Paper No. 10
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Taiwan Semiconductor Manufacturing Company Ltd.,

Petitioner,

v.

Advanced Integrated Circuit Process LLC,

Patent Owner.

Patent No. 8,198,686
Filing Date: December 2, 2009
Issue Date: June 12, 2012

Title: SEMICONDUCTOR DEVICE

Inter Partes Review No. IPR2025-00682

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

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I. Introduction

AICP's request for discretionary denial should be rejected. When it became clear the parties' efforts to resolve their dispute privately were not progressing, only then did Petitioner TSMC file its Petition. And it did so while the parallel district court case was (as it remains) still in its early stages. By the deadline set for the Board's decision on institution ("DI"), claim construction briefing will not have begun, fact discovery will remain open for more than 3½ months, and expert discovery will not begin until after that, remaining open until 5 months after the DI deadline.

Moreover, TSMC has proffered an exceedingly broad stipulation that removes absolutely all overlap between the IPR and parallel litigation by foregoing all Section 102 and 103 prior art challenges upon institution. United Microelectronics Corporation ("UMC"), which seeks to join this IPR, proffered an equally broad and reciprocal stipulation. Instituting TSMC's Petition would thus provide a true alternative to district court, significantly simplifying the disputed issues in all parallel proceedings. This is what Congress intended when it created the IPR process.

Declining discretionary denial would also protect settled expectations of TSMC and others. Notably, TSMC's accused technology launched ***before*** the '686 patent even existed. For more than a decade, TSMC manufactured the accused

chips without incident, including for American customers who integrate those chips into their own products. Those continuous, uninterrupted activities established settled expectations for TSMC, its customers, and downstream consumers.

Such considerations are all the more important given the nature of the parties and technology. The Administration has prioritized its goal of onshoring semiconductor manufacturing in the United States because semiconductor chips—those made by TSMC, in particular (the most advanced in the world)—are so vital to the U.S. economy, supply chain, and national security. Secretary of Commerce Lutnick recently emphasized such considerations in an interview from TSMC's facility in Arizona, where he was celebrating the latest installment in TSMC's record-breaking $165 billion investment in U.S. manufacturing—the largest direct foreign investment ever in the United States. *See* Ex-1119 ("You're seeing the power of Donald Trump's presidency because TSMC, the greatest manufacturer of chips in the world, is coming to America ….").

The settled expectations at stake are not just those of TSMC, but of the American manufacturers and purchasers that depend on TSMC's technology to preserve America's competitive edge in the technology arms race, including AI. Patent Owner AICP has no comparable expectations. The Administration is best positioned to balance these considerations and address the validity of these patents asserted against an industry of such importance to the economy.

The challenged claims also warrant review because they issued as the result of a material error during prosecution, making the USPTO the most appropriate venue to examine these issues. As the Petition explains, the examiner materially erred by overlooking express disclosures in the applied prior art, including an embodiment in Aoyama (Ex-1005) with the claimed structure, that showed the challenged claims were unpatentable. Faced with this, AICP has disclaimed 24 of the 35 claims in the '686 patent. That disclaimer does not diminish the material error committed during prosecution or lessen the need to correct it.

Remaining claims 25-35 are trivial variations of those AICP disclaimed. Disclaimed claims 8 and 9 include every limitation of independent claim 25, as well as additional limitations. Thus, if claim 8 or 9 is invalid, so is claim 25. And as shown below, the additional features in dependent claims 26-35 are ***identical*** to one or more corresponding disclaimed claims. *See* Ex-1003 ¶¶81-87, ¶¶91-93.

Remaining Claim	26	27	28	29	30	31	32	33	34	35
Corresponding Disclaimed Claim(s)	2 12 20	3 13 21	22	4	5	6 14	15	7 16 23	17 24	18

AICP cannot distinguish the prior art, including the embodiment overlooked by the examiner. That prior art discloses the structure of claim 25 ***identically***, including the claimed silicon nitride film. At least 14 references confirm it would

have been obvious to use that silicon nitride film to exert stress on the transistor channel—a well-known feature in the prior art already present in three generations of high-volume commercial MOSFETs before the '686 patent. The examiner, however, never cited any such disclosures. In fact, the examiner overlooked such teachings in another applied reference. TSMC's Petition provides the Office with an opportunity to correct the examiner's oversights.

This case also involves complex and diverse litigation proceedings, including particularly technical subject matter. At issue are seven patents related to different aspects of semiconductor fabrication, which the technically trained Board is better able to assess than a lay jury. And given TSMC's stipulation, instituting this Petition would significantly streamline the parallel district court case and reduce the district court's workload, without overlap.

When holistically assessing the facts, evidence, circumstances, and other considerations (detailed below), discretionary denial is not appropriate. TSMC's Petition should be referred to the Board for merits assessment.

II. Petitioner's Updated Stipulation Weighs Heavily Against Discretionary Denial Because It Ensures a True Alternative to Litigation

TSMC and UMC have provided extraordinarily broad and reciprocal stipulations to AICP. Ex-1083; Ex-1084.[1] Those stipulations provide the same offer

[1] TSMC would not oppose a brief reply from AICP to address these stipulations.

to remove ***all invalidity grounds under Sections 102 and 103***, involving any type of legally recognized prior art in the parallel district court actions, if TSMC's Petition is instituted, making the Board a true alternative venue for invalidity.

TSMC stipulated:

> If either
>
> (a) in response to any of the petitions filed by TSMC against U.S. Patent Nos.
>
> - **8,198,686 (IPR2025-00682),**
> - 8,907,425 (IPR2025-00683),
> - 7,579,227 (IPR2025-00828),
> - 7,923,764 (IPR2025-00829),
> - 8,253,180 (IPR2025-00830),
> - 8,587,076 (IPR2025-00831), or
> - 8,796,779 (IPR2025-00832),
>
> the PTAB institutes *inter partes* review and does not subsequently vacate institution,
>
> or
>
> (b) in response to any of United Microelectronics Corporation's ("UMC") petitions against U.S. Patent Nos.

- **8,198,686 (IPR2025-01091),**
- 8,907,425 (IPR2025-01090),
- 7,579,227 (IPR2025-01076),
- 7,923,764 (IPR2025-01079)
- 8,253,180 (IPR2025-01092),
- 8,587,076 (IPR2025-01093), or
- 8,796,779 (IPR2025-01053),

the PTAB institutes *inter partes* review, which is not subsequently vacated or terminated before Final Written Decision,

then

TSMC will not pursue against any of the claims challenged in any instituted IPR proceeding identified above, in any pending litigation, the following:

(i) the specific grounds raised in that instituted IPR proceeding;

(ii) any other grounds that could have reasonably been raised before the PTAB in that instituted IPR proceeding (i.e., any ground that could have reasonably been raised under pre-AIA §§ 102 or 103 on the basis of prior art patents or printed publications); or

(iii) any other invalidity ground under pre-AIA §§ 102 or 103 involving any type of legally recognized prior art, including any patent, printed publication, or system art.

