

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

APEX BEAM TECHNOLOGIES LLC,
Patent Owner

Case IPR2025-00911
U.S. Patent No. 11,637,615

**PETITIONER'S OPPOSITION TO PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL**

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- EX1138 Expert Market Research, “Top 15 5 G Infrastructure Companies in the World | 2025,” *Expert Market Research*, available at <https://www.expertmarketresearch.com/blogs/top-5g-infrastructure-companies>
- EX1139 Bertenyi, Balazs, “3GPP system standards heading into the 5G era,” 3GPP (Jul. 16, 2014), available at <https://www.3gpp.org/news-events/3gpp-news/sa-5g#:~:text=3GPP%20standards%20have%20played%20a,was%20finalized%20in%20December%202008>
- EX1140 China Academy of Telecommunications Technology (CATT). Draft Reply LS on NR QoE KPI Requirements. 3GPP TSG RAN1 Meeting #89, R1-1707475, 3GPP, 15-19 May 2017. <https://www.3gpp.org>
- EX1141 RESERVED
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- EX1148 “Apple Increases U.S. Commitment to \$600 Billion, Announces American Manufacturing Program.” Apple Newsroom, Apple, 6 Aug. 2025, <https://www.apple.com/newsroom/2025/08/apple-increases-us-commitment-to-600-billion-usd-announces-ambitious-program/>
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I. INTRODUCTION

Petitioner Apple Inc. (“Apple”) opposes Patent Owner Apex Beam Technologies LLC’s (“ABT”) Request for Discretionary Denial (Pap. 7, “Request”). ABT’s Request focuses largely on just two discretionary doctrines: (1) settled expectations, and (2) *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Pap. 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). But under all relevant considerations, denial of institution is simply inappropriate under either doctrine, and factors that were not addressed by ABT further demonstrate why *inter partes* review would constitute an efficient and otherwise appropriate use of Office resources.

Institution and merits review of the ’615 patent (one of 17 patents asserted in co-pending litigation¹ (collectively “Asserted Patents”)) provides timely clarity on the scope and validity of rights purported to cover 5G-standard implementations—clarity that enables efficient planning and capital allocation by U.S. manufacturers and investors. Apple is one of these U.S. manufacturers and investors, having recently announced a new \$100 billion U.S. investment through its American Manufacturing Program to build an end-to-end American silicon supply chain and

¹ Sixteen of the 17 patents asserted in the Litigation have been challenged in IPRs by Apple. The sole unchallenged patent is U.S. Pat. No. 11,457,426.

to co-develop and manufacture cellular semiconductor components “crucial for 5G communications” with U.S. partners including Broadcom and GlobalFoundries. *See* EX1048. This brings Apple’s four-year commitment to \$600 billion. If the Asserted Patents are found unpatentable, early resolution avoids wasteful parallel litigation. And, even if found not unpatentable, by engaging in this validity investigation, the Board will provide certainty and guidance that informs U.S. manufacturers and investors. Either way, substantive engagement by the Board helps to inform scaling of U.S. production. In short, referral for merits review advances efficiency and the public interest by reducing friction and enabling informed investment in American manufacturing tied to 5G technologies.

As to settled expectations, the ’615 patent has been in force for only two years, given its issuance in 2023. With so little time since issuance, there can be no reasonable claim of settled expectations, let alone strong settled expectations. *See Advanced Micro Devices, Inc. et al. v. Concurrent Ventures, LLC et al.*, IPR2025-00479 (“AMD”), Pap. 10, at 2 (PTAB Jul. 10, 2025) (“...the challenged patent issued in **2021**,² and Patent Owner has **not** developed strong settled expectations that favor discretionary denial”); *see also Microsoft Corporation v.*

² All emphasis has been added unless indicated otherwise

Edge Networking Systems, LLC, IPR2025-00617, Pap. 12 (PTAB Jul. 31, 2025) (a challenged patent issued in **2021** has “not been in force for a significant period of time”). Indeed, accounting for the recent issue date, Apple’s Petition is an “early challenge” that serves to promote “robust, predictable patent rights,” which “weigh[s] against discretionary denial.” *Microsoft Corporation v. Edge Networking Systems, LLC*, IPR2025-00617, Pap. 12 (PTAB Jul. 31, 2025) (“*Microsoft*”). Apple’s early challenge is presented under the backdrop of more favorable timing than IPR2025-00385, where the proceeding was referred to the merits panel despite trial predating the projected Final Written Decision (“FWD”) deadline by one month. *Zhuhai Cosmx Battery Co. LTD. v. NingDe Amperex Technology Limited*, IPR2025-00385, Pap. 9, at 2-3 (PTAB Jul. 2, 2025) (“*Zhuhai*”) (“[a]lthough there may be some inefficiencies with two proceedings operating in parallel, the early challenges to the patents tip the balance against discretionary denial.”).

As to *Fintiv*, the trial in counterpart district court litigation³ (“Litigation”) is scheduled to occur only after the Board’s deadline to issue a FWD. ABT does not

³ *Apex Beam Technologies LLC v. Apple Inc.*, Case No. 6:24-cv-00223-ADA-DIG (Apr. 29, 2024)

suggest that the district court trial date will be accelerated. To the contrary, evidence establishes a reasonable expectation otherwise, as the median time-to-trial statistics for WDTX resolve to a trial date that is more than two months after the FWD deadline. *See* EX1136, at 37. Further, Apple has eliminated the potential for inefficiencies and duplication by stipulating not to advance references asserted in IPR grounds within invalidity grounds advanced in litigation if, and immediately upon, grant of institution, which confirms substantive PTAB review of the same. Notably, in this regard, Apple’s stipulation is consistent in scope with those endorsed for similar purposes. *See, e.g., Shenzhen Touzhu Technology Co. LTD v. Stratasyss, Inc.*, IPR2025-00438, Pap. 10, at 3 (PTAB Jul. 17, 2025) (“*Shenzen*”); *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00217 (“*Tesla*”), Pap. 9 (PTAB Jun. 13, 2025) (“*Tesla*”). Thus, if instituted, this proceeding would provide a true substitute for litigation.

