UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAMBRIDGE INDUSTRIES USA, INC.,

Petitioner

v.

APPLIED OPTOELECTRONICS, INC.,

Patent Owners

Case: IPR2025-00434

U.S. Patent No. 10,379,301

PETITIONER'S OPPOSITION TO PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL OF INSTITUTION

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Ex. 1002	'301 File History	File History of U.S. Patent No. U.S. Patent No. 10,379,301
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I. INTRODUCTION

Petitioner Cambridge Industries USA, Inc. ("Petitioner" or "CIG USA") submits this brief in opposition to Patent Owner's Request for Discretionary Denial of the instant IPR petition for the '301 patent. Patent Owner's brief mentions, but then ignores, that the parallel district court litigation between Patent Owner and Petitioner was indefinitely ***stayed*** by Judge Donato on April 4, 2025, pending outcome of the PTAB proceedings. That fact, which satisfies *Fintiv* factor 1, weighs heavily against discretionary denial. *Fintiv* factors 2-5, which are subsumed in factor 1, likewise do not support denial. For example, Patent Owner's claim that the parties have invested substantial resources in the parallel proceeding lacks merit; prior to entry of the stay, the parties did no more than was required by the Patent Local Rules of the U.S. District Court for the Northern District of California, and nothing since entry of the stay.

Patent Owner tries to conflate its later-filed district court case against a ***different*** and unrelated defendant (Accelight Technologies), pending before a ***different*** district court judge (Judge Gilliam), as supporting discretionary denial. Yet Judge Gilliam routinely stays litigation for PTAB proceedings and scheduled his *Markman* hearing for October 31, 2025, well after the expected institution decision here. If this IPR is instituted, Judge Gilliam surely will grant Accelight's expected request to stay that case; that case too is unlikely to reach its *Markman* hearing.

Patent Owner's host of other considerations under *Fintiv* factor 6 and the Director's Memo, Exhibit 2001, are many shades weaker than its "judicial efficiency" claim. For example, Patent Owner derides Petitioner's reliance on expert testimony. Yet that testimony serves the approved purpose of guiding the Board to the relevant portions of the cited references. It does not, as in *Next Caller* (cited by Patent Owner) substitute unbased opinion for claim limitations missing from the cited references. The remaining factors enumerated in Ex. 2001 likewise are either neutral or do not support discretionary denial.

Patent Owner's contention that the Petition lacks merit also fails. Patent Owner's arguments are based on a shifting sands approach to claim construction, in which Patent Owner seeks to construe a term broadly before the district court for purposes of infringement, but seeks a narrow construction of the same term for purposes of this IPR. Patent Owner's arguments also rely on bare bones attorney interpretation of figures in the cited references that ignore the corresponding disclosure in the specification. Lacking any credible rebuttal, Petitioner's anticipation analyses remain strong, demonstrating the invalidity of the '301 patent. This factor, like others above, does not support discretionary denial.

The Director (and Board) should institute the instant IPR to effectuate the purposes of the AIA and prevent targeting of legitimate businesses with improvidently granted low-quality patents.

II. DISCRETIONARY DENIAL IS NOT WARRANTED

A. The *Fintiv* Factors Weigh Heavily Against Discretionary Denial

Neither the factors listed in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper No. 11 at 5-6 (P.T.A.B. Mar. 20, 2020) (precedential) ("*Fintiv"*) nor the Director's Memorandum (Exhibit 2001) favor discretionary denial of this Petition. Here, *Fintiv* factors 1-5 disfavor a discretionary denial for at least the reason that Patent Owner's parallel litigation against Petitioner is stayed pending resolution of these PTAB proceedings. Moreover, Patent Owner's litigation against unrelated entity Accelight, pending before a different judge, likely will be stayed. Patent Owner also misstates the significance of *Fintiv* factor 6 considerations and the additional factors set forth in Ex. 2001, which are either neutral or do not support a discretionary stay.

1. All of the *Fintiv* Factors Disfavor Discretionary Denial

Tacitly admitting that *Fintiv* factor 1 (Stay) militates strongly against a discretionary denial, Patent Owner focuses on other *Fintiv* factors, without ever discussing the first *Fintiv* factor: "whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted." There is an obvious reason why

Fintiv lists the stay factor first – if a stay has been granted (as here), the rest of the *Fintiv* factors become much less important, if not entirely moot.

Patent Owner addresses *Fintiv* factors 2-6, out of order, to distract as much as possible from the fact that Judge Donato has stayed Patent Owner's parallel litigation against Petitioner pending outcome of the PTAB proceedings. Patent Owner instead suggests that its district court litigation against an unrelated entity (Accelight Technologies) before a different judge (Judge Gilliam) should take precedence in the *Fintiv* analysis. But as explained below, Judge Gilliam routinely stays his litigations when the underlying patents are (or may be) involved in PTAB proceedings. Petitioner addresses *Fintiv* factors 1-6 below in numerical sequence.

a. Factor 1 (Stay) Weighs Heavily Against Discretionary Denial

As Patent Owner acknowledges, Paper No. 8 at 12, the parallel district court proceeding between it and Petitioner was stayed on April 4, 2025. This factor militates strongly against discretionary denial here. *See, e.g.*, *Fintiv*, fn 9: *Precision Planting, LLC v. Deere & Co.*, IPR2019-01052, Paper No. 19 at 10 (P.T.A.B. Jan. 7, 2020) (finding that the district court stay of the parallel district court case ***rendered moot*** the patent owner's argument for discretionary denial of the petition); *Apotex Inc. v. UCB Biopharma Sprl*, IPR2019-00400, Paper No. 17 at 31–32 (P.T.A.B. July 15, 2019) (finding that the district court ***stay of the parallel district court case predicated on the***

inter partes review means that the trial will not occur before the Board renders a final decision). Judge Donato has requested a status report on July 7, 2025; there is no reason to believe he would lift the stay just weeks before the institution decision.