Ex-1083, at 1-2. UMC provided equally broad and reciprocal stipulations on all asserted AICP patents. *See generally* Ex-1084.

These stipulations weigh very heavily against discretionary denial. *See, e.g.*, *Tesla, Inc. v. U.S. Sec'y of the Navy*, IPR2025-00341, Paper 12, at 2 (June 13, 2025); *Tesla, Inc. v. Intell. Ventures II*, IPR2025-00339, Paper 9, at 2 (June 13, 2025). They would ensure that this IPR, if instituted, would be a true alternative to litigation and simplify issues in district court.

III. The *Fintiv* Factors Weigh Against Discretionary Denial

TSMC and UMC have stipulated away the ability to assert any Section 102 and 103 challenges for any type of legally recognized prior art in district court upon IPR institution, greatly simplifying those proceedings. TSMC was also diligent. When it became clear the parties' efforts to resolve their dispute privately were not progressing, TSMC filed its Petition promptly. That was shortly after receiving infringement contentions and six weeks before serving invalidity contentions. By the DI deadline, *Markman* briefing will not have begun, and the close of fact discovery remain more than three months away.

Although jury selection may be tentatively scheduled before the Final Written Decision ("FWD"), a very high probability suggests it will be delayed several months. The average time to trial in Judge Gilstrap's cases over the past year has been 25.5 months,[2] ranging up to 29.3 months, and just 1 of 12 trials began on time. Even if the scheduled date does not move, the Board still will reach a final resolution before the court. Post-trial briefing in Judge Gilstrap's court takes, on average, over 4½ months, and resolving those motions takes 9 months after trial on average. Here, the parties would not receive final resolution from the ict court until about ***9 months*** after the statutory deadline for the Board's FWD. With Judge Gilstrap's case load recently doubling, those timelines are likely to expand.

Accordingly, the date currently scheduled for jury selection should not be dispositive. This is especially true when considering additional factors weighing heavily in favor of institution. For example, the accused technology is older than the patent. The accused technology widely entered the market in 2011, while the application for the '686 patent was under examination. Nothing suggests any previous owner of the '686 patent ever sought to enforce it against chips made using TSMC's technology. When AICP bought the patent two days before suing TSMC, that disrupted settled expectations that a dormant, 12-year-old patent would not be

[2] This is four months longer than TSMC's schedule in the present case.

asserted against TSMC's 13-year-old technology. Now that AICP has initiated a complex, 7-patent district court case involving sophisticated semiconductor technologies, the Board and its trained PTAB judges are better suited to evaluate the validity of the '686 patent.

Moreover, as the Petition explains, the examiner materially erred during prosecution by failing to recognize that the third embodiment of Aoyama (Ex-1005) discloses the claimed structure and anticipates several of the claims that were allowed. The examiner applied Aoyama's first embodiment to an early version of the application's claims, *see* Ex-1002, at 201-02, but never mentioned Aoyama's more relevant third embodiment. Nor did the examiner apply Aoyama to any subsequently amended or newly added claims, including the ones at issue here.

AICP seeks to downplay the examiner's oversight by disclaiming 24 of the 35 challenged claims. The remaining claims, however, are nearly identical to those disclaimed. Aoyama still discloses the claimed structure. The only question is whether it would have been obvious for Aoyama's disclosed silicon nitride film to cause strain in the transistor's channel—a well-known application that was already used in three generations of commercial MOS transistors before the '686 patent. ***Fourteen*** references cited in the Petition corroborate just how well-known it was.

A. Factor 1 (Likelihood of a Stay) Weighs Against Discretionary Denial Because the Court Has a Record of Granting Stay Motions on Similar Facts

Factor 1, properly considered for how the district court will likely rule on a post-institution motion to stay, should weigh against discretionary denial. TSMC filed its initial stay motion April 28, 2025. *See* Ex-2004, 13(Dkt. 99). It remains pending. Focusing solely on that motion, AICP argues Factor 1 favors denial because the district court often denies ***pre-institution*** motions. *See, e.g.*, Paper 6, at 17-20. In so doing, AICP improperly focuses on how the district court might rule ***before*** an institution decision. *See id.* at 18-19. That is the wrong question.

The relevant inquiry is how the court will likely rule ***after*** institution. In the Eastern District of Texas, when the court denies a pre-institution stay motion it routinely ***provides leave to refile*** after institution. *See AGIS Software Dev. LLC v. Google LLC*, No. 2:19-CV-00361-JRG, 2021 WL 465424, at *1 (E.D. Tex. Feb. 9, 2021) (Gilstrap, J.) (calling it "th[e] Court's well-established practice"). AICP mischaracterizes such orders as outright denials. Stay motions after institution are generally granted on timelines like this one. Moreover, because it shows diligence, TSMC's early motion to stay strengthens its position that the case would be stayed ***after*** institution. *See Uniloc USA, Inc. v. Avaya Inc.*, No. 6:15-cv-01168-JRG, 2017 WL 2882725, at *2 (E.D. Tex. Apr. 19, 2017) (Gilstrap, J.) ("When considering a motion to stay, courts have adopted the filing date of the motion as the

proper time to measure the stage of litigation." (citing *VirtualAgility*, 759 F.3d at 1316)); *e-Watch Inc. v. Apple, Inc.*, No. 2:13-cv-1061-JRG-RSP, 2015 WL 12915668, at *3 (E.D. Tex. Mar. 25, 2015) (noting "the Court must accord some weight to the [filing] tim[e] of [the] initial Motion to Stay" before institution).

Although this factor sometimes may be regarded as neutral, *see Apple Inc. v. Fintiv, Inc.*, IPR2022-00976, Paper 9, at 10 (Nov. 15, 2022), this is only true "[i]n the absence of specific evidence," *Sand Revolution II, LLC v. Continental Intermodal Grp.–Trucking LLC*, IPR2019-01393, Paper 24, at 7 (June 16, 2020) (informative). Here, we have guideposts with very similar facts.

A *Markman* hearing will not be held until two months after the DI deadline, confirming the district court will have yet to invest significant resources. Indeed, *Markman* ***briefing*** will not have begun by then. Moreover, fact discovery will remain open 3½ months thereafter, and expert discovery will not begin until after that, remaining open until 5 months after the DI deadline. As the court itself characterized a more advanced schedule, "[t]he most burdensome parts of the case—filing and responding to pretrial motions, preparing for trial, going through the trial process, and engaging in post-trial motions practice—all lie in the future." *Cywee Grp. Ltd. v. Samsung Elecs. Co.*, No. 2:17-CV-00140-WCB, 2019 WL 11023976, at *6 (E.D. Tex. Feb. 14, 2019) (Bryson, J., of the Federal Circuit sitting by designation) (granting stay although "claim construction had been conducted and

discovery was nearly complete"). By the DI deadline in the present case, *Markman* briefing, the *Markman* hearing, and all the "most burdensome parts" of the case will have yet to occur.