Apple’s Petition also presents strong merits, as confirmed by prior institution by a PTAB panel based on similar grounds at-issue in this proceeding and involving the same claims. *See Samsung Elecs. Co. v. Apex Beam Techs LLC*, IPR2023-00599, Pap. 1, at 50-83 (PTAB Feb. 28, 2023) (“*Samsung*”) (Chen-based grounds similar to grounds in Petition). Like the petition in *Tesla*, prior institution “counsel[s] against discretionary denial” because it demonstrates PTAB

endorsement of a lack of patentability. *Tesla*, at 2 (“the Board previously determined there as a reasonable likelihood that similar claims...were unpatentable.”).

The appropriateness of substantive PTAB review is reinforced by factors not addressed by ABT, for example: (1) the implicated ’615 patent is one of 17 patents asserted in co-pending litigation, (2) *inter partes* review serves the public interest by enabling centralized review of the Asserted Patents, rather than forcing distinct validity challenges before the district court, and (3) such centralized review is an appropriate use of Office resources, particularly since examination of the ’615 patent was incomplete due to applicant’s failure to attribute third party material. *See* §III, *infra*; *Dabico Airport Solutions Inc. v. AXA Power APS*, IPR2025-00408, Pap. 21 (PTAB Jun. 18, 2025) (“*Dabico*”); *see also Tessel, Inc. v. Nutanix, Inc.*, IPR2025-00322 (PTAB Jun. 12, 2025) (“*Tessel*”) (discretionary denial based on “unfair dealings” when petitioner employees were the inventors). When holistically assessed, the three reasons addressed in §III, *infra*, demonstrate why discretionary denial is not appropriate, and do so independently of ABT’s failure to justify application of discretion to deny institution.

More specifically, the Asserted Patents span 11 families covering diverse subject matter related to wireless technology. ABT acquired the Asserted Patents

from two predecessors—Shanghai Langbo Communication Technology Company Ltd. (“Shanghai”) and PanPsy Technologies, LLC (“PanPsy”), which are identified in the table below:

Shanghai Patents (10 of 16)	10,912,081; 10,462,767; 10,568,113; 11,063,727; 11,374,721; 11,626,904; 10,944,527; 10,951,271; 11,917,581; 11,546,110
PanPsy Patents (6 of 16)	10,979,128; 10,986,695; 11,139,944; 11,637,615; 10,965,434; 11,108,639

As recognized with respect to a dispute involving fewer patents, the “Board is better suited to review a large number of patents involving diverse subject matter.” *Tesla*, at 3; *see also Shenzen*, at 3 (“[t]he large number and vast scope of the patents asserted in the district court litigation weighs against discretionary denial, as the Board is better suited to review a large number of patents involving diverse subject matter.”).

Beyond the large number of Asserted Patents, the efficiencies gained by central review of them, and incomplete examination for the ’615 patent, ABT’s suit against Apple implicates a broad array of technologies. ABT itself characterized the Asserted Patents as relating to “systems and methods for transmission schemes in wireless communication systems.” EX1101, 13. This

subject matter spans multiple technical areas within wireless communications, including paging, beam failure recovery, uplink cancellation, antenna virtualization, scheduling, listen-before-talk recovery, and multi-antenna transmission. *See id.*, 13-17. Given this and ABT’s track record of filing serial lawsuits accusing widely adopted standard-based technologies, the PTAB resolving the patentability of the 17 patents would yield outsized efficiencies relative to dispute resolution through multiple district courts across multiple forums via serial lawsuits. *Berkshire Hathaway Energy Company, et al. v. BirchTech Corp.*, IPR2025-00274, Pap. 23, at 2-3 (PTAB Jul. 2, 2025) (“*Berkshire*”) (finding that “resolving the dispute between the parties at the Office would be more efficient” where “litigation between the parties would proceed to several district court trials in different jurisdictions”).

Finally, observations concerning the conduct of the patent applicants in their dealings with the U.S. Patent and Trademark Office during original prosecution reveal the appropriateness and need for the Office to conduct a substantive review, as requested. Neither Shanghai nor PanPsy participated in the formative 5G standard-setting effort or contributed technical work to 3GPP’s 5G standard. *See* EX1147. Shanghai was founded in 2013—and PanPsy was founded even later in 2020. In offering what it advanced as enabling disclosure for the ’615 patent, the

named inventor found it necessary to copy into the specification technical content that mirrors material authored and published by others throughout the 5G standard-setting process. Yet, the applicants neither informed the Office of the source of this content nor disclosed the existence of the underlying 3GPP work, despite its direct relevance to the subject matter described in the detailed description. This failure to cite and attribute such material deprived the Examiner of critical context that could have materially influenced patentability and inventorship determinations. In acquiring and prosecuting the Asserted Patents under these circumstances, ABT, its predecessors, and the named inventors engaged in conduct inconsistent with the advancement of the technological arts and the integrity of the U.S. patent system—further reinforcing why inter partes review is an appropriate use of Office resources. *See §III.C, infra.*

Based on a holistic assessment of the discretionary factors identified above (and further discussed in this Opposition), exercising discretion to deny institution is not appropriate in this proceeding.

II. DISCRETIONARY DENIAL IS NOT APPROPRIATE

A. Settled Expectations Should Not Lead To Discretionary Denial

1. *ABT Has No Settled Expectations*

a) The '615 Patent Has Been In Force For Less Than Six Years

The '615 patent issued in 2023, and thus, has been in force for less than six years—not long enough to establish a legitimate claim to settled expectations, much less strong settled expectations. *See, e.g., AMD*, at 2 (“Additionally, the challenged patent issued in **2021**, and Patent Owner has not developed strong settled expectations that favor discretionary denial”), at 3 (“most of the challenged patents have not been in force for a significant period of time (issued in 2020, 2020, **2021** and 2024)”) and “Patent Owner has not developed strong settled expectations that favor discretionary denial”); *Zhuhai*, at 2 (“the challenged patents have not been in force for a significant period of time (issued in 2024, 2023 and **2021**), and, accordingly, Patent Owner has not developed strong settled expectations that favor discretionary denial.”). Indeed, relative to the recent issuance, post grant challenges to such young patents have been consistently characterized as “early” and “favor[ing] robust, predictable patent rights and weigh[ing] against discretionary denial.” *See Micron Technology, Inc. v. Yangte Memory Technologies Co. Ltd.*, IPR2025-00190, Pap. 21 at 3 (PTAB Jun. 25,

2025) (patent issued in 2021 deemed “issued recently.”).