Patent Owner makes much of its district court litigation against Accelight Technologies pending before Judge Gilliam in the Northern District of California. As shown in Exhibit G to Exhibit 1011, Judges in the Northern District of California typically grant stays after IPR institution, with 76% of all post-institution motions to stay pending *inter partes* review granted or granted in part over the past 12 years. In particular, as shown in Exhibit H to Exhibit 1011, ***Judge Gilliam has granted all such motions*** since 2016, and there is no reason to suspect he will not do so again here. Exhibits A-F to Exhibit 1012 provide examples of Judge Gilliam's routine orders staying his litigations pending the outcome of PTAB proceedings. The Scheduling Order (Ex. 2003) entered by Judge Gilliam sets the date of his claim construction hearing for October 31, 2025, two months *after* the expected institution date for this IPR, August 28, 2025. Patent Owner and Accelight will not have submitted their claim construction briefs by the institution date, providing ample time for Accelight to request a stay, which Judge Gilliam surely will grant if this IPR proceeds.[1] This factor weighs heavily against discretionary denial.

[1] Patent Owner implies that Judge Gilliam, at a Case Management Conference in

b. Factors 2 (Trial Date) and 3 (Parallel Proceedings) Are Moot

In view of the stay in Petitioner's case pending resolution of this IPR, and expected stay in *Accelight*, concern about the trial dates in parallel district court proceedings are moot.[2] Following successful conclusion of this IPR, Judges Donato and Gilliam may set trial dates for any remaining patents. But even if some aspect of the '301 patent survives, the resulting litigations will be greatly streamlined, resulting in judicial economy and litigation savings to the Petitioner, and probably Accelight as well. *Fintiv* factors 2 and 3 thus weigh against discretionary denial.

Prior to entry of the stay, the parties did no more in the parallel litigation than the exchanges required to comply with the Patent Local Rules for the United States District Court for the Northern District of California. Neither party identified an expert for their claim construction briefing, few documents were produced in response to discovery requests, and no depositions were scheduled or taken prior to entry of the stay. Contemporaneous with entry of the stay, Judge Donato vacated the scheduled

Accelight, decided to "move forward" after submission of a Notice reporting filing of the instant IPRs by Petitioner. However, neither the Notice nor any aspect of the IPRs was mentioned at that 8-minute conference. *See* Exhibit 1009, ¶¶ 3-4.

[2] The entire analysis set forth in *Next Caller, Inc. v. TrustID, Inc.*, IPR2019-00963, Paper No. 8 (P.T.A.B. Oct. 28, 2019), was based on the advanced state of the parallel litigation, and absence of a stay of that litigation.

Markman hearing. Contrary to Patent Owner's assertion, the parties invested little effort in the parallel litigation prior to the stay (and none since).[3] No greater effort should be expected in the *Accelight* case, as it is very likely to be stayed once the defendant there requests a stay.

In similar situations as here, non-identicality of the Defendant in an on-going parallel proceeding and the Petitioner weighed against discretionary denial. *See Fintiv* at fn. 26, citing to *Nalox-1 Pharms., LLC. v. Opiant Pharms., Inc*., IPR2019-00685, Paper No. 11 at 6 (P.T.A.B. Aug. 27, 2019) (distinguishing *NHK* because in *NHK*, "the Board considered 'the status of the district court proceeding between the parties'" and, in the *Nalox-1* case, the petitioner was not a party to the parallel district court litigations). Here, Petitioner's district court litigation is stayed and Petitioner is not a party to the on-going district court litigation with Accelight, which is likely also to be stayed.

c. Factor 4 (Issue Overlap) Disfavors Discretionary Denial

Stay of Petitioner's parallel proceeding, together with Petitioner's stipulation,

[3] Patent Owner faults Petitioner for waiting eleven months to file its IPR petition, notwithstanding the one-year provision of 35 U.S.C. § 314(a) and the guidance previously in effect. Further, Petitioner had no reason to file sooner as Patent Owner's settlement demand amounted to a fraction of Petitioner's cost to challenge the asserted patents via IPRs. Only after Patent Owner's settlement demands grew exponentially, at a court-ordered mediation conducted in late August 2024, did it became evident that the parallel litigation could not be resolved.

discussed below, obviates any concern about the issue overlap of *Fintiv* factor 4, even if Petitioner's parallel litigation someday, post-IPR, resumes.

Judge Donato evidently stayed Patent Owner's litigation against Petitioner to defer to the Board's technical expertise. Petitioner also stipulated in its Petition, pursuant to guidance in effect when the Petition was filed, that it would not pursue invalidity against the asserted claims in the district court using the specific combination of prior art references presented in this Petition. *See* Paper No. 2 at 32. Patent Owner's contention that the litigation, if ever resumed, will address the same issues as the Petition is illusory. If this IPR proceeds, either there will be no further litigation on the '301 patent or it will be highly streamlined.