Contrary to AICP's position, the court often stays litigation even when the FWD deadline lags the scheduled trial date by several months. *See, e.g.*, *Resonant Sys.*, 2024 WL 1021023, at *2-4 (5 months); *Commc'n Techs.*, 2023 WL 1478447, at *2-5 (same); *Broadphone*, 2024 WL 3524022, at *2-3 (3 months). Patent Owner's reliance on *Chrimar* is unavailing. There, "[t]he Court did not receive the [stay] motion ***until the eve of pretrial***." *Chrimar Sys. v. Adtran, Inc.*, No. 6:15-cv-618-JRG, 2016 U.S. Dist. LEXIS 188613, at *17 (Dec. 9, 2016) (emphasis added). Here, institution will happen nearly 8 months before the earliest possible trial date (which, as explained for Factor 2, is statistically overoptimistic).

Examining schedules the court has found to weigh affirmatively in favor of a stay reveals that a stay would be very likely if IPR were instituted in the present case. *See Resonant Sys., Inc. v. Samsung Elecs. Co.*, No. 2:22-cv-00423-JRG, 2024 WL 1021023, at *2-4 (E.D. Tex. Mar. 8, 2024) (Gilstrap, J.) (granting stay with claim construction briefing underway, two depositions taken, close of fact discovery two months away, and IPR filed three months after invalidity contentions); *Commc'n Techs., Inc. v. Samsung Elecs. Am., Inc.*, No. 2:21-cv-00444-JRG, 2023 WL 1478447, at *3 (E.D. Tex. Feb. 2, 2023) (Gilstrap, J.) ("[W]ith the close of discovery,

the claim construction hearing, and the trial setting all in the future, the Court concludes that this factor weighs in favor of a stay…."); *Broadphone LLC v. Samsung Elecs. Co.*, No. 2:23-cv-00001-JRG, 2024 WL 3524022, at *2-3 (E.D. Tex. July 24, 2024) (Gilstrap, J.) (granting stay motion where "[a] significant amount of discovery remains, the claim construction hearing has not occurred, and trial is currently [7 months away]"); *e-Watch*, 2015 WL 12915668, at *3 (granting a stay partially because, "[b]y the time [Defendant] filed its renewed motion, the claim construction briefing process … had not yet fully completed, … over three-and-a-half months remained within the fact discovery period, and over five months remained within the expert discovery period" (citations omitted)).

By the court's own standards, the present case is in its early stages. The court has only ruled on pro forma motions. And there have been only two depositions, both related to venue and TSMC's pending motion to transfer, not substantive issues involving the '686 patent. Comparing the present case's timeline to comparable timelines before Judge Gilstrap with suggests the stage of the present case favors a stay. *Compare* Ex-2008, *with* Ex-1063, Ex-1064, Ex-1065, Ex-1066, Ex-1067, Ex-1068, *and* Ex-1069.

Stage	*Commc'n Techs.* (Stayed)	*Resonant Sys.* (Stayed)	Present Case
Service of Complaint	209 days (7 mos.) before IPR	226 days (7½ mos.) before IPR	205 days (<7 mos.) before IPR
INV contentions	43 days before IPR		
	IPR FILED		
		2 days after IPR	34 days after IPR
CC Briefing Begins	13 days before DI	20 days before DI	
	Decision on Institution (DI)		
			18 days after DI
CC Hearing	50 days after DI	36 days after DI	61 days after DI
Close Fact Discovery	2½ months after DI	2 months after DI	3½ months after DI
Close Expert Discovery	4 months after DI	3½ months after DI	5 months after DI
Jury Selection	7½ months after DI	7 months after DI	8 months after DI
FWD	5 months after Jury Selection	5 months after Jury Selection	4 months after Jury Selection

TSMC's facts in this case are even stronger than in the ones above. In both of those cases, the same judge presiding over TSMC's case found the stage of the case weighed affirmatively ***in favor*** of a stay. *See Resonant Sys.*, 2024 WL 1021023, at *4 ("The stage in the case also ***weighs in favor of a stay***." (emphasis added)); *Commc'n Techs.*, 2023 WL 1478447, at *3 ("[W]ith the close of discovery, the claim construction hearing, and the trial setting all in the future, the Court concludes that this factor ***weighs in favor of a stay***…." (emphasis added)). If the judge presiding

over the present case found that to be true in *Communication Technologies* and *Resonant Systems*, there is no reason think he would find otherwise in the present case, where the facts weigh even more heavily in TSMC's favor. *Cf. Broadphone*, 2024 WL 3524022, at *2-3 (granting stay even when IPR was filed more than 10 months after complaint and 7 months after service, finding the stage of the case did not weigh against stay).

The DI deadline in the present case precedes claim construction briefing, whereas it was already underway in *Communication Technologies* and *Resonant Systems*. The DI deadline precedes the *Markman* hearing by two months—more than in either of the cases above. And ach of the dates for the close of fact discovery, close of expert discovery, and jury selection is more distant than the two cases above (both of which had FWD deadlines five months after scheduled jury selection). If the timelines in *Communication Technologies* and *Resonant Systems* affirmatively favor a stay, the same judge likely would find the same to be true in the present case.

AICP baselessly faults TSMC for filing IPR petitions "almost eight months" after the Complaint. Paper 6, at 20. The time for filing an IPR is not measured from the date of the lawsuit (August 1, 2024) but the date when the petitioner receives service or a service waiver is filed (Sept. 4, 2024). *See* Ex-2009, at 6 (Dkt. 13). That gap is about 6 ½ months (well within the statutory deadline). TSMC filed its petitions promptly once it became clear the parties' efforts to resolve their dispute privately

were not progressing. At the time, TSMC had recently received AICP's initial infringement contentions (which were deficient and supplemented in response to TSMC's motion to strike) and had more than a month to serve invalidity contentions. *See Tesla, Inc. v. Autonomous Devices, LLC*, IPR2023-01172, Paper 21, at 9 (Jan. 8, 2024) (finding petitioner's "diligence in filing the Petition … before serving its initial invalidity contentions … weighs against discretionary denial"). And, as the table above shows, Judge Gilstrap has granted stays in cases with more advanced schedules than the present case. *See, e.g.*, *Commc'n Techs.*, 2023 WL 1478447, at *3; *Resonant Sys.*, 2024 WL 1021023, at *2-4.