b) ABT’s Recent Acquisition Of The ’615 Patent Also Undermines ABT’s Claim Of Settled Expectations

ABT’s recent acquisition of the ’615 patent in 2023 also undermines any claim to settled expectations favoring discretionary denial. ABT’s recent acquisition of the Asserted Patents occurred long after the PTAB became a common venue for efficiently resolving disputes over patent validity. By 2023, the PTAB’s role was well-established, with over one thousand petitions filed that year alone to enable assessment and confirmation of validity across a wide range of technologies, including telecommunications. *See* USPTO, PTAB Trial Statistics FY2021. With reasonable diligence attendant to the patent purchase, ABT could not legitimately conclude that this patent would be free of inquiry into validity, much less free of such an inquiry in the PTAB, a forum created by Congress for precisely the same.

c) ABT Plainly Misapplies Dabico Because It (1) Asserts Priority Date Creates Settled Expectations And (2) Overstates The Importance of *Actual Notice*

Citing to *Dabico*, ABT argues that “strong settled expectations” exist because the ’615 patent claims priority to a provisional application that was filed in 2019. Req., at 10. Despite its citation, ABT’s argument is flatly inconsistent with *Dabico*. The relevant metric was patent issuance—not proclaimed priority to a

foreign application. This stands to reason, as a patent owner cannot reasonably have settled its expectations on an unendorsed, unexamined application still subject to rejection by the Office. Issuance, rather than priority, is the right guidepost for assessing settled expectations. ABT fails to identify any authority suggesting otherwise. Indeed, the challenged patent in *Dabico* claimed priority to a series of applications with the earliest priority date in 2009. Yet, despite the presence of an earlier priority date—thus presenting an option between applying the issue date or an earlier priority date—the *Dabico* decision focused on the issue date.

The language used in *Dabico* further confirms that issue date controls for establishing settled expectations. There, because the challenged patent in *Dabico* had issued in 2017, it had “**been in force** almost eight years, creating settled expectations.” *See Dabico*, at 2. In other words, reference to “almost eight years” implicitly refers to the issue date of the challenged patent in relation to the date of the decision.

ABT further argues that Apple had actual notice of the Asserted Patents since December 2022. *Req.*, at 10-11. ABT’s arguments, however, are inapposite, as *Dabico* makes clear that the distinction between actual notice and constructive notice is not meaningful. *Id.* at 3 (“As such, actual notice of a patent or of possible infringement is not necessary to create settled expectations.”). That is, in *AMD*,

Shenzen and *Zhuhai*, all bearing on patents issued in 2021 or earlier, notice was assumed, and yet, settled expectations were not deemed to be strong nor referral denied. *AMD*, at 2 (challenged patent issued in 2021); *Shenzen*, at 3 (challenged patents issued in 2020, 2020, 2021, and 2024); *Zhuhai*, at 2 (challenged patents issued in 2021, 2023, and 2024).

d) Invalidation Of Related Chinese Patents Contradicts Any Settled Expectations By ABT

Invalidation of Chinese patents related to a subset of the Asserted Patents also contradict ABT's settled expectations and instead confirm the public's settled expectation that challenged claims may be challenged as unpatentable. The China National Intellectual Property Administration (CNIPA) has fully invalidated the patent rights of Chinese counterparts of 6 of the Asserted Patents: U.S. Pat. Nos. 10,912,081 (CN111585736A, CN108882365B), 11,063,727 (CN108023616B), 10,462,767 (CN108923896), 11,917,581 (CN108923896), 10,944,527 (CN108155923), and 11,546,110 (CN108155923). *See* EX1150; EX1151; EX1152; EX1153; EX1154.

The invalidation decisions were issued in May 2023—almost two years before the petition in this proceeding (and all related proceedings). In other words, ABT has been on notice of invalidating prior art before this proceeding, removing any possibility of settled expectations. There is no evidence that ABT has taken

any further action despite being on notice of these invalidations. For instance, ABT has not asked the Office to reexamine any of relevant U.S. patents (10,912,081, 11,063,727, 10,462,767, 11,917,581, 10,944,527, 11,546,110) in light of the prior art considered in the Chinese invalidation proceedings.

2. Regardless Of Settled Expectations, Discretionary Denial
 Would Still Be Inappropriate Due To Material Error By The
 Office

Even if ABT could claim any settled expectations, those expectations are offset and overcome by material error in the examination of the '615 patent. In *Anthony Inc. v. ControlTec LLC* (“*Anthony*”), “challenged patents have been in force for approximately eighteen and seventeen years” did not support discretionary denial because “Petitioner appears to show a material error by the Office.” IPR2025-00559, Pap. 12, at 2 (PTAB Jul. 16, 2025). Here, the '615 patent is more than ten years younger than the patents at-issue in *Anthony*, and thus, any material error in the examination of the '615 patent is a much more “appropriate use of Office resources to review the potential error.” *Id.*

Like *Anthony*, the material errors in examination of the '615 patent results from premature allowance reflecting the Examiner’s lack of appreciation for relevant prior art. *Anthony*, at 2 (noting that “the patent examiner erred by overlooking the teachings of Carter” in issu[ing] a notice of allowance of both patent applications as the first office action). Indeed, at least two material errors

occurred during prosecution of the '615 patent that calls into question the quality of its original examination as described below.

a) Material Error #1: Examiner's Oversight of Cirik

The '615 patent's file history reveals commission of a first material error by the Examiner in allowing the application over Cirik (EX1004)—i.e., the primary prior art reference cited in Grounds 1A-1C of the Petition. Pet., 1-2. Despite applying Cirik to reject a subset of claims in the only Office Action issued during prosecution, the Examiner failed to bring Cirik to bear against dependent claim 5. The Examiner in fact made no prior art rejection against claim 5, thereby inspiring the Applicant to amend the independent claims to incorporate the claim 5 features, which in turn secured allowance of the application. As described further below, however, claim 5 should not have formed a proper basis for allowance of the '615 patent. Indeed, Cirik plainly discloses the claim 5 features, and yet, the Examiner failed to appreciate the relevance of Cirik's disclosure in this regard. The Applicant then compounded the error by not surfacing the relevant disclosure when it amended the independent claims to incorporate the claim 5 features. Original examination of the '615 patent was thus incomplete.

