred in the evaluation of the prior art, for example, by showing that the Examiner misapprehended or overlooked specific teachings in the relevant prior art such that the error by the Office was material to the patentability of the challenged claims.”). Second, even if a “through-hole must be present in the body 22 in the region under the antenna 30,” as alleged by Dr. Rodgers (Ex.1022, 69-71), such through-hole would not create the claimed “*window that extends from the exterior surface into optical*

communication with the sealed interior cavity,” as explained in Section IV.A below. As shown in Dr. Rodgers' redrawing of Fig. 2 (reproduced below), the through-hole (i) at most permits optical communication from the antenna 30 to the interior cavity, not from “*the exterior surface*” as required, and (ii) if created, would ***unseal*** Beach-127's interior cavity contrary to the claimed requirement of a “*sealed interior cavity.*”

Redrawing of Figure 2, illustrating through-hole needed for transceiver and antenna to communicate (Beach '127, 12:24-28)



Ex.1022, 70; *see* Petition, 35. Accordingly, Dr. Rodgers' declaration does not warrant reconsideration of the '013 Patent.

Patent Owner need not address whether the Klass or Pickard references are cumulative because these are cited only against dependent claims. *See Nespresso USA, Inc. v. K-Fee System GmbH*, IPR2021-01223, Paper 9 at 20 (Jan. 18, 2022)

(“To summarize, Petitioner asserts [the prior art reference] only in connection with two limitations of a subset of the dependent challenged claims. A trial in this case necessarily would require the Board to assess whether both independent claims, as well as the majority of the dependent challenged claims, are unpatentable in view of the same or substantially the same references previously presented to the Office. ... Accordingly, on this record, we find that Petitioner’s challenges raise substantially the same prior art previously presented to the Office.”). Even so, Pickard and Klass are used only to address minor limitations in claims 2 and claims 14-15, respectively. Petitioner itself explains that the “Petition relies primarily on the Beach ’127 reference.” Petition, 78.

In sum, the Board should exercise its discretion under § 325(d) and deny institution of the Petition. The Examiner thoroughly considered Beach-127 during the prosecutions of the ’013 patent and its family members and concluded on three separate occasions that it did not teach the window limitation of the ’013 Patent. Petitioner now asks the Board to relitigate this same issue without providing proof of a material error and without providing compelling, non-cumulative evidence. Institution would waste Board resources revisiting issues that the Examiner conclusively addressed during prosecution. *See, e.g., Aquestive Therapeutics, Inc. v. Neurelis, Inc.*, IPR2019-00450, Paper 8 at 22 (Aug. 1, 2019) (“It is simply not an efficient use of the Board’s time and resources to revisit the same prior art

disclosures that were examined in detail by the Examiner.”); *CSL Behring GmbH v. Shire ViroPharma, Inc.*, IPR2019-00459, Paper 8 at 22 (July 2, 2019) (“Thus, when we consider the interests of conservation of resources and finality of prior Office determinations—the policy objectives underlying § 325(d) and the *Becton Dickinson* factors—we determine that the circumstances in this case weigh strongly in favor of exercising our discretion to not institute an *inter partes* review.”).

III. CLAIM CONSTRUCTION

No claim construction is necessary to deny institution. Patent Owner’s arguments for denial do not hinge on the outcome of an actual controversy about construction of a claim term. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only terms in controversy need to be expressly construed, and only to the extent necessary to resolve controversy). As explained below, the defects in the Petition are readily identifiable without defining any specific claim term.

While no affirmative constructions are needed to deny the Petition, the Board should reject Petitioner’s proposed construction of “window.” The Board construes claims in an IPR “using the same claim construction standard that would be used to construe the claim in a civil action.” 37 C.F.R. § 42.100(b) (as amended Nov. 13, 2018). Under that claim construction standard, a claim term is given its

“ordinary and customary meaning . . . as understood by one of ordinary skill in the art” except “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Id.*; *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Petitioner urges the Board to narrowly construe the term “window” to exclude “open void[s] or aperture[s]” and instead require that a “window” comprise “a solid material that is transmissive to a communication signal.” *See* Petition, 11-12. But the Petition fails to show either that this proposed limitation is consistent with any ordinary or customary meaning of “window” or that Patent Owner clearly and unequivocally limited the term through lexicography or disavowal.