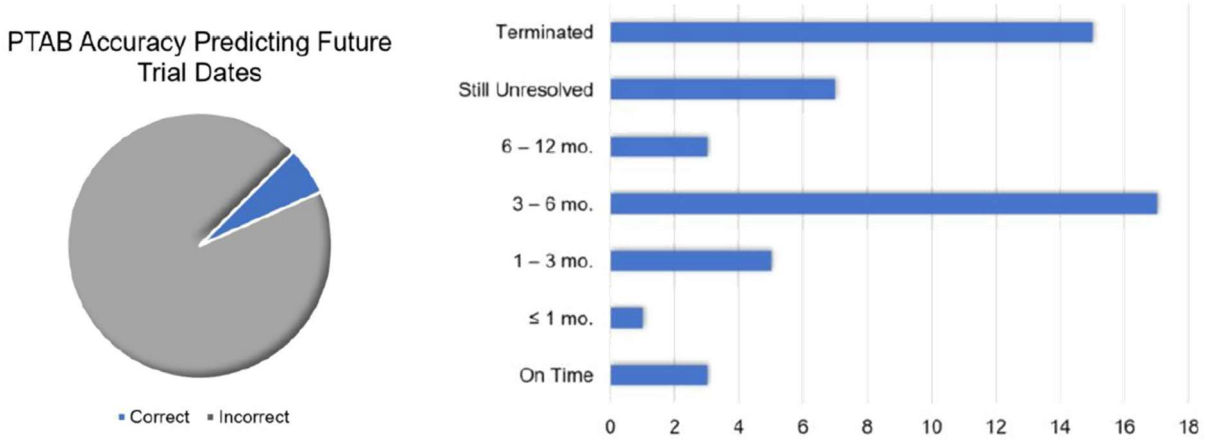
Finally, AICP argues that granting TSMC's stay motion would not stay the action as to UMC because UMC did not join that motion. Paper 6, at 20-21. The fact that UMC did not join that motion is immaterial. At the time, UMC had not yet filed IPRs and had no basis to join. For AICP to suggest UMC will not move to stay the case post-institution based on its understudy petitions is untrue. *See* Ex-1084, at 18 ("[UMC] further stipulates that it will … seek a stay of that Litigation pending resolution of the instituted IPR."). Given the overlap in patents, the similarity in petitions, the extraordinarily broad stipulations proffered by UMC and TSMC, and the fact that the cases are consolidated for pre-trial purposes, a stay almost certainly would be applied to both TSMC and UMC while the Board determines the merits of the IPRs in joint proceedings.

Importantly, TSMC's and UMC's broad and reciprocal stipulations will eliminate absolutely all overlap between this IPR and district court. *See supra* Section II. AICP's arguments regarding UMC are thus moot. *See* Paper 6, at 10-15, 20-21. And as demonstrated above, the current posture strongly favors a stay in the district court for both TSMC and UMC while the Board decides the merits of this petition.

Thus, Factor 1, properly considered for how the district court will likely rule post-institution, should weigh against discretionary denial.

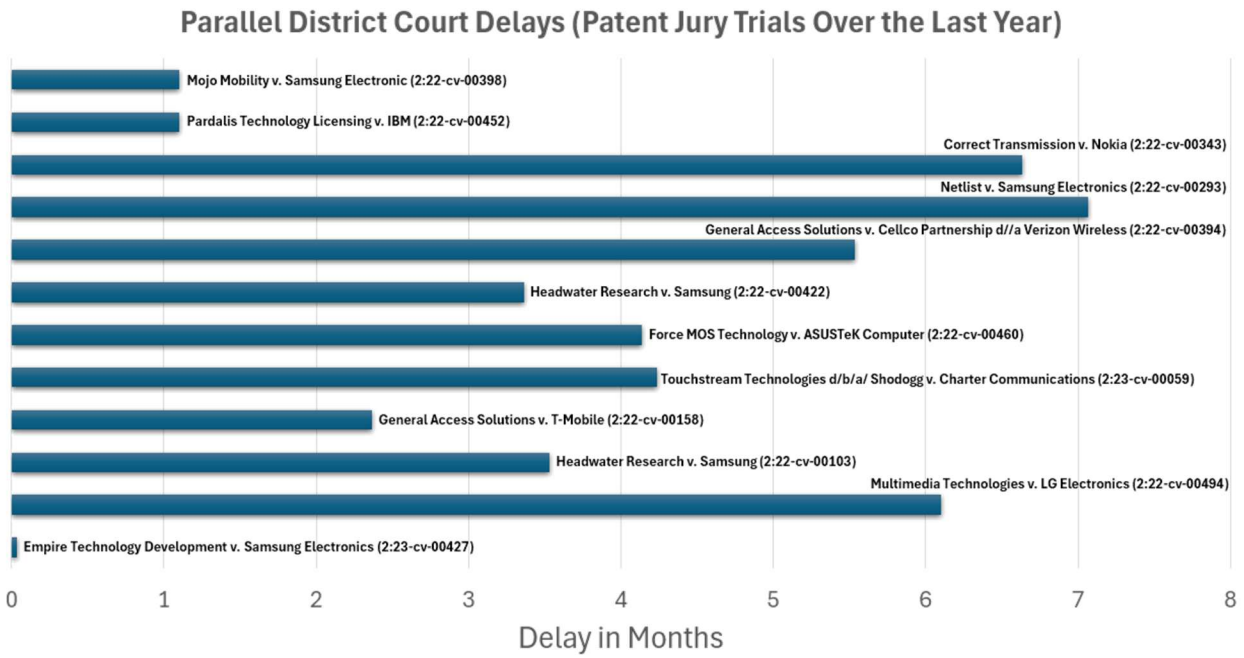
B. Factor 2 (Parallel Trial Date) Should Weigh Against Discretionary Denial Because the Board Is Likely to Issue a Final Order Before the District Court

Factor 2 should weigh against discretionary denial because the Board will likely issue its FWD before trial begins, and certainly before the district court renders its final judgment. The case is scheduled for jury selection June 22, 2026, but 8 cases are scheduled to begin jury selection that day alone, with 19 cases scheduled to begin jury selection throughout June 2026. *See* Ex-1053. The trial date is statistically very likely to be delayed, as shown below. *See* Ex-1054 (studying the PTAB's reliance on the initially scheduled trial dates in *Fintiv* analysis and finding the dates were "wrong 94% of the time" compared to the actual trial dates, the vast majority being delayed 3-6 months). Statistically, trial in the present case likely will begin after the FWD deadline.



Ex-1054, at 2-3

Judge Gilstrap's metrics are similar. Patent Owner incorrectly states "[t]he current median time-to-trial in the Eastern District of Texas is 21.6 months." Paper 6, at 23 (citing outdated statistics). According to the latest official statistics from the United States Courts (which cover the 12-month period ending March 31, 2025), the actual median time to trial in the Eastern District of Texas is ***four months longer***—25.9 months, which would place the trial date on par with the statutory deadline for the FWD. Ex-1055, at 35. Looking more specifically at Judge Gilstrap's patent jury trials over the past year, the average time to trial is essentially the same—25.5 months. *See* Ex-1056, at 1-2.