In more detail, the Examiner issued on August 12, 2022 an Office Action that rejected application claims 1, 6-11, and 16-20 as obvious under § 103 over Chen (U.S. Pub. 2020/0243569) and Ozturk (U.S. Pub. 2021/0144760). EX1002,

51-77. Claims 2, 3, 12, and 13 were further rejected as obvious under § 103 over Chen, Ozturk, *and Cirik*. *Id.*, 74-76. Critically, however, the Examiner made no rejection of claim 5 under § 103, which claim was only rejected for obviousness-type double patenting over claims of a pair of ancestors of the '615 patent. *Id.*, 54-65. Dependent claim 5 and intervening claim 2 added the following to independent claim 1:

2. The method of claim 1, wherein:
 - the first random access parameters are for beam failure recovery; and
 - the initiating the first random access process is in response to detecting a beam failure on the primary cell.
5. The method of claim 2, further comprising initiating a third random access process for beam failure recovery after the second random access process is successfully completed.

EX1002, 281.

On November 14, 2022, the Applicant responded to the Office Action by incorporating the subject matter of claim 5 into the independent claims, and on this basis, proclaimed that, as amended, “independent claim 1 is patentable over the cited art”:

1. (Currently Amended) A method comprising:
 - receiving, by a wireless device, configuration parameters comprising first random access parameters, for beam failure recovery, and second random access parameters;
 - initiating, based on the first random access parameters and in response to detecting a beam failure, a first random access process on a first bandwidth part (BWP) of a primary cell;
 - stopping the first random access process in response to triggering consistent listen-before-talk (LBT) failure for the primary cell;
 - switching from the first BWP to a second BWP of the primary cell as an active BWP;
 - and
 - initiating a second random access process on the second BWP for consistent LBT failure recovery and based on the second random access parameters[.]; and
 - initiating a third random access process for beam failure recovery after the second random access process is successfully completed.

EX1002, 31.

Barely three weeks following the Applicant's response, the Examiner mailed a notice of allowance on December 5, 2022 agreeing that the claims as amended were allowable. EX1002, 13-17.

Despite the Examiner's swift action in mailing a notice of allowance, closer inspection shows that allowance was mailed in error. Although the Examiner had applied Cirik in rejecting application claims 2, 3, 12, and 13, the Examiner failed to appreciate that Cirik's disclosure is equally relevant to claim 5. For example, Cirik explicitly discloses that "the wireless device may suspend the (ongoing) beam failure recovery procedure until the LBT failure recovery procedure is completed" and that "the wireless device may *resume the (ongoing) beam failure*

recovery procedure based on (e.g., after) the LBT failure recovery procedure being completed.” EX1005, [0310].⁴ Cirik also explains that resuming a beam failure recovery procedure involves initiating a third random access process. *See, e.g.,* EX1005, [0162] (“The contention-free random access procedure ... may be initiated for a beam failure recovery.”). Cirik thus specifically discloses “initiating a third random access process for beam failure recovery after the second random access process is successfully completed,” as originally recited in claim 5 and later incorporated into the other claims. For additional context, the Petition and Dr. Akl analyze the relevance of Cirik’s disclosure to this feature in even further detail. Pet., 32-34; EX1003, ¶¶80-82.

In short, the ’615 patent issued on the mistaken assumption that the prior art of record before the Examiner—including Cirik—lacked disclosure of the claimed “third random access process.” This mistaken assumption manifested as material error when the Examiner agreed to allow the application based on the amendment of these features into the independent claims. Referral of the present Petition is warranted to provide the Office with an opportunity to reconsider Cirik and correct

⁴ EX1005 is Cirik’s provisional application. Cirik (EX1004) incorporates the provisional by reference in its entirety. *See* EX1004, [0001]; Pet., 12.

the error committed during original examination.

b) Material Error #2: The Applicant/Inventor Failed to Apprise the Examiner of InterDigital, The Most Pertinent 3GPP Prior Art Submission

The second material error arose resulted from prosecution conduct of the sole inventor and original applicant of the '615 patent, Alireza Babaei. Babaei's conduct deprived the Examiner of opportunity to consider the highly pertinent teachings of InterDigital (EX1007) during prosecution of the '615 patent.

As described in further detail below (*infra*, §III.C.1), the '615 patent claims are generally directed to a three-step process for addressing a listen-before-talk ("LBT") failure detected during beam failure recovery: (1) stopping the ongoing random access process, (2) switching to a new bandwidth part ("BWP"), and (3) initiating a new random access process. EX1001, 3:24-32, 27:28:2, FIG. 29. As Dr. Akl testifies, however, this same process including the stopping, switching, and initiating steps had been publicly disclosed three weeks before Babaei filed the '615 patent's provisional application in the InterDigital reference, i.e., a 3GPP proposal (R2-1914882, "Handling UL LBT Failures in MAC") submitted shortly before 3GPP's RAN2#108 working group meeting held from November 18-22, 2019. EX1003, ¶¶130-131, 141, 159-164; *see also* EX1146. Indeed, InterDigital explicitly addressed recovery from an LBT failure in the same way as the '615 patent, as illustrated below:

“It should be noted that the consistent UL LBT failure can be detected as part of a given random access procedure, in which case the UE will switch to another BWP with PRACH configured after detection. **It’s worthwhile to clarify that the UE should initiate a new RA procedure upon switching to another BWP, i.e. to ensure the preamble counter and the power ramping counter are reset. Upon BWP switching caused by detection of consistent uplink LBT failures on SpCell, the MAC entity shall therefore stop the ongoing RA procedure -if any- and initiate a new RA procedure on the active BWP.”**

“Proposal 2: After BWP switching caused by detection of consistent uplink LBT failures on SpCell, MAC shall stop any ongoing RA procedure and initiate a new RA procedure.”

EX1007, § 2.2; *infra*, §III.C.1 (side-by-side comparison of claim 1 of the ’615 patent to InterDigital’s disclosure).

While Babaei cited numerous other 3GPP proposals relating to LBT failures in an IDS, he conspicuously omitted from the IDS the InterDigital proposal despite its unique relevance to the subject matter claimed in the ’615 patent. *See* EX1002, 110-16; Pet., Grounds 1C, 2A, 2B (mapping prior art combinations based on the InterDigital proposal to the ’615 patent claims). By incorporating and claiming

technical proposals from InterDigital in the '615 patent without identifying the source, Babaei denied the Examiner the opportunity to consider the most pertinent 3GPP prior art during prosecution. Apple's Petition for *inter partes* review of the '615 patent presents the Office with an important opportunity to at least partially rectify Babaei's prosecution conduct and re-consider the patentability of the '615 patent claims with the benefit of InterDigital's teachings. Referral is appropriate for this additional reason.