In any event, Petitioner is not reasonably likely to prevail under any reasonable construction of the term “window,” as illustrated below.

IV. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF SUCCESS ON THE MERITS

The Board should deny institution for the additional and independent reason that Petitioner has not shown a reasonable likelihood of prevailing with respect to any claim challenge in the Petition. *See* 35 U.S.C. § 314(a). Claim element 1[e], which appears in the '013 Patent's only independent claim, recites “*a window that*

extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity.”

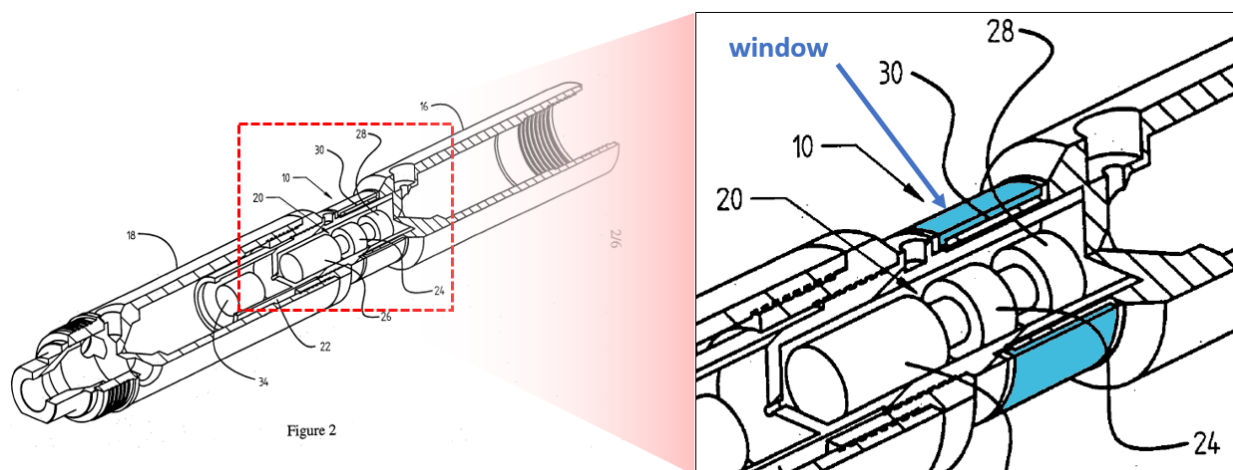
Petitioner has failed to show that either Beach-127 alone or the proposed combination of Beach-127 and Wiese discloses or renders obvious claim element 1[e]’s requirements under any reasonable construction.

A. Beach-127 alone does not disclose or render obvious claim element 1[e].

Claim element 1[e] requires that the claimed core barrel head assembly include “a window that extends *from the exterior surface into optical communication with the sealed interior cavity* proximate the closed proximal end of the sealed interior cavity.” Although the Petition purports to identify a “window” in the “body 22” of Beach-127, it fails to show that that alleged window extends from the exterior surface into optical communication with what Petitioner has identified as the “sealed interior cavity,” as required.

Beach-127 does not mention a “window” in the body 22. *See* Petition, 32-33. Nevertheless, the Petition alleges that a POSITA “would have appreciated” that Beach-127’s body 22 includes a “window” because Beach-127 discloses that the “electronic device 20” within the body may include a transceiver 28 that can communicate with an external hand-held computer or other device via an antenna 30. *Id.*; Ex. 1022, ¶¶ 116-18. Specifically, the Petition asserts that the highlighted

portion of the exterior surface of the embodiment depicted in Figure 2 below must be a “window” because it permits communication between the antenna 30 and an external device. Petition, 33.



Petition, 33. But even if the highlighted component is a “window,” as the Petition asserts, the Petition fails to show either that the alleged “window” (1) permits “*optical* communication” or (2) that it permits communication of any kind *between the exterior surface and the “sealed interior cavity,”* as claim 1 requires.