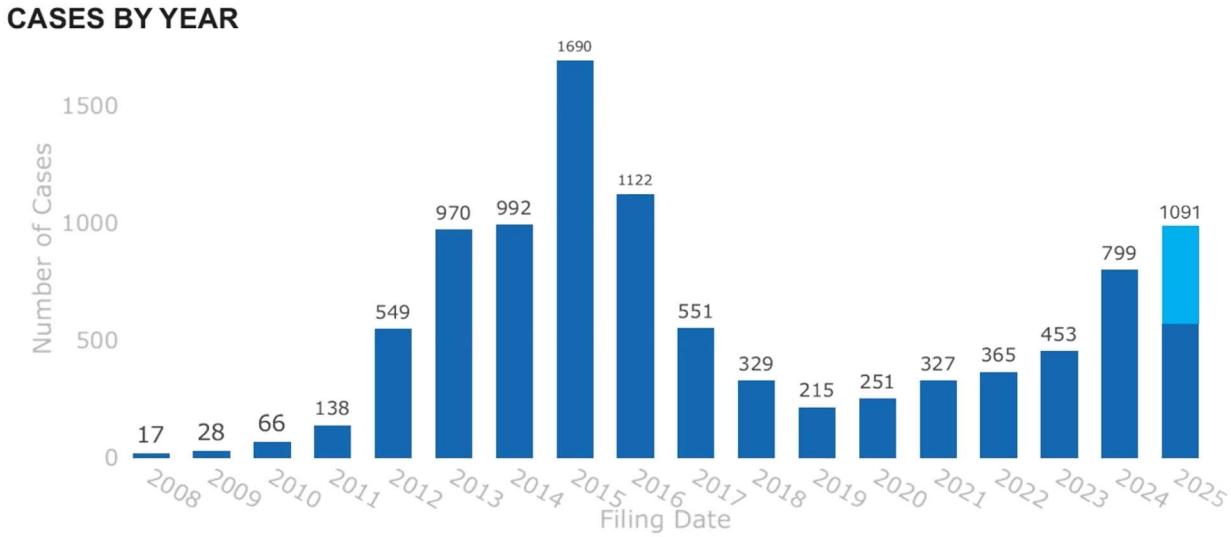


Judge Gilstrap Trial Delays (Past Year)

Except for one above case, ***all*** were delayed—half by four months or more. *Id.* Statistically, therefore, the Board may reach a resolution before trial begins (especially since the Board often issues DIs and FWDs before their statutory deadlines).

These delays are almost certain to worsen by the scheduled jury selection date here. The trials above involve cases filed in 2022 and 2023. *Id.* The present case was filed in late 2024. As indicated below, the district court's case filings have essentially ***doubled*** since 2022 and 2023—a continuing trend, with 1091 cases projected by the end of 2025. *See* Ex-1057. Delays are thus likely to lengthen, and delays last year already averaged nearly four months, ranging up to seven months. *See* Ex-1056,

at 1-2. Average time to trial was 25.5 months, ranging up to 29.3 months. *Id.* And just 1 of 12 jury trials began on time. *See id.*



Ex-1057 (modified to include prorated 2025 projection)

Focusing solely on the scheduled trial date also fails to account for the realities of litigation. The Board's decision becomes immediately appealable to the Federal Circuit, whereas a jury verdict takes time to reach, followed by post-trial briefing and orders that further delay resolution by many months. Since 2023, post-trial briefing alone in Judge Gistrap's court has taken, on average, more than 4½ months. *See* Ex-1058. And obtaining an order resolving post-trial motions has taken, on average, 9 months after trial. *Id.* Accordingly, it would be incredibly unlikely for the district court to issue a final, appealable order before the Board does. The Board, not the district court, can provide the most expeditious resolution here.

Patent Owner further assumes UMC's understudy petition will not be joined, presenting this as a basis to argue further delay. *See* Paper 6, at 22. But if UMC is joined, as it has requested, both proceedings would proceed on the same schedule, adding no delay whatsoever. *See* Ex-1094; Ex-1095; Ex-1096; Ex-1097; Ex-1098; Ex-1099; Ex-1100. Even if not, UMC's stipulation still would preclude it from asserting Section 102 and 103 grounds if TSMC's Petition is instituted. *See generally* Ex-1084.

AICP's forum shopping should not be rewarded. AICP could have sued TSMC in Arizona, for example, where TSMC has spent many billions of dollars to build U.S. manufacturing facilities and employ engineers, but that would not have allowed AICP to game the *Fintiv* analysis. *See* Ex-1055, at 65 (38.3-month time to trial in D. Ariz.). AICP instead filed in a district with a reputation for fast trial schedules but no meaningful connection to the dispute (as set forth in TSMC's motion to transfer). Such forum shopping should not be rewarded by immunizing the '686 patent from Board scrutiny, especially where the examiner materially erred. Members of Congress and the Chief Justice of the Supreme Court have raised concerns about such forum-shopping practices, including concerns that *Fintiv* Factor 2 "credit[s] unrealistic trial schedules" and will "create[] harmful incentives for forum shopping." Ex-1060, at 1; *see also* Ex-1061, at 1-2 (noting concerns about the concentration of patent cases in certain venues because of patent owner

incentives); Ex-1062, at 5 (ordering an inquiry into an "important matter of judicial administration: judicial assignment and venue for patent cases in federal trial court").

The main purpose of Factor 2 is to ensure efficiency and avoid duplicative efforts. Given TSMC's and UMC's broad, reciprocal stipulations here, there can be no repetition or inefficiency: the IPR would be a true alternative, as Congress intended. *See* 77 Fed. Reg. at 48612 (Aug. 14, 2012) ("The purpose of the AIA and this final rule is to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs.").

Regardless, Factor 2 is not dispositive and must be weighed together with other factors. Discretionary denial has been withheld in cases with scheduled trial dates predating the FWD deadline by as much or more than in the present case. *See Samsung Display Co. v. Pictiva Displays Int'l Ltd.*, IPR2024-01222, Paper 12, at 7, 24 (Mar. 6, 2025) (7-month difference); *SAP Am., Inc. v. Cyandia, Inc.*, IPR2024-01433, Paper 13, at 9, 27 (Apr. 7, 2025) (6-month difference); *Kia Corp. v. Emerging Automotive LLC*, IPR2024-01167, Paper 14, at 15, 49 (Jan. 27, 2025) (same); *IBM Corp. v. Digital Doors, Inc.*, IPR2023-00973, Paper 10, at 12, 25 (Jan. 19, 2024) (5-month difference); *Autonomous Devices*, IPR2023-01172, Paper 21, at 7, 17 (same); *MediaTek Inc. v. Daedalus Prime LLC*, IPR2025-00100, Paper 10, at 28, 35 (May 19, 2025) (4-month difference). The circumstances here warrant the

same outcome, especially since TSMC has entered a stipulation far broader than in any of these exemplary cases. *See, e.g.*, *Tesla v. Navy*, IPR2025-00341, Paper 12, at 2-3 (broad stipulation outweighed other *Fintiv* factors, including trial date).

As *Fintiv* acknowledges, "the decision whether to institute will likely implicate other factors" besides the scheduled trial date, including "the resources that have been invested in the parallel proceeding" (Factor 3). *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 9 (Mar. 20, 2020) (precedential) (emphasis added). In the present case, Factor 3 and other significant considerations, including TSMC's stipulation, the Office's material error, and settled expectations of TSMC and others (and AICP's lack thereof) weigh heavily against discretionary denial.