B. Discretionary Denial Under *Fintiv* Is Inappropriate

1. The Fintiv Factors Do Not Support Discretionary Denial

As discussed below, holistic weighing of the *Fintiv* factors favor institution. *Fintiv*, Pap. 11 (PTAB Mar. 20, 2020) (precedential).

a) Factor 1—Neutral—No Stay Has Been Requested In the Litigation

Because no motion to stay has been filed (Factor 1), the outcome of a motion to stay cannot be inferred, nor the existence of stay known. *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Pap. 24, at 7 (June 16, 2020) (informative). This factor is therefore neutral.

b) Factor 2—Favors Referral—The Final Written Decision is Likely To Issue Before The Scheduled Trial Date

While ABT points to a scheduled trial date of December 7, 2026 (Req., at 6;

Ex. 2001), ABT acknowledges the trial is scheduled to begin several weeks after the FWD deadline. And with so many patents asserted, it is likely that the patents would be tried in tranches—or even tried at all (depending on how many patents actually remain by trial). Moreover, accounting for the median time-to-trial statistics in the Western District of Texas (WDTX), trial is more likely to occur in January 2027 or later—well after the projected FWD deadline of November 18, 2026. *See, e.g., Zhuhai Cosmx Battery Co., LTD. v. Ningde Amperex Technology Limited*, IPR2023-00587, Pap. 12, at 11 (PTAB Sept. 22, 2023) (considering statistical data showing delays in trial schedules when weighing proximity to FWD). Even if trial were to conclude as scheduled, disposition of post-trial motions may take 9-10 months⁵ such that final resolution of the Litigation would extend well beyond the FWD deadline. These trial and post-trial expectations tip Factor 2 against denial.

⁵ *See, e.g., ACQIS LLC v. ASUSTeK Computer, Inc.*, No. 6:20-cv-00966 (W.D. Tex.) (approximately 10 months between verdict in March 2024 and final judgment in January 2025), and *VideoShare, LLC v. Google LLC*, No. 6:19-cv-00663 (W.D. Tex.) (approximately 9 months from verdict in November 2021 to initial judgment in August 2022)

Even if trial were to occur slightly before FWD (and there is no reason to believe that will occur here given the scheduled trial date), early challenge to recently-issued patents tips the balance against discretionary denial. Indeed, in *Zhuhai*, a FWD was expected to issue one month *after* the trial in the counterpart litigation, and yet, discretionary denial was not deemed appropriate because “early challenges to the patents **tip the balance** against discretionary denial.” *Zhuhai*, at 2-3. Here, Apple’s Petition similarly represents an early challenge (within 6 years of issuance) to the ’615 patent, which tips the balance against discretionary denial, even if trial were to occur before the FWD and result in some inefficiencies with two proceedings operating in parallel.

Factor 2 therefore favors referral for merits consideration.

c) Factor 3— Favors Referral—Minimal Relevant Investment By The Parties And Expeditious IPR Filing

Investment in the district court proceeding remains low because discovery has not begun. This weighs against discretionary denial as IPRs can inform ongoing litigation. *See, e.g., Crowdstrike Inc. v. Webroot, Inc.*, IPR2023-00126, Pap. 9, at 10 (PTAB May 5, 2023) (early-stage investment weighs against denial).

ABT’s own conduct confirms the lack of meaningful investment. Although it previously asserted the ’615 patent against a different defendant, it took no steps to diligently prosecute its claims until filing suit against Apple. And in its suit

against Apple, ABT delayed more than ten months in filing a Case Readiness Status Report (CRSR) after it was permitted under the court's Order Granting Procedure (OGP) to do so.⁶ This abject failure, and refusal to move the Litigation forward, suggests ABT itself did not consider expeditious resolution of the '615 patent a priority, and it cannot now credibly argue that the district court proceeding reflects substantial investment.

Apple's Petition was also timely under § 315(b), and ABT fails to demonstrate any evidence of gamesmanship in any perceived delay of filing. Rather, the timeline to filing reflects Apple's good-faith efforts to engage in FRAND negotiations. Multiple IPRs also promote efficiency by addressing related patents cohesively.

Fintiv Factor 3 therefore favors referral for merits consideration.

⁶ ABT's timeline to file the CRSR was triggered by Apple's response to the complaint by July 19, 2024. ABT then delayed filing to May 20, 2025. This delay matters because the CRSR is the trigger for the WDTX patent OGP's milestones and deadlines.

d) Factor 4—Favors Referral—Apple’s Broad Stipulation Eliminates Overlap of Issues Between The IPR And The Litigation

Apple has filed a broad stipulation that mitigates concerns about duplicative efforts, committing not to pursue in the Litigation any invalidity grounds based on printed publications or patents that could have been raised in the IPR. EX1102.

This stipulation extends beyond *Sotera* to include “combinations of the prior art references asserted as part of a ground in this proceeding with unpublished system prior art or any other type of prior art,” thereby avoiding duplication of effort and inefficiencies by ensuring minimal overlap even if litigation is not stayed upon institution. That is, the stipulation also addresses combinations of the prior art references asserted as part of a ground in this proceeding with system prior art, thereby addressing the efficiency concerns raised in *Motorola Solutions, Inc. v. Stellar, LLC*, IPR2024-01205, Pap. 19, at 4 (PTAB Mar. 28, 2025) (“*Motorola*”).