1. The Petition does not allege and Beach-127 does not disclose “optical” communication.

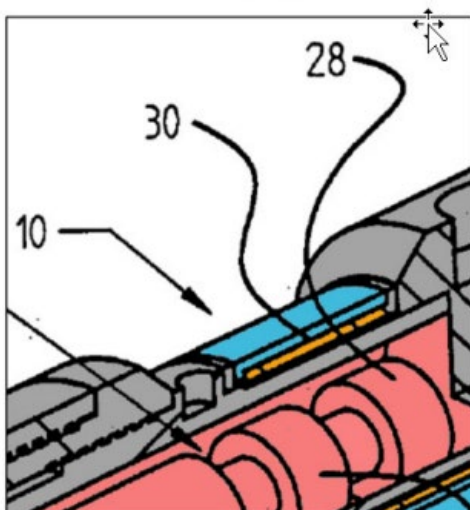
First, the Petition does not even address the claim’s requirement that the window extend into *optical* communication with the sealed interior cavity. Instead, it asserts only that the alleged window “permits *data transmission* from the electronic system 20 (i.e., within the assembly), to the handheld computer or other remote unit (i.e., external to the assembly).” Petition at 34. Nothing in Beach-

127 teaches or suggests that this data transmission is via optical communication, as the claim requires. Indeed, the portion of the body 22 Petitioner identifies as the alleged “window” appears in Figure 2 to be an *opaque exterior* housing that would not permit transmission of optical signals. Accordingly, the Beach-127 ground fails for this reason alone.

2. The purported “window” the Petition identifies does not extend into communication (of any kind) with the “sealed interior cavity.”

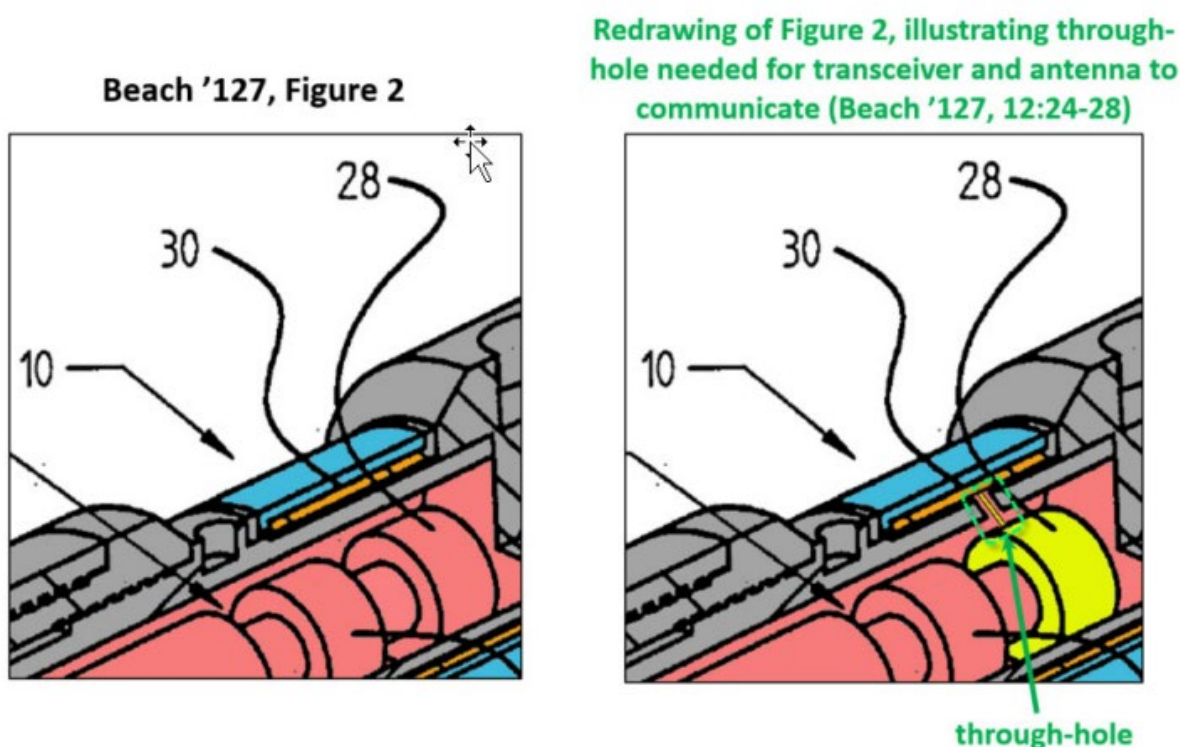
Second, the Petition fails to show that the alleged window itself permits communication between the “exterior surface” and the “sealed interior cavity,” as the claim requires. At most, it shows that the window permits communication between an exterior device and the “antenna 30.” As Petitioner’s own annotation of Beach-127’s Figure 2 demonstrates, the antenna 30 is *outside* of the cavity that the Petition maps to the recited “*sealed interior cavity*” of claim 1:

Beach '127, Figure 2



Petition, 35.

The Petition attempts to remedy this deficiency by asserting a POSITA would have understood Beach-127's body 22 would inherently include an undepicted "through-hole" in the region under antenna 30 "to permit reliable communication" between the transceiver 28 of the electronic device and the antenna, as shown in the modified figure from the Petition below:



Petition at 35.

But as Petitioner admits, Beach-127 does not describe or depict any such through-hole. *See id.* at 34; *see generally* Ex. 1003. And neither the Petition nor Petitioner's supporting expert declaration even attempts to establish that "reliable

communication” between the transceiver 28 and the antenna 30—which Petitioner’s expert admits may take place through “various forms of wireless communication”—***necessarily*** requires a through-hole. *See* Petition at 34-35; Ex. 1022, ¶¶ 120-122. Therefore, the Petition fails to establish that Beach-127 inherently discloses a through-hole. *See PersonalWeb Techs., LLC v. Apple, Inc.*, 917 F.3d 1376, 1382 (Fed. Cir. 2019) (quoting *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1195 (Fed. Cir. 2014) (“Inherency ... may not be established by probabilities or possibilities.”)).

Even if Petitioner could establish that Beach-127 expressly or inherently discloses a through-hole, Petitioner still could not show that Beach-127 discloses or renders obvious that the “***window*** . . . extends from the exterior surface into optical communication with the sealed interior cavity,” as claim element 1[e] requires. Petitioner’s unsupported inherency argument would establish, at most, that (i) the window permits communication from the exterior surface to the antenna 30, and (ii) the through-hole permits separate communication from the antenna 30 to transceiver 28 in the cavity. But that is insufficient for the window itself to extend into optical communication with the interior cavity, as required.

Moreover, if the interior cavity included a through-hole, as alleged by Petitioner, it would not be “*sealed*.” Therefore, the purported “window” the Petition identifies would not extend into optical communication with any “***sealed***

interior cavity,” as the claim recites.

The Petition thus fails to show that Beach-127 expressly or inherently discloses “a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal end of the sealed interior cavity.”

3. Beach-127 in view of the knowledge of a POSITA does not render claim element 1[e] obvious.

Petitioner’s argument that Beach-127 in view of “the knowledge and skill of a POSA” would have rendered the window limitation obvious also fails. Petition, 37. Petitioner’s sole argument is that a POSITA “would have appreciated that optical communication techniques—e.g., infrared (IR) or visible light—were, at the time of the ’013 Patent priority date, common and straightforward methods for transferring data from downhole equipment to surface equipment,” and thus, it would have been obvious to perform the disclosed communication between the Beach-127’s antenna 30 and an external handheld device via optical communication. Petition, 36-37 (citing Ex.1022, ¶¶ 126-27).

But as already noted, Beach-127 does not disclose that the portion of the body 22 that Petitioner maps to the claimed “window”—or any other portion of the body 22—is transmissive of optical signals, and the Petition makes no effort to explain why it would have been obvious to modify a portion of the body to be

comprised of a material that is transmissive of optical signals.