C. Factor 3 (Investment in Parallel Proceeding at the DI Deadline) Weighs Against Discretionary Denial Because the District Court Case Will Be Its Early Stages, With the *Markman* Hearing After the DI Deadline

"If, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution." *Fintiv*, Paper 11, at 10. Factor 3 thus weighs against discretionary denial, because the DI deadline is before the onset of claim construction briefing and the *Markman* hearing, and the court has yet to hold any hearings related to the '686 patent.

AICP points only to the parties' early invalidity and infringement contentions and a modicum of discovery. *See* Paper 6, at 24-26. That is not enough. *See SAP*, IPR2024-01433, Paper 13, at 10-11 (rejecting the notion that such activities constitute significant investment and concluding Factor 3 favors institution); *Kia*, IPR2024-01167, Paper 14, at 16-17 (same); *Autonomous Devs.*, IPR2023-01172, Paper 21, at 7-9 (same).

Meanwhile, AICP concedes that fact discovery, expert discovery, and the claim construction hearing fall well after the DI deadline. *See* Paper 6, at 25. Those dates confirm Factor 3 weighs ***against*** discretionary denial. *See SAP*, IPR2024-01433, Paper 13, at 11 (finding Factor 3 weighs against discretionary denial where *Markman* hearing was rescheduled from before DI deadline to after DI deadline); *Kia*, IPR2024-01167, Paper 14, at 17 (finding Factor 3 weighs against discretionary denial where "[f]act and expert discovery are ongoing [for six more weeks and 11 more weeks], respectively" and *Markman* hearing was rescheduled from before DI deadline to after DI deadline); *Autonomous Devs.*, IPR2023-01172, Paper 21, at 8-9 (finding Factor 3 weighs against discretionary denial where "fact discovery is ongoing[and] expert discovery has not begun" and "the District Court has yet to issue a claim construction order").

Comparing the timeline in the present case to other cases with analogous timelines, as in the table below, confirms that Factor 3 weighs against discretionary

denial. *Compare* Ex-2008, *with* Ex-1070, Ex-1071, Ex-1072, Ex-1073, Ex-1074, Ex-1075, Ex-1076, Ex-1077, *and* Ex-1078.

Stage	***SAP*** **(Instituted)**	***Kia*** **(Instituted)**	***Pictiva*** **(Instituted)**	**Present Case**
Service of Complaint	219 days (9½ mos.) before IPR	294 days (10 mos.) before IPR	287 days (9½ mos.) before IPR	205 days (<7 mos.) before IPR
INV contentions	72 days before IPR	109 days before IPR	98 days before IPR	
	IPR Filed			
				34 days after IPR
CC Briefing	47 days before DI	53 days before DI	72 days before DI	
CC Hearing			30 days before DI	
	Decision on Institution (DI)			
CC Briefing				18 days after DI
CC Hearing	17 days after DI	18 days after DI		61 days after DI
Fact Discovery Close	1 month after DI	1 month after DI	4 ***days*** after DI	3½ months after DI
Expert Discovery Close	2½ months after DI	2½ months after DI	1½ months after DI	5 months after DI
Jury Selection	6 months after DI	6 months after DI	5 months after DI	8 months after DI
FWD	6 months after Jury Selection	6 months after Jury Selection	7 months after Jury Selection	4 months after Jury Selection

In all three cases above, Factor 3 was found to weigh affirmatively ***against*** discretionary denial. *See SAP*, IPR2024-01433, Paper 13, at 11 ("We conclude that [Factor 3] ***favors institution***." (emphasis added)); *Kia*, IPR2024-01167, Paper 14,

at 17 (finding Factor 3 "weighs ***against discretionary denial***" (emphasis added)); *Pictiva*, IPR2024-01222, Paper 12, at 7 (finding Factor 3 "***weighs against denial***" (emphasis added)). There is no reason to find otherwise in the present case, where the case schedule has not advanced as much.

Unlike the cases above, the DI deadline in the present case precedes claim construction briefing. It also precedes the *Markman* hearing by two months—far more than in any of the cases above. The present case is much less advanced by comparison. Each of the dates for the close of fact discovery, close of expert discovery, and jury selection is 2-3 months longer relative to the DI deadline when compared to the cases above (all of which had FWD deadlines six or seven months after scheduled jury selection). If those schedules weigh against discretionary denial, the same must be true here.

Moreover, as explained for Factor 1, "the most burdensome parts of the case" still "all lie in the future" after the DI deadline. *Cywee*, 2019 WL 11023976, at *6. Comparing the present caseto comparable cases before Judge Gilstrap demonstrates that the court itself would agree the stage of this case is not advanced. *See supra* Section III.A.

AICP's arguments to the contrary lack merit. Although discovery is underway, that should not be a significant factor let alone dispositive. Discovery begins after the case management conference in every case. *See* Fed. R. Civ. P.

26(a)(1)(C). What matters, as shown above, is the significant substantive work that would remain after the DI deadline, such that investment in the parallel proceedings before the DI deadline will have been minimal. So much time remains in the schedule after the DI deadline that instituting IPR would minimize (perhaps altogether eliminate) the investment by the parties and the court necessary to resolve the disputes.

AICP does not dispute the timeline above. Instead, it cites inapposite caselaw addressing very different facts to exaggerate the degree of parallel investment. A timeline like this one—and even those deeper into claim construction—do not constitute a heavy investment in the litigation. *See Pictiva*, IPR2024-01222, Paper 12, at 7; *SAP*, IPR2024-01433, Paper 13, at 9-11; *Kia*, IPR2024-01167, Paper 14, at 16-17; *Autonomous Devices*, IPR2023-01172, Paper 21, at 7-9; *Resonant Sys.*, 2024 WL 1021023, at *2-4; *Commc'n Techs.*, 2023 WL 1478447, at *2-5; *Broadphone*, 2024 WL 3524022, at *2-3.

AICP's reliance on *Chrimar* is unavailing. There, "[t]he Court did not receive the [stay] motion ***until the eve of pretrial***"—the final stage of the case, by which time the district court and parties had invested significant resources 2016 U.S. Dist. LEXIS 188613, at *17 (emphasis added). Circumstances here are vastly different.

AICP's reliance on *Truesight* fares no better. *See* Paper 6, at 25 (citing *Samsung Elecs. Co. v. Truesight Commc'ns LLC*, IPR2024-01477, Paper 12

(Apr. 21, 2025)). There, the close of fact discovery was just two weeks after the DI deadline, and the claim construction hearing had taken place. That is not a "comparable stage" to the facts at issue here. *Id.* By the DI deadline in the present case, claim construction briefing will not have started, not to mention that the *Markman* hearing will be held 2 months after the DI deadline, and fact discovery will remain open for 3½ more months. Ex-2008, at 5. Further, in *Truesight*, the DI deadline was a mere three weeks before the *Markman* hearing, and fact discovery was set to close just 12 days after the DI deadline. *See* Ex-1079; Ex-1080; Ex-1081. That, too, is a far cry from the present case.