Fintiv Factor 4 therefore favors referral for merits consideration.

e) Factor 5—Neutral—The Parties Are The Same In The IPR And The Litigation

While the parties in the Litigation are the same as here (Factor 5), this factor alone does not favor denial, particularly where, as here, the Petition demonstrates strong merits of unpatentability.

f) Factor 6— Favors Referral—The Merits Of The Petition
Are Strong

As set forth in the Petition, the '615 patent claims are plainly unpatentable over Cirik, Wu, and Interdigital. In contrast, during original examination, the Examiner allowed the application after a single Office Action, and there is no indication within the file history that allowance was based on any substantive application of the prior art applied in the grounds advanced in the Petition. *See* Pet., 7-9; EX1002, 13-17, 30-47, 51-77. Indeed, the applicant secured allowance of the underlying application by incorporating in the broadest claims the features originally recited in a dependent claim that had been identified as allowable in the Office Action, save for a double patenting rejection. EX1002, 31, 281. The implicated dependent claim recited, in part, “initiating a third random access process for beam failure recovery after the second random access process is successfully complete,” but those features had been earlier disclosed in the prior art cited in the Petition, including Cirik. Pet., 32-34. The grounds are strong and *Fintiv* Factor 6 favors referral for merits consideration.

g) Holistic Evaluation Of All Factors

As discussed above, each *Fintiv* factor is either neutral or favors referral, and thus, all *Fintiv* factors weigh against denial on discretion. Decisions on discretion recently issued in *Shenzen* and *Tesla* further confirm that it would be inappropriate

to exercise discretion based holistic weighing of the *Fintiv* factors in this case.

More specifically, in *Shenzen*, petitioner’s “broad stipulation” was found to weigh against discretionary denial given a complex counterpart litigation involving nine patents spanning six distinct families. *Shenzen*, at 3. In *Tesla*, the petitioner similarly filed a “broad stipulation” in relation to a counterpart litigation involving eleven patents spanning nine different families. *Tesla*, at 2-3. The facts are even more favorable in this proceeding, as Apple has filed a stipulation of similar scope as those filed in *Shenzen* and *Tesla*, and yet, the counterpart litigation is even more complex, involving more (17) asserted patents (16 of which have been challenged in IPRs) spanning across more (11) distinct families. Moreover, as discussed in §§ II.A.2 and B.6, *supra*, the strength of the merits of the grounds advanced in the Petition is similarly evidenced by the Board having previously determined that there is a reasonable likelihood that the very same claims of the ’615 patent were unpatentable based on similar grounds that rely on the same primary reference (Chen). *See Tesla*, at 2 (finding that “merits are strong because the Board previously determined there was a reasonable likelihood that similar claims of an ancestor patent were unpatentable”).

Compared to *Tesla*,⁷ discretionary denial is even less appropriate than in this proceeding for at least two additional reasons:

(1) In *Tesla*, the scheduled trial date unambiguously preceded the FWD by about two months. In contrast, trial in the present proceeding is scheduled after the FWD; and

(2) In *Tesla*, the parties had progressed further in litigation, with the *Markman* Hearing scheduled three months prior to the expected date of an institution decision. In the present proceeding, the parties have substantially less investment in the Litigation, with the *Markman* hearing not scheduled until November 21, 2025, after the November 18, 2025 due date for a decision on institution in this proceeding.

2. *Regardless Of The Fintiv Factors, Discretionary Denial Would Still Be Inappropriate Due To Material Error By The Office*

Even if there are any inefficiencies resulting from parallel litigation, those

⁷ The court has indicated it does not believe that it is fair to a jury to consider more than three patents at a time. *See* EX1158; *see also* EX1159 (example of bifurcation order delineating larger case into tranches). A trial for any given patent across the seventeen patents is therefore likely to occur later than the currently scheduled date.

inefficiencies are offset and overcome by material error in the examination of the '615 patent. In *Microsoft Corp. v. Partec Cluster* (“*Microsoft II*”), “the scheduled district court trial [being] set to precede the expected final written decision due date by a month” did not warrant discretionary denial “because of Petitioner’s showing of material error during patent examination.” IPR2025-00318, Pap. 9, at 3 (PTAB Jun. 12, 2025). Here, the timing is more favorable than *Microsoft II*, as the scheduled trial date of the Litigation is *after* the projected FWD. Thus, any material error in the examination of the '615 patent is a much more “appropriate use of Office resources to review the potential error.” *Id.*; *see also Padagis US LLC v. Neurelis Inc.*, IPR2025-00464, Paper 12, 3 (PTAB Jul. 16, 2025) (“Petitioner appears to show a material error by the Office, and it is an appropriate use of Office” despite “a scheduled district court trial date that precedes the date projected for a Board final written decision”).

Further, as discussed above, the Examiner materially erred by failing to appreciate pertinent art, both as to art in the record during prosecution and not in the record. *Supra*, §II.A.2; *see Microsoft Corp. v. Partec Cluster*, IPR2025-00318 Paper 9, 3 (PTAB Jun. 12, 2025); *Padagis US LLC v. Neurelis Inc.*, IPR2025-00464, Paper 12, 3 (PTAB Jul. 16, 2025).

III. *INTER PARTES* REVIEW IS AN APPROPRIATE USE OF OFFICE RESOURCES

Referral of institution is further appropriate because, as *Dabico* confirms, the application of discretion turns in part on whether instituting review represents an appropriate use of Office resources. Here, various factors discussed, particularly below, make that showing clear. Together, these factors confirm that this proceeding is not only appropriate for PTAB review, but also a prudent use of the Office's resources.

A. Complex Litigation Makes The PTAB Better Suited To Adjudicate Validity

1. The Litigation Involves 17 Different Patents

As noted previously, the Litigation involves 17 patents spanning 11 distinct families, and each of these patents has been in force for less than six years. These circumstances present “a large number” of patents and thus, “the Board is better suited to review” their validity. *See Tesla*, at 3 (litigation involving 11 patents spanning 9 different families). *See also Tesla, Inc. v. US Navy*, IPR2025-00341 (“*Tesla IP*”), Pap. 12, at 2 (PTAB Jun. 13, 2025) (same); *see also Shenzhen*, at 3 (litigation involved 9 different patents spanning 6 different families). The present dispute involves more patents spanning more families than the counterpart litigations implicated in *Tesla*, *Tesla II*, and *Shenzen*. Asking a jury to consider such a large number of patents within a single trial is consequently even more

unreasonable than doing so in each of *Tesla*, *Tesla II* and *Shenzen*. Simply put, the PTAB is better suited to review the validity of these patents. For this reason alone, *inter partes* review in this proceeding is an appropriate use of Office resources.