Further, simply replacing the wireless communication between the antenna 30 and any external device would not cure Beach's failure to disclose a window that "extends *from the exterior surface into optical communication with the sealed interior cavity*." Again, that would only make the window extend from the exterior surface into optical communication with the antenna, not with the sealed interior cavity.

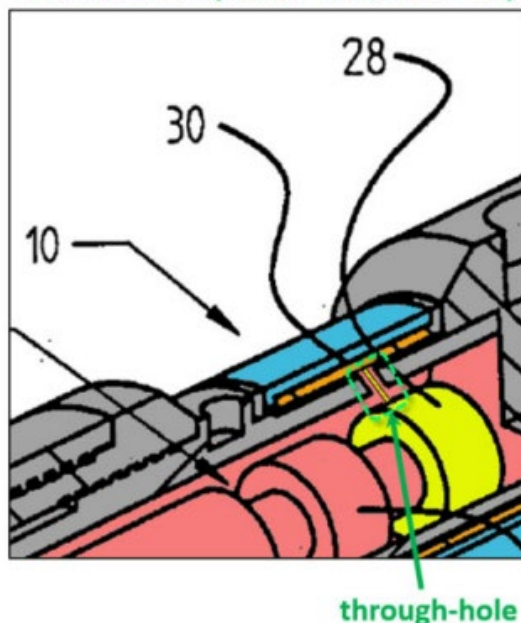
Accordingly, the Petition fails to establish a reasonable likelihood of success in showing that Beach-127 alone discloses or renders obvious any challenged claim.

B. The combination of Beach-127 and Wiese does not render claim element 1[e] obvious.

The proposed combination of Beach-127 and Wiese fails to cure the above deficiencies. Petitioner's proposed combination—which would replace the antenna 30 in the embodiment depicted in Beach-127's Figure 2 with an LED array—also fails to disclose or render obvious a window that "extends *from the exterior surface into optical communication with the sealed interior cavity*." Replacing the antenna 30 with an LED array would, at most, provide for optical communication between the LED array and the exterior surface through the window. In other words, the LED array (replacing antenna 30) would be positioned

between the exterior surface and the interior cavity, ***blocking optical communication between them***, as shown below in Petitioner's redrawing:

Redrawing of Figure 2, illustrating through-hole needed for transceiver and antenna to communicate (Beach '127, 12:24-28)

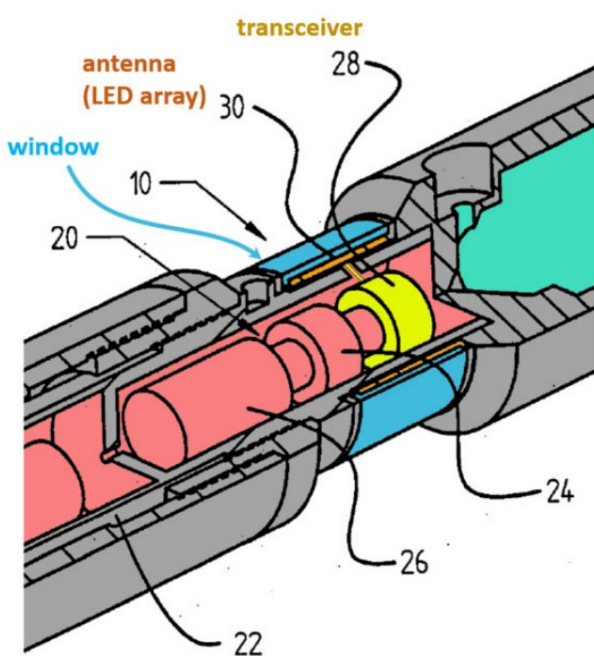


Petition, 35. Therefore, the alleged window of the proposed combination would extend only from the exterior surface into optical communication with the LED array—not the interior cavity. Moreover, the alleged window would not ***need*** to extend into optical communication with the sealed interior cavity because the LED array, rather than a device within the sealed interior cavity, would be transmitting the optical signals to any external device.