Nor does AICP's reliance on *Digital Doors* support its position. *See* Paper 6, at 25 (citing *Digital Doors*, IPR2023-00973, Paper 10, at 10-11). As AICP admits, *Digital Doors* did not even find that Factor 3 favored discretionary denial. *See id.* Moreover, IPR was ***instituted***. *See Digital Doors*, IPR2023-00973, Paper 10, at 25.

AICP's argument based on *Chrimar*, *Truesight*, and *Digital Doors* should be rejected because, unlike any of those cases, the present case is and will remain at its early stages by the DI deadline. Moreover, TSMC has entered an exceedingly broad stipulation that weighs heavily against discretionary denial. *See, e.g.*, *Tesla v. Navy*, IPR2025-00341, Paper 12, at 2 (finding the petitioner's "broad stipulation" counseled against discretionary denial where "the scheduled trial date precedes the projected [FWD] due date"). If instituted, TSMC's IPR would minimize, or even

eliminate, the investment of resources in the parallel proceeding. In contrast, the petitioner in *Truesight* entered only a basic *Sotera* stipulation (*see* IPR2024-01477, Paper 3, at 89); the petitioner in *Digital Doors* entered only a *Sand Revolution* stipulation (*see* IPR2023-00973, Paper 2, at 74); and the petitioner in *Chrimar* offered no stipulation.

AICP's complaint about an alleged "delay" of "almost eight months" rings hollow. *See* Paper 6, at 26. The time for filing an IPR is not measured from the date of the lawsuit but from the date when the petitioner is served or a service waiver is filed. That was about 6½ months. *See* Ex-2009, at 6 (Dkt. 13); *see also, e.g.*, *Tesla v. Navy*, IPR2025-00341, Paper 12 (petition filed 7 months into statutory deadline referred to panel for merits assessment). TSMC filed its petition after realizing the parties' efforts to resolve their dispute privately were not progressing. At that time, TSMC had just received infringement contentions and had more than a month to serve invalidity contentions. *See, e.g.*, *Autonomous Devices*, Paper 21, at 9 (finding petitioner's "diligence in filing the Petition … before serving its initial invalidity contentions … weighs against discretionary denial").

AICP's "delay" argument also seems to fault TSMC for making good faith efforts to explore a potential resolution of the parties' disputes that would obviate the need to file IPR petitions. TSMC's counsel reached out to AICP on December 16, 2024—3½ months before filing this Petition. *See* Ex-1082 ¶2. AICP

responded nearly two months later, on February 6, 2025. *Id.* ¶3. After reviewing TSMC's positions and materials, AICP's principals came to Taiwan to meet TSMC principals on March 12, 2025. *Id.* ¶4. The parties held 6 teleconferences thereafter to continue their discussions. *Id.* ¶5. With efforts to resolve their dispute not progressing, TSMC filed this Petition.

Encouraging patent settlement negotiations can free up judicial and agency resources, provide a quicker path to resolving disputes between parties, and avoid lengthy and costly litigation. *See, e.g.*, *Asahi Glass Co., Ltd. v. Pantech Pharms., Inc.*, 289 F. Supp. 2d 986, 991 (N.D. Ill. 2003) ("The general policy of the law is to favor the settlement of litigation, and the policy extends to the settlement of patent infringement suits."). To hold against TSMC, for purposes of discretionary denial, the time spent negotiating settlement would undermine sound public policy for encouraging parties to resolve disputes privately and conserve governmental resources. TSMC's laudable conduct should weigh ***against*** discretionary denial here, not become a cudgel that discourages good-faith dispute resolution efforts.

AICP also incorrectly attempts to weigh the volume of invalidity contentions against institution, claiming it increases the amount of investment in the district court.[3] *See* Paper 6, at 6, 24-25. This argument misses the point. In a case involving

[3] Preparing contentions does not burden the court, which never receives them.

seven patents like the present case, the volume of invalidity contentions is not out of the ordinary. And such complexity underscores how much IPR would minimize, or even eliminate, the investment in the parallel proceeding. *See supra* Section II. Contentions are exchanged before the DI deadline in most (if not all) litigated cases, including recent cases referred to the merits panel. Thus far, such activities have not been found relevant. *See Cambridge Indus. USA, Inc. v. Applied Optoelectronics, Inc.*, IPR2025-00437 et seq., Paper 10, at 2-3 (June 26, 2025) (referred without mentioning invalidity contentions served 10½ months before DI deadline[4]); *SAP*, IPR2024-01433, Paper 13, at 10-11 (rejecting the notion that basic discovery activities, including exchanging contentions, constitute significant investment and concluding Factor 3 favors institution); *Kia*, IPR2024-01167, Paper 14, at 16-17 (same); *Autonomous Devices*, IPR2023-01172, Paper 21, at 7-9 (same).

Nor can AICP rely on its infringement contentions. As a plaintiff, AICP must prepare infringement contentions regardless of whether IPR is instituted. That is typically done before filing suit to satisfy Fed. R. Civ. P. 11. Keeping those contentions secret and producing them as required under the court's procedural schedule hardly demonstrates investment. That is especially true here. AICP served

[4] Here, initial invalidity contentions were served less than 5 months before the DI deadline and not until more than a month ***after*** the Petition was filed.

supplemental contentions because its initial contentions were admittedly deficient. *See* Ex-2011, at 1-3 (AICP admitting "the omission of a claim limitation," a need to provide "additional detail," and a need to chart another product); Ex-2012, at 1-3 (similar). That demonstrates a ***lack*** of investment by AICP.

Even more strained, AICP notes, "by the time this proceeding would be instituted (if at all), the parties will have invested even more time and effort into the discovery process in the Lawsuits," which is tautological in almost any parallel proceeding before IPR is instituted. Paper 6, at 7. That does not warrant discretionary denial. As the district court has recognized, "[t]he most burdensome parts of the case—filing and responding to pretrial motions, preparing for trial, going through the trial process, and engaging in post-trial motions practice—all lie in the future" (after the DI deadline). *Cywee*, 2019 WL 11023976, at *6. Discovery in the district court, especially as it relates to invalidity, has thus far been minimal and will remain so by the DI deadline, counseling against discretionary denial.

AICP's alleged "significant motion practice" does not help its case either. Paper 6, at 7-8. It is hard to see how TSMC's motion to stay or motion to transfer venue constitute significant investment. Instead, those motions would halt or transfer

the litigation— saving significant investment in the litigation by the Court.[5] And the court has not yet ruled on those motions. Only two depositions to date have occurred, and both related to venue, not substantive issues related to the '686 patent. The court has only ruled on pro forma motions.

Because investment in the district court has been and will remain minor by the DI deadline, Factor 3 weighs against discretionary denial.