Patent Owner further contends, without evidence, that there may be substantial issue overlap in its *Accelight* case. Petitioner has no knowledge of the prior art relied upon by Accelight in that case, nor has Patent Owner presented evidence to the Board that Accelight is relying on the same prior art as Petitioner proffered in its now-stayed litigation. As *Accelight* is likely to be stayed upon request, this factor is neutral.

d. Factor 5 (Same Party) Does Not Support Discretionary Denial

Petitioner is the defendant in the ***now-stayed*** case before Judge Donato, rendering this factor neutral, if not entirely moot. Petitioner is not remotely related to

the defendant in Patent Owner's *Accelight* case. And as discussed above, that case too is very likely destined to be stayed.

e. Factor 6 (Other Considerations) Disfavors Discretionary Denial

All other factors discussed in *Fintiv* or the Director's Memo, Exhibit 2001, are neutral or favor denial of Patent Owner's request for discretionary denial, including those related to the Petition's merits, discussed separately below.

For example, citing *Next Caller* and Ex. 2001, Patent Owner argues, Paper No. 8 at 41, that Petitioner's expert declaration by Dr. Andrew Kirk, Ex. 1003, is a basis for discretionary denial. In contradistinction to the expert declaration in *Next Caller*, Dr. Kirk's declaration performs the ***approved*** function of directing the Board to relevant passages of the cited references. *See, e.g.*, FAQs for Interim Processes for PTAB Workload Management, Ex. 1013 at ¶ 21. Dr. Kirk does not, unlike the expert in *Next Caller*, proffer opinions to supply critical limitations without disclosing the facts or data on which his opinion is based. *See Next Caller*, IPR2019-00963, Paper No. 8 (P.T.A.B. Oct. 28, 2019), at 31-32. Proper use of expert testimony here does not support discretionary denial.

Whereas Petitioner had not invested substantial effort in the parallel litigation prior to entry of the stay, Petitioner made a significant investment of time and resources to prepare and file this IPR. Patent Owner should not be permitted to frustrate that

effort by relying on its later case against an unrelated party. If instituted, this IPR will enhance judicial economy by saving ***two*** courts from repeating the same work of construing the claims and holding trials, while also reducing the likelihood of inconsistent jury verdicts. Institution of this IPR will likely save Petitioner CIG USA (and probably also Accelight) millions of dollars litigating their respective district court cases, and may obviate the need for the trials on the '301 patent.

Patent Owner's further contention, Paper No. 8 at 43, that litigation between Patent Owner and Petitioner may one day resume on Patent Owner's **other** patents, following conclusion of this IPR, does not support discretionary denial. As Patent Owner points out, Petitioner has challenged all of the claims of five of the eight patents asserted in the now-stayed parallel litigation. If Petitioner's IPRs proceed, the litigation workload of the court and the parties will be substantially reduced, if not completely obviated, thereby effectuating the purpose of IPR proceedings.

Patent Owner further asserts, Paper No. 8 at 24, that "there are settled expectations of the parties that the '301 patent is valid and enforceable." While this factor, enumerated in the Director's memo, is not explained in detail, it only makes sense in the context of an implicit or explicit understanding that ***both*** parties regarded the claims as valid, e.g., as reflected in a license agreement. It cannot be the case that a never-asserted patent achieves a patina of validity simply by the passage of time.

Moreover, Petitioner had no expectation or belief that the '301 patent was or is valid. Apart from Patent Owner's letter sent to a different entity just prior to suit, Petitioner was unaware of the '301 patent until the parallel proceeding was filed.

Finally, Patent Owner contends that the absence of a change in the law affecting patentability supports discretionary denial. Yet withdrawal of the previous *Fintiv* guidance constitutes a significant change in the relevant law, potentially greatly reducing the utility of the IPR procedure by elevating timing considerations over the importance of previously unseen prior art that supports a compelling ground for invalidity. In view of the strong merits of this challenge, this factor is neutral.

B. The Merits of the Petition Are Compelling

1. The Prior Art Anticipates Under a *Philips*-type Construction

Patent Owner's criticisms of prior art relied upon in the Petition hinge on Patent Owner's contention that the "top surface" of the carrier is single level of a single supporting structure. That contention is wrong. As discussed in the Petition, Paper No. 2 at 8-11, the "top surface of the end of the carrier" should be construed as the ***topmost*** surfaces on which the light receiving chip (i.e., the transimpedance amplifier ("TIA"), photodiodes ("PD") and arrayed waveguide grating ("AWG") are located, even if those surfaces are disposed at different levels and/or on different supporting structures. That this is so is demonstrated by the Examiner's January 28, 2019,

rejection noting that "a/the 'top surface of the carrier' need[s] more specificity because this 'top surface' includes 'three distinct surface sections/levels'" that are not in the "same plane," rendering the claims indefinite." *See* Ex. 1002 at 77-84.

Following the submission of the Patent Owner's Amendment of April 29, 2019, the Examiner issued a Notice of Allowability stating that the he was unable to make a prima facie case of obviousness in which the TIA and the PD "are disposed ***directly*** on the same surface of the end of the carrier (left end/side in Fig. 1 ***same*** surface." Ex. 1002 at 37 (emphasis in original).