2. *The Litigation Involves Patents With Diverse Subject Matter*

Beyond the large number of patents implicated, the Litigation is also complex. The technical subject matter spans multiple, distinct technology aspects. This diversity is reflected in 14 distinct base prior art references being applied across the IPR proceedings, each of which further incorporate different prior art combinations tailored to the specific claim limitations at issue. Such variation underscores that the patents do not present a single, unified invalidity theory, but instead require separate and highly technical analyses of discrete functionalities—ranging from physical layer signaling techniques to higher-layer protocol operations. This fragmentation of issues makes it impractical for a lay jury to resolve the full scope of validity disputes in a single trial, while reinforcing that the PTAB, with its technical expertise and ability to adjudicate multiple parallel proceedings, is uniquely equipped to handle the breadth and complexity of these claims efficiently and consistently.

B. Substantive *Inter Partes* Review, Available Only Upon Referral, Would Yield Significant Efficiencies

The PTAB is uniquely situated to provide efficient review of the '615 patent

given the complex validity issues not only at issue in this proceeding, but 18 others implicating other Asserted Patents in the Litigation. *Inter partes* review in this proceeding (and the 18 other proceedings) thereby serves the public interest by centrally settling patent validity, rather than forcing distinct validity challenges before the district court. This promotes the AIA's objectives of improving patent quality and reducing unwarranted litigation burdens on the public and industry participants. *See* 35 U.S.C. § 311; H.R. Rep. No. 112-98, pt. 1, at 48 (2011) (noting role of IPR in providing "a quick and cost effective alternative[] to litigation").

Such centralized review is crucial because ABT's track record demonstrates a propensity to assert the patents against adopters of widely-used standards-based technology. ABT has already established a pattern of aggressive enforcement of the '615 patent and related patents. It has also contended that supporting this 5G standard implicates its patents, and it has repeatedly filed lawsuits targeting companies that make products that do so. The high likelihood of future assertions against entities supporting related wireless communication technologies and the underlying wireless communications standard reinforces the importance of validity investigation of the '615 patent and related patents. Indeed, in enforcing the Asserted Patents, ABT simply accuses the practice of the 5G standard, and it has

already filed 6 distinct district court litigations. Further litigation is, therefore, more than reasonably likely, and addressing validity at the PTAB would serve to resolve a key question that will otherwise need to be addressed multiple times over, in less efficient forums that do not bring the benefit of perspective from highly technical PTAB judges.

According to the Cellular Telecommunications Industry Association (CTIA), the 5G standard, to which ABT claims its patents are essential, is used “all over the country” to “create the future and enhance America’s economic competitiveness” across multiple critical industries, such as healthcare and transportation. *See* EX1137. Institution of this proceeding thereby resolves validity, and in doing so, helps create greater predictability for practicing entities within this technology domain. It further creates significant downstream efficiencies for the Patent Office, the courts, and the public by resolving validity once and for all at a single time in a single forum.

Given the ubiquitous nature of 5G—a global standard supported by billions of devices—the risk of further litigation on this patent is not speculative. It is reasonably foreseeable because patent litigation against companies offering products that support 5G and similar standards has been both serial and prolific. Beyond Apple, numerous other companies publicly profess to manufacture or

implement 5G devices, including but not limited to those against which the patent has been asserted thus far. In alleging infringement by Apple, ABT mapped its asserted patents (including the '615 patent) to "5G standards" and then further identified alleged practicing entities, including "Samsung, TCL, OnePlus, and ZTE..." EX1101, 12 (citing email correspondence from ABT's Managing Director to Apple counsel). These statements reveal ABT's belief that the '615 patent implicates broad adoption by companies for allegedly infringing activity, which have not yet been subject to suit. *See* EX1138. ABT itself has therefore highlighted that its asserted patents, including the '615 patent, purport to cover 5G features. *Id.*

Finally, *inter partes* review of this proceeding is also consistent with recent discretionary guidance regarding counterpart litigation that "would proceed to several district court trials in different jurisdictions..." *Berkshire*, at 2-3. There, such litigation resulted in *inter partes* review being deemed to represent an efficient use of Office resources. ABT's serial litigation activity suggests Apple will not be the last defendant accused of infringement. ABT's assertion of 17 patents, therefore, both in the Litigation and any future litigations against companies supporting 5G wireless communication technology is likely to span multiple district court trials across multiple jurisdictions. Under these

circumstances, “resolving the dispute between the parties at the Office would be more efficient.” *Berkshire*, at 2.

C. Applicant’s Failure To Attribute Third Party Technical Work Warrants *Inter Partes* Review

Inter partes review is also an appropriate use of Office resources in the instant case because, in acquiring the Asserted Patents (including the ’615 patent), ABT, its predecessors, or named inventors conducted themselves in a manner that impeded the substantive examination of the subject patent by the examiner, thus compromising the integrity of this patent and, for that matter, the integrity of the U.S. Patent System.

ABT’s predecessors—Shanghai and PanPsy—did not originate technical content underlying the Asserted Patents. *See, e.g.*, EX1142; *see also* EX1143; EX1144; EX1145; EX1146; EX1147. Instead, they gained access to publicly available technical materials developed by others, incorporated that content into their applications, and presented them to the Office, passing them off as their own without attribution or disclosure of true origin. By failing to inform the Office that the claimed subject matter was derived from prior technical developments authored by third parties, Shanghai and PanPsy deprived the handling examiner of context that should have been made available to inform a fulsome search for prior art and consideration of patentability, both substantively and regarding inventorship. This

conduct is unhelpful, and it threatens the integrity of the patent system, which relies on applicants to disclose material information and claim only what they have truly invented.

Recent decisions on discretion highlight the importance of equity-based considerations in assessing whether to allocate the limited resources of the Office to substantive consideration of IPR grounds that present a basis for unpatentability, e.g., party conduct rising to unfair dealings have been deemed pertinent to the exercise of discretion because such conduct reflects whether *inter partes* review represents an appropriate use of Office resources. While the facts in these decisions happened to implicate petitioner conduct, the theories implicate fairness more generally and beg for considerations of fairness in relation to the conduct of petitioners and patent owners, as it relates to a decision on whether to exercise discretion in denying institution.⁸

⁸ In *Analog Devices, Inc. v. Number 14 B.V.*, IPR2025-00550 (PTAB Jul. 16, 2025) (“*Analog Devices*”), a party’s use of Patent Office resources to apply for and be issued a patent was deemed to preclude later use of Office resources by that same party to advocate for unpatentability of the issued patent. Similarly, in *Tessel*, denial was based on “unfair dealings” when petitioner employees were the

Here, tactics by ABT's predecessors call into question the quality of prosecution earlier performed, and despite this flowing in part from patent applicant conduct, it nevertheless demonstrates that Office resources would be well spent in referring this petition for substantive review of its grounds, if only to promote patent system integrity.