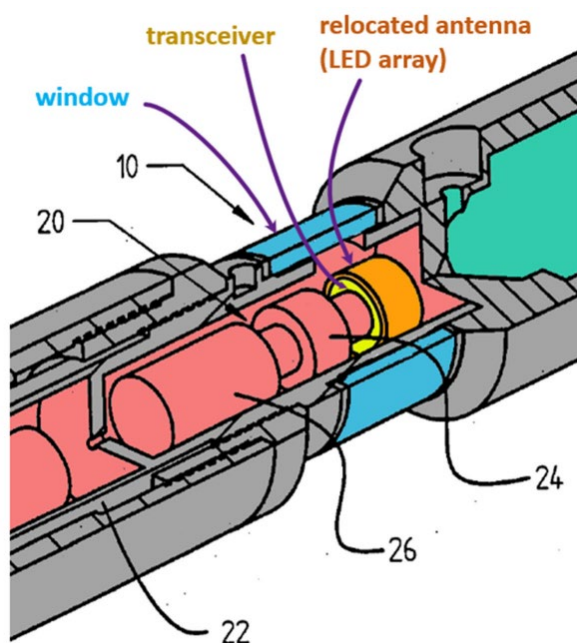
The Petition further proposes that the LED array could in turn communicate with the transceiver 28 of the electronic device 20 within the sealed interior cavity

via optical communication. *See* Petition at 40. But the Petition fails to explain how an LED array could *receive* optical signals from the sealed interior chamber. And even if it could, that would not cause the purported “window” Petitioner identifies in the body 22 of Beach to extend into optical communication with the sealed interior cavity. Instead, the window’s optical communication would still extend only to the LED array.

Petitioner’s expert suggests two specific arrangements involving further modifications to Beach-127 that he alleges “demonstrat[e] how a POSITA would have been motivated to apply Wiese’s teachings to Beach-127’s Figure 2 assembly, and how doing so would satisfy this limitation.” Ex. 1022, ¶¶ 133-36. But neither arrangement results in a window that “extends from the exterior surface into optical communication with the sealed interior cavity,” as required. Instead, as shown, both proposed arrangements would require *unsealing* the inner cavity containing Beach-127’s electrical device 20:



Beach/Wiese Example 1:



Beach/Wiese Modification 2:

Id., ¶¶ 134-35. The first arrangement would require creating a through-hole to facilitate communication between the transceiver 28 of the electrical device 20 and the LED array, and the second arrangement would require displacing the antenna 30 to combine it with the transceiver 28 and opening a portion of the sealed interior chamber to provide for optical communication between the combined antenna and transceiver and the purported window in the exterior of the body 22. *Id.* Neither arrangement would result in a window that extends into a “*sealed* interior cavity” as required. Therefore, neither proposed combination discloses or renders obvious claim element 1[e].

In sum, Petitioner and its expert fail to show that the proposed combination would meet claim element 1[e], and even if it had, Petitioner has not “articulated

reasoning with some rational underpinning” to support its assertion that a POSITA would have been motivated to reconfigure Beach-127’s core orientation device as suggested. *See InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014). Instead, Petitioner’s expert’s proposed rearrangements of the Beach-127 device merely reflect an impermissible attempt to use the challenged claims as a “roadmap” to attempt to fit the prior art to the claim language. *Id.*

Because the Petition fails to establish that either Beach-127 alone or the combination of Beach-127 and Wiese discloses or renders obvious claim element 1[e], Petitioner cannot show that Ground I is likely to succeed. Grounds II and III also rely on Beach-127 and Wiese to disclose the limitations of claim element 1[e], so those Grounds fail, as well.

III. CONCLUSION

For the foregoing reasons, Patent Owner requests that institution be denied.

Dated: June 28, 2023
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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Preliminary Response, that the number of words in this paper is 7,669. This word count excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, signature block, and appendix of exhibits. *See* 37 C.F.R. §42.24(c).

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e),
service was made on Petitioner as detailed below.

Date of service June 28, 2023

Manner of service Electronic Service by E-mail: sweidenfeller@cov.com;
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Documents served **Patent Owner's Preliminary Response; Exhibit List and
Exhibits Ex.2001 – Ex.2003**

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