Having secured allowance of the '301 patent on the basis that all of the components (TIA, PD, AWG) are ***disposed directly on the same surface***, Patent Owner in the now-stayed district court litigation against Petition urged the Court to adopt a "plain and ordinary meaning" construction of "carrier" as "***one or more components for supporting ROSA components*** such as an AWG." Paper No. 2 at 11; Ex. 1011 at 6. Under that plain and ordinary meaning, the basis of allowance for the claims of the '301 patent – that all components are ***disposed directly on the same surface*** – vanishes! Had Patent Owner not obfuscated the meaning of the phrase "top surface of the carrier," the Examiner would not have allowed the claims of the '301 patent. Paper No. 2 at 9-11; Ex. 1003, ¶¶ 64-66.

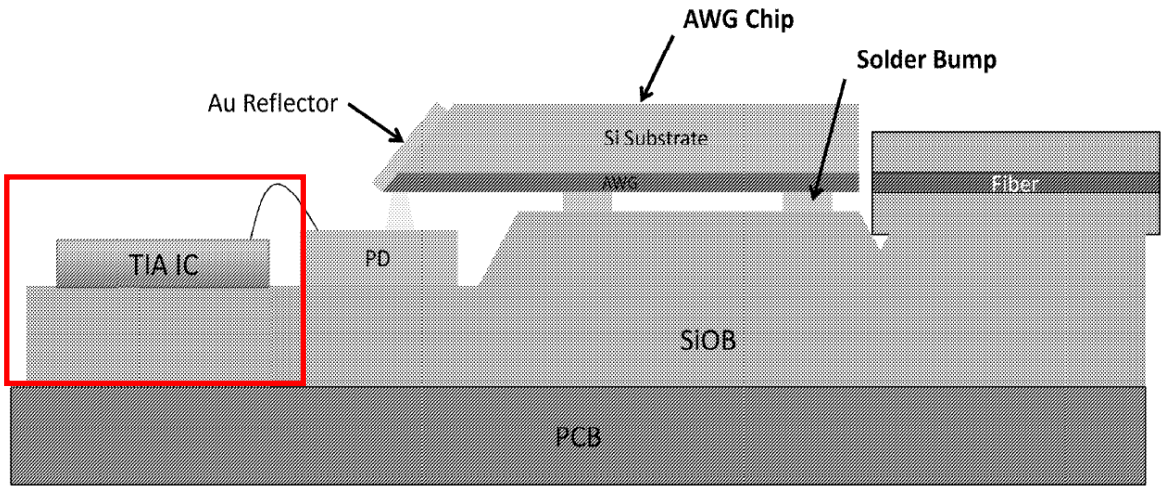
Claims "***shall be*** construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. §282(b)." 37 C.F.R. §42.100(b) (Nov. 13, 2018) (emphasis added). Accordingly, this Board is required to use the ***same*** construction as the Court would use in district court litigation.

It is clear in hindsight that the Examiner materially erred in allowing the claims of the '301 patent as there was no "meeting of the minds" between the Examiner and Patent Owner regarding the basis of allowance. Or less charitably, Patent Owner chose not to correct the Examiner that he misunderstood the import of the claim amendments submitted in Patent Owner's Amendment of April 29, 2019. Accordingly, the Board should apply Patent Owner's construction for "top surface of the carrier" asserted in the parallel proceeding to curtail Patent Owner's further abuse of the patent system.

The Examiner also materially erred in allowing the claims by failing to understand the significance of dependent claim 2 and its interaction with claim 1. Specifically, as discussed in the Petition, Paper No. 2 at 21, claim 2 ***redefines*** the "carrier" of claim 1 to include a portion of a circuit board, such that the "end of the carrier" need not actually be the "carrier" at all, but only ***an adjacent surface***. Claim 2 further recites that neither the light receiving circuit nor the photodetectors need be located on the "carrier", but instead could both be "directly disposed on the circuit board." *See also* Ex. 1003, ¶¶ 92-94. Claim 2 cannot be reconciled with the basis of

allowance described in the Notice of Allowability because the "end of the carrier" may include a portion of a circuit board as a separate supporting structure. Claim 2 highlights the Examiner's mistake regarding the inventiveness of the claims.

Still further, although Patent Owner argues that the Shen provisional application, Ex. 1008, is "similar" to the Shen publication, Ex. 1007. It is not. The Shen provisional application, which was not before the Examiner, includes highly relevant additional teachings not included in the non-provisional application. One such teaching is Ex. 1008 at 8, which teaches that the "TIA IC may be located on the same substrate (SIOB) with [the photodetectors] PD, or located on the PCB and connected the PD on SIOB through wire bonding." Exhibit 1008 at 6 shows the TIA IC disposed on the PCB and the PD disposed on the SIOB. The foregoing teaching of the Shen provisional results in modification to the figure, Ex. 1008 at 6, as shown below, ***in which all of the TIA, PD and AWG are disposed directly on the same surface***.