1. 3GPP Contributions Material To Patentability Were Never Disclosed During Prosecution

This record lacks any evidence to establish or suggest that Alireza Babaei—sole named inventor of the PanPsy Patents (U.S. Patent Nos. 10,965,434; 11,139,944; 11,108,639; 10,986,695; 10,979,128; and 11,637,615)—participated in 3GPP standard-setting activities leading to developments advanced and claimed by the '615 patent. *See, e.g.*, EX1142; EX1143, EX1144; EX1145; EX1146; EX1147. Indeed, the record fails to indicate that Babaei attended 3GPP working group meetings, or submitted contributions, nor does the record indicate whether PanPsy appeared as a participant or submitted records of the relevant meetings. *Id.*

inventors. And in *Realtek Semiconductor v. Parkervision*, IPR2025-00324, Pap. 11, at 2-3 (PTAB Jun. 25, 2025), “fairness” and “equity” were invoked to limit joinder for time-barred petitioners, allowing it only in “exceptional circumstances.”

Nevertheless, Babaei accessed publicly available 3GPP technical materials, including proposals and change requests submitted by actual contributors to the standard, and used that material to craft patent applications that misrepresented the true origin of the claimed subject matter.

Babaei’s prosecution conduct with respect to the ’615 patent exemplifies this misconduct. The ’615 patent claims are generally directed to a three-step process for addressing a listen-before-talk (“LBT”) failure detected during beam failure recovery: (1) stopping the ongoing random access process, (2) switching to a new bandwidth part (“BWP”), and (3) initiating a new random access process. EX1001, 3:24-32, 27:28:2, FIG. 29. But this precise stopping/switching/initiating sequence had been publicly disclosed three weeks before the inventor’s provisional filing in a 3GPP RAN2 document, R2-1914882 (“Handling UL LBT Failures in MAC”), submitted by InterDigital. *See* EX1007 (“InterDigital”); *see also* EX1146.

The InterDigital proposal explicitly addressed recovery from an LBT failure occurring during another recovery process, and in fact, described the same three-step procedure later claimed in the ’615 patent:

’615 Patent, Claim 1	InterDigital Proposal, §2.2 (EX1007)
(1) “ stopping the first random access process in response to triggering consistent listen-before-talk (LBT) failure for the primary cell ”	“It should be noted that the consistent UL LBT failure can be detected as part of a given random access procedure, in which case the UE will switch to another BWP with PRACH configured after detection. ”

(2) “switching from the first BWP to a second BWP of the primary cell as an active BWP”	It’s worthwhile to clarify that the UE should initiate a new RA procedure upon switching to another BWP, i.e. to ensure the preamble counter and the power ramping counter are reset. Upon BWP switching caused by detection of consistent uplink LBT failures on SpCell, the MAC entity shall therefore stop the ongoing RA procedure -if any- and initiate a new RA procedure on the active BWP.”
(3) “initiating a second random access process on the second BWP for consistent LBT failure recovery and based on the second random access parameters”	“Proposal 2: After BWP switching caused by detection of consistent uplink LBT failures on SpCell, MAC shall stop any ongoing RA procedure and initiate a new RA procedure.”

Although Babaei cited numerous other 3GPP proposals relating to LBT failures in the IDS, including proposals submitted to the same RAN2#108 3GPP meeting as the InterDigital proposal, Babaei nonetheless omitted from the IDS InterDigital’s proposal—despite its evident relevance to the subject matter claimed in the ’615 patent as suggested by its title (“Handling UL LBT Failures in MAC”). *See* EX1002, 110-16 (IDS dated June 8, 2021 citing a selection of documents submitted during the RAN2#108 3GPP meeting, held during November 18-22, 2019); Pet., Grounds 1C, 2A, 2B (mapping prior art combinations based on the InterDigital proposal to the ’615 patent claims). Thus, by incorporating technical proposals from InterDigital into both the ’615 patent and its priority applications without identifying the source, Babaei denied the Examiner the opportunity to

consider the most pertinent 3GPP prior art, undermining the integrity and completeness of the examination that led to allowance.

ABT seeks to weaponize the ill-gotten PanPsy Patents by targeting adoption of the very standards articulated in 3GPP submissions like the InterDigital proposal that its predecessor claimed through amendment to secure patent rights. This type of hold-up behavior distorts the purpose of the U.S. patent system, discourages transparent participation in standards-setting organizations, and undermines the Office's confidence in the integrity of applicant disclosures. *Inter partes* review is therefore warranted in this proceeding to deter this misconduct and ensure that the Office does not inadvertently reward misattribution and concealment of third-party technical work.

IV. CONCLUSION

For the reasons set forth above, Apple requests denial of Patent Owner's Request for Discretionary Denial.

Respectfully submitted,

Date: August 18, 2025

/W. Karl Renner/

W. Karl Renner, Reg. No. 41,265
Nicholas W. Stephens, Reg. No. 74,320
Joseph W. Bauer, Reg. No. 81,218
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

Attorneys for Petitioner

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24, the undersigned hereby certifies that the word count for the foregoing Petitioner's Opposition to Patent Owner's Request for Discretionary Denial totals 7,896 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Respectfully submitted,

Date: August 18, 2025

/W. Karl Renner/

W. Karl Renner, Reg. No. 41,265
Nicholas W. Stephens, Reg. No. 74,320
Joseph W. Bauer, Reg. No. 81,218
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

Attorneys for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on August 18, 2025, a complete and entire copy of this Petitioner's Opposition to Patent Owner's Request for Discretionary Denial and all supporting exhibits were provided via email to the Patent Owner by serving the correspondence email addresses of record as follows:

Vincent J. Rubino, III (Reg. No. 68,594)
Peter Lambrianakos (Reg. No. 58,279)
Enrique W. Iturralde (Reg. No. 72,883)
Julian G. Pymonto (Reg. No. 75,999)
Jacob D. Ostling (Reg. No. 77,624)

FABRICANT LLP

PTAB@fabricantllp.com
vrubino@fabricantllp.com
plambrianakos@fabricantllp.com
eiturralde@fabricantllp.com
jpymonto@fabricantllp.com
jostling@fabricantllp.com

/Li Feng/
Li Feng
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
lfeng@fr.com