Patent Owner suggests, Paper No. 8 at 20, that the modification in the drawing above somehow originates with Dr. Kirk. It does not. Dr. Kirk bases his statement on the ***express teaching*** of the portion of the Shen provisional application discussed immediately above: "In my opinion, a POSITA ***would have understood the Shen provisional application as explaining*** that it was simply a matter of design choice whether to locate the light receiving chip on the carrier rather than a PCB. See Ex. 1008, pp. 6-8." Ex. 1003, ¶ 82, citing to Ex. 1008 at 6-8. Reasonable minds would not differ on what the Shen provisional says, or what it means. Moreover, Patent Owner's complaint that "Petitioner has failed to show how the Office erred in not finding the claims anticipated as Petitioner's expert opines" is meritless – the critical aspects of the Shen Ex. 1008 are not included in Ex. 1007, and thus were not considered by the Office.

While Patent Owner in Paper No. 8 embraces the prosecution history of the '301 patent to seek to avoid invalidity, Patent Owner argues for a different construction in the infringement context. This Board should apply Patent Owner's construction for "top surface of the carrier" asserted in the district court litigation here because it is the only way the inconsistency arising from claim 2 can be resolved. As construed by Patent Owner in alleging infringement, the arrangements disclosed in both Soldano and Shen anticipate the claims of the '301 patent.

2. The Grounds Of Invalidity Were Not Previously Considered

Patent Owner argues at Paper No. 8, at 17-21, that the Petition "is based in part on art relied upon by the Office in rejecting claims," and thus the factors enumerated in *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH,* IPR2019-01469, Paper No. 6, pp. 7-8 (P.T.A.B. Feb. 13, 2020) (precedential) favor discretionary denial. This case bears little resemblance to *Advanced Bionics* for several reasons. First, the Shen publication was not considered by the Examiner as an anticipatory ground of rejection, only in a multi-reference obviousness combination. Second, highly relevant aspects of the Shen provisional application were not before the Office. And third, Patent Owner did not apprise the Examiner that the reasons for allowance stated in the Notice of Allowability were incorrect, inconsistent with Patent Owner's understanding of the claims, and irreconcilable with dependent claim 2.

There is no suggestion in *Advanced Bionics* that, at the time of allowance, the Examiner had an entirely different understanding of the claims than the Patent Owner. The Examiner never considered patentability of the claims of the '301 patent on the basis of the meanings Patent Owner now asserts in the parallel proceedings (and which apply here). As explained above, the Examiner had a very different understanding of the claims than the Patent Owner, one which conflicts with dependent claim 2.

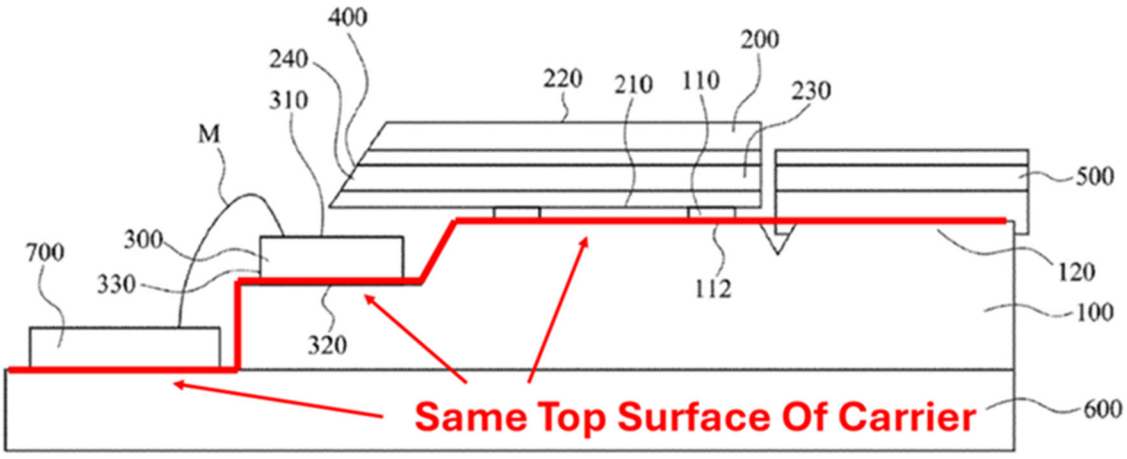
Moreover, the anticipatory disclosure of the Shen provisional application, Ex. 1008, was not before the Office.

With respect to Soldano, Patent Owner acknowledges that U.S. patent application publication was identified in a Disclosure Statement but never applied in a rejection. As noted in *Advanced Bionics*, IPR2019-01469, Paper No. 6 at 10, "if the record of the Office's previous consideration of the art is not well developed or silent, then a petitioner may show the Office erred by overlooking something persuasive under factors (e) and (f)." In this case, there is no evidence that the Examiner evaluated any of the prior art in the manner in which Patent Owner now construes "top surface of the carrier" for purposes of infringement. Instead, the Notice of Allowability shows that the Examiner had a very different understanding of the claims at the time of allowance – one not shared by Patent Owner then or now.

Had the Patent Owner informed the Examiner that the Office's interpretation of "top surface of the carrier" need not be a single surface or even the same supporting structure, the Examiner might never have allowed the claims. The Examiner therefore erred in relying on Patent Owner's argument and amendments, which positions Patent Owner promptly jettisoned after obtaining allowance of claims 1-7.

3. Shen Has All Required Components On the Same Top Surface

Patent Owner's proposed construction of the term "carrier" presented to the district court is "***one or more*** components for supporting ROSA components such as an AWG." Paper No. 2 at 11 (emphasis added); Ex. 1011 at 6. The Petition is based on ***Patent Owner's*** construction in the parallel proceeding. Paper No. 2 at 11. The Petition identifies Shen's substrate 100 and PCB 600 as the "carrier," which is consistent with Patent Owner's construction for carrier and also claim 2, which recites that the carrier may comprise separate supporting structures. Paper No. 2 at 16-17. Thus, the top surface of the carrier is identified as indicated in the annotated figure below:



Paper No. 2 at 19; *see also* Paper No. 2 at 10-11 (noting that the phrase "the same top surface of the end of the carrier" should be construed to mean "the topmost surface of the carrier" without respect to whether that surface has a single or multiple elevations).

Based on Patent Owner's construction, the Petition explains how the optical detector (e.g., photodiodes) (300) and the light receiving chip (700) are located directly on the same top surface of the end of the carrier, as shown in the annotated figure above. Paper No. 2 at 18.

Confronted with a compelling ground of anticipation, Patent Owner asserts that the Petition "improperly combines substrate (100) and PCB (600) of Shen as a carrier." Paper No. 8 at 32. Patent Owner offers no explanation as to why its proposed *Philips*-type construction of "carrier" is inapplicable in this IPR, nor would such an explanation be sufficient. *See* 37 C.F.R. §42.100(b) (Nov. 13, 2018) (in an IPR, claims "shall be construed 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)").

Patent Owner further contends that even if the PCB (600) and substrate (100) were combined to form the carrier, the light receiving chip (700) and optical detector (300) still are not on the same top surface of the carrier, and also asserts that the light receiving chip (700) "is also not at the end of the carrier as required." Paper No. 8 at 33. That argument lacks merit. As discussed above with respect to claim 2, the "carrier" may comprise not only different elevations, but distinctly different supporting structures, e.g., the carrier and a portion of a circuit board. As explained in the Petition, in the annotated figure above, both light receiving chip (700) and optical detector (300)

are on the same top surface of the carrier, with the light receiving chip (700) at the end of the carrier (the left end of the annotated figure above). As carrier is construed by Patent Owner, the TIA, PD and AWG components all are on the "top surface of the carrier." Patent Owner's attorney argument to the contrary is entitled to no weight. *See Johnston v. IVAC Corp.*, 885 F.2d 1574, 1581 (Fed. Cir. 1989) ("Attorneys' argument is no substitute for evidence."); *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997).

Petitioner's invalidity analysis based on Patent Owner's litigation claim term constructions and Shen, Exs. 1007 and 1008 is compelling and was never considered by the Office. The strong merits of this anticipation ground of unpatentability does not support Patent Owner's request for discretionary denial.

4. Soldano Anticipates the Claims of the '301 Patent

Patent Owner's arguments against Soldano fare no better than its arguments against Shen. Patent Owner's arguments are based on the same notion that Patent Owner is entitled to one claim construction for its validity analysis and another conflicting, different claim construction for infringement. That is not the law. Applying a *Philips*-type construction in this IPR, as urged by the Patent Owner before district court, results in clear anticipation by Soldano.

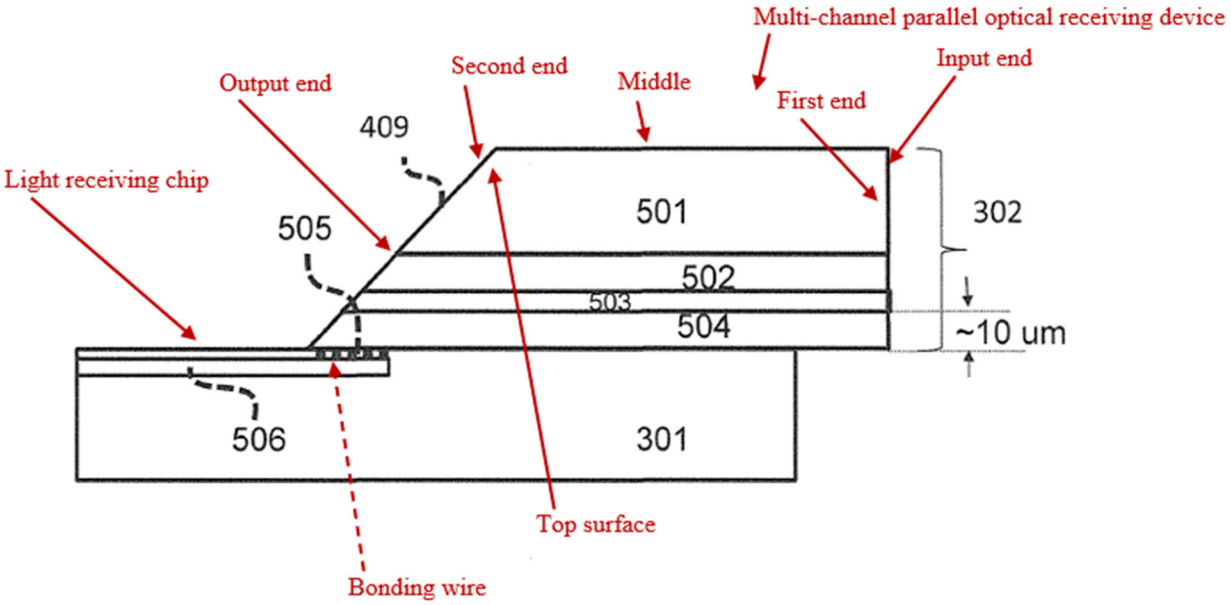
Patent Owner's description of Soldano focuses on the use of grating couplers to receive light exiting the arrayed waveguide grating. But, as discussed in the Petition, Paper No. 2 at 15 and 24-25, Soldano describes an alternative embodiment in which the ***grating couplers are replaced by photodetectors that receive light directly from the channel wavelength waveguides*** of the AWG. *See* Ex. 1009, 10:10-19. Moreover, as explained in that passage, Ex. 1009 at 10:10-19, Soldano includes a "light receiving circuit," i.e., a TIA, describing that "[t]he photodetector would then be electrically connected to the transimpedance amplifier." Accordingly, a POSITA would have understood from the express teaching of Soldano that the photodetectors would be connected to the light receiving circuit (i.e., TIA) via wirebonds. Ex. 1003, ¶ 111. Patent Owner's analysis, Paper No. 8 at 33-36, ignores this disclosure of Soldano.

Patent Owner's further criticism that Soldano fails to disclose a light receiving circuit is refuted by the reference. Patent Owner's quotation, Paper No. 8 at 37, refers to an alternative embodiment of Soldano that may employ an external TIA, described at Ex. 1009 at 10:54-60, but ignores the explicit disclosure of that Soldano teaches the use of a TIA as part of chip 301. *See* Paper No. 2 at 25, citing Ex. 1009 at 8:14-20 ("The four wavelength channels enter the silicon photonic chip through separate grating couplers, each of which is optimized for that particular wavelength of light. For each channel, the light then goes into an integrated photodetector on the silicon

photonics chip and is converted into an electrical signal and electrically amplified by a subsequent TIA (transimpedance amplifier)"); Ex. 1003, ¶ 110.

Patent Owner's contention also ignores the disclosure of the alternative embodiment in Soldano at 10:10-19: "the light in the glass PLC 302 could be deflected down by the side polish 409 and instead of hitting a grating coupler 505 and entering a waveguide 506, could instead hit a photodetector 15 that would be placed in lieu of the grating coupler 505. The photodetector would then be electrically connected to the transimpedance amplifier. This may be simpler than the light first going via a grating coupler to a waveguide and then to a photodetector." As demonstrated by the foregoing passages, a POSITA would have understood Soldano to teach inclusion of a transimpedance amplifier to amplify the output of the photodetectors.

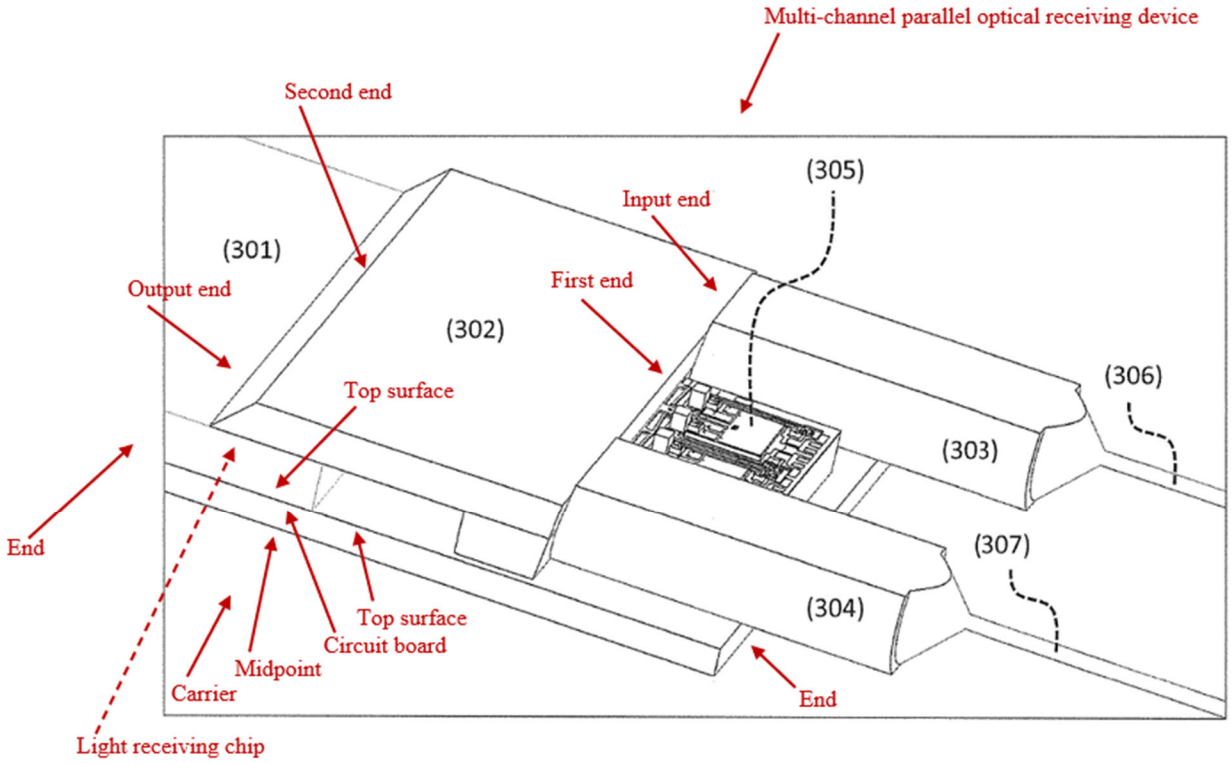
Patent Owner next objects that Soldano does not disclose that the light receiving chip and photodiodes are "disposed on a top surface of an end of the carrier." Paper No. 8 at 36-38. As set out in the annotated figure below, both of these components are disposed on the top surface of an end of a carrier (silicon photonics chip 301) in the alternative embodiment of Soldano in which the grating couplers are replaced by photodetectors.



Paper No. 2 at 24-25.

Patent Owner's argument relies on its validity-induced construction that the TIA, PD and AWG all must be disposed on the "top surface" of the carrier. But as explained *supra*, Patent Owner's construction of carrier does not require that the "top surface" be at the same level, or even be located on the same supporting structure. Instead, in accordance with the construction urged by Patent Owner in the parallel district court proceeding, there is no reason why the photodetector and TIA should not be viewed as located on the top surface of the chip 301, albeit at a slightly lower level than the AWG, as illustrated above. Applying Patent Owner's *Philips*-type construction of the claim terms, Soldano discloses the claim limitation "wherein the optoelectronic diodes and the light receiving chip are disposed directly on the same top surface of the end of the carrier." Paper No. 2 at 25.

Patent Owner similarly argues, Paper No. 8 at 40, that the AWG of Soldano is not disposed on the top surface of that carrier that defines the *midpoint* of the carrier. Relying solely on attorney argument, Patent Owner takes issue with the placement of the arrow labeled "Midpoint," arguing that "the grating couplers 505 (below the 'Output end') are near what Petitioner has identified as the 'midpoint' as shown in Petitioner's annotated Figure 3." Paper No. 8 at 39. As depicted in the Petition, Petitioner identified the light receiving chip at or near the location of the left end of the carrier:



Petition at 15. To the extent that the arrow labeled "Midpoint" points to the left of the area centered between each of the two arrows labeled "End" in Petitioner's annotated

figure, such an indication has no bearing on the proximity of the light receiving chip to the left end of the carrier. Patent Owner's argument regarding this limitation therefore lacks merit. A POSITA would see no inventive contribution to the art arising from mere placement of the AWG on its supporting structure. *See* Ex. 1003, ¶ 87.

The totality of Patent Owner's arguments regarding the merits of the Soldano ground of the Petition lack merit, and accordingly, this factor does not support Patent Owner's request for discretionary denial.

C. The Process Set Out In Exhibit 2001 May Violate the APA

Petitioner submits that the Director's Memo dated March 26, 2025, Exhibit 2001, may violate the Administrative Procedures Act ("APA") because it exceeds the Director's authority and may violate the America Invents Act ("AIA").

The AIA does not specifically authorize the Director to deny IPR petitions based on the factors set forth in Ex. 2001. The PTAB's application of the *Fintiv* factors arguably has already led to unpredictable outcomes among similarly situated IPR petitioners. Ex. 2001 appears to exacerbate that problem by introducing several additional, highly malleable factors. For example, with respect to the guidance provided in Ex. 1013 for expert testimony, Petitioners may face discretionary denial for having either ***too much*** or ***too little*** expert testimony – literally, a "Goldilocks'

problem." The PTAB guidance on expert testimony leaves too great a hazard for Petitioners to "guess wrong," with dire results.

Further, the procedure set out in Exhibit 2001 may be procedurally invalid because it was issued without complying with the notice-and-comment rulemaking requirements of the APA. *See* 5 U.S.C. § 553(b), (c); 35 U.S.C. §§ 2(b)(2), 316(a).

And finally, discretionary denial is not specifically authorized for any basis other than set forth in 35 U.S.C. § 314(a). The Director lacks absolute discretion regarding whether to institute an IPR; instead that discretion is limited to the bases authorized in 35 U.S.C. § 314; 35 U.S.C. § 316(a)(2). *Cf., SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 363-364 (2018). For these additional reasons Petitioner requests that the Director deny Patent Owner's request for discretionary denial.

III. CONCLUSION

Petitioner respectfully requests that the Director deny Patent Owner's request for discretionary denial.

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CERTIFICATION UNDER 37 C.F.R. § 42.24

Petitioner certifies that the word count in this Petition is 5,730 words, as counted by the word-processing program (Microsoft Word for Office 365) used to generate this paper, where such word count excludes the table of contents, table of authorities, mandatory notices, certificate of service, appendix of exhibits, and this certificate of word count. This paper is in compliance with the 14,000-word limit set in 37 C.F.R. § 42.24(a)(1)(i).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e), 42.105, the undersigned hereby certifies that true and correct copies of the above-captioned PETITIONER'S OPPOSITION TO PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL OF INSTITUTION and all associated exhibits were served in their entireties on May 27, 2025, upon the Patent Owner at the correspondence address of record for the subject patent as listed on the USPTO's Patent Center via Priority Mail Express®:

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