D. Factor 4 (Overlap Between Petition and Parallel Proceeding) Weighs Against Discretionary Denial Because TSMC and UMC Have Committed to Extraordinarily Broad Stipulations to Eliminate All Overlap If the Board Institutes IPR

Factor 4 weighs strongly against discretionary denial because TSMC and UMC have committed to extraordinarily broad stipulations that would completely eliminate all overlap between this IPR and the district court for ***both*** parties if IPR is instituted. These stipulations render AICP's arguments regarding Factor 4 moot. AICP's arguments regarding Factor 4, *see* Paper 6, at 11-14, 26, are incorrect now that TSMC and UMC have submitted stipulations that remove ***all*** overlap across ***all*** parallel district court cases, not just TSMC's. *See* Ex-1083, at 1-2; Ex-1084, at 17-20.

[5] TSMC's venue challenge, if successful, would change the trial schedule and the court itself, further undermining any notion of substantial investment or overlap.

A *Sotera* stipulation remains a weight "***strongly against***" denial. *Truesight*, IPR2024-01477, Paper 12, at 14. TSMC offered that with its petition. Now aware of further developments in discretionary denial practice, TSMC offers a stipulation that extends well beyond *Sotera*, making this IPR an absolute alternative to district court for invalidity. It eliminates all invalidity grounds based on any patent, printed publication, or other type of legally recognized prior art (including system art). This weighs even more heavily against discretionary denial than a *Sotera* stipulation. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, at 19 (Dec. 1, 2020) (precedential); *see also Tesla v. Navy*, IPR2025-00341, Paper 12, at 2 (rejecting discretionary denial request where petitioner "filed a broad stipulation" that was narrower than TSMC's).

TSMC's invalidity contentions are immaterial. *See* Paper 6, at 26-27. Effective upon IPR institution, the TSMC and UMC stipulations ***remove all prior art***, including the IPR grounds. Board precedent holds that a *Sotera* stipulation, even without TSMC's significant additional restrictions, "mitigates any concerns of duplicative efforts between the district court and the Board." *Sotera*, IPR2020-01019, Paper 12, at 19. That should be doubly true here, as the broader TSMC and UMC stipulations remove all prior art (including all patents, printed publications, and system art)—meaning there would be ***no invalidity issues based on prior art*** in the district court. *See* Ex-1083, at 1-2; Ex-1084, at 17-20.

Patent Owner's reliance on *SAP Am., Inc. v. Cyandia, Inc.*, IPR2024-01495, Paper 13, at 8-9 (Apr. 7, 2025), is unavailing. *See* Paper 6, at 30-31. In *SAP*, IPR was denied because the petitioner would have remained "free to pursue a system-based invalidity challenge in the district court based on essentially the same prior art that would be at issue [before the Board]." IPR2024-01495, Paper 13, at 11. SAP asserted IBM's WebSphere software as system art in the district court, and the primary reference for two of SAP's proposed grounds was WebSphere technical documentation. Thus, "Petitioner may continue to press an invalidity defense based on the same evidence presented here." *Id.* at 9. That is not true in the present case—not for TSMC or for UMC. Their stipulations would remove ***all*** prior art, including system art, from the district court if IPR is instituted. *See supra* Section II.

Faced with TSMC's strong Petition, AICP has voluntarily disclaimed 24 of the 35 challenged claims, and the remaining claims include unasserted claims. AICP's disclaimer does not render the district court duplicative or diminish the significance of the material error committed during prosecution.[6] *See* Paper 6, at 27-28. It highlights the strength of TSMC's Petition. *See infra* Section IV.A.

[6] AICP tries to cast blame on TSMC for challenging all claims (*see* Paper 6, at 4 n.1), but TSMC only gets one chance to challenge the '686 patent in IPR, and all the claims are very similar to the asserted claims.

The remaining claims are trivial variations of the ones AICP disclaimed. *See* Ex-1003 ¶¶77-93 (comparing the claims). Disclaimed claims 8 and 9 each include every limitation of independent claim 25, as well as additional limitations. Thus, if claim 8 or 9 is invalid, so is claim 25. Further, each of the additional limitations in remaining claims 26-35 is ***identical*** to one or more corresponding disclaimed claims, as the table below shows. *See* Ex-1003 ¶¶81-87, ¶¶91-93.

Remaining Claim	26	27	28	29	30	31	32	33	34	35
Corresponding Disclaimed Claim(s)	2 12 20	3 13 21	22	4	5	6 14	15	7 16 23	17 24	18

AICP's disclaimer does not make this IPR coextensive with the district court proceedings. To the contrary, AICP admits there are "additional, unasserted claims" challenged in TSMC's Petition that are not at issue in district court (i.e., claims 30 and 32-33). *See* Paper 6, at 27. Such "additional challenged claims not at issue in the district court … ***weigh[] against*** exercising discretion to deny institution." *Pictiva*, IPR2024-01222, Paper 12, at 8 (emphasis added); *accord Savant Techs. LLC v. Feit Elec. Co.*, IPR2024-01357, Paper 17, at 14 (Mar. 5, 2025) ("The fact that this trial would involve some different claims … weighs against denying institution [based on Factor 4].") Here, nearly 30% of all challenged claims remaining in the Petition are unasserted in district court. This lack of overlap weighs against discretionary

denial, especially when considered in view of TSMC's and UMC's extraordinarily broad stipulations.

TSMC's and UMC's broad stipulations, the non-overlapping claims challenged in TSMC's Petition, and the ineffectiveness of AICP's disclaimer all contribute to the hefty weight of Factor 4 against discretionary denial.

E. Factor 5 (Whether the Parties Are the Same) Does Not Favor Discretionary Denial Because the Parties Are Almost Always the Same

The parties before the Board and district court are the same, as in almost all IPRs. Although Factor 5 can weigh ***slightly*** in favor of discretionary denial under such circumstances, it may also be neutral since it is so frequently true. It is not dispositive, and it must be considered in the context of all other factors. *See, e.g.*, *Kubota N.A. Corp. v. Vermeer Mfg. Co.*, IPR2025-00171, Paper 15, at 15-16 (June 10, 2025) (refusing to exercise discretionary denial).

F. Factor 6 (Other Considerations)—Including Settled Expectations of TSMC and Others, Material Error During Prosecution, Complexity of the Case, and the Strength of the Petition—Weigh Against Discretionary Denial

Considerations under Factor 6 weigh heavily ***against*** discretionary denial, as discussed further below. AICP's reasons offered for Factor 6 are meritless. *See* Paper 6, at 34-46.

1. Settled Expectations Weigh Against Discretionary Denial

Although "the '686 patent has been in force for over a decade," Paper 6, at 34, that does not help AICP's position under the circumstances. In fact, it should weigh heavily in TSMC's favor. That is because TSMC commercialized the accused technology before the '686 patent issued. For well over a decade, no one asserted the '686 patent against that technology.

The '686 patent issued in June 2012, more than twelve years before AICP sued TSMC. *Compare* Ex-1001, at cover (item 45), *with* Ex-2009, at 5 (Dkt. 1). Meanwhile, plans for the accused TSMC technology (e.g., TSMC's 28HP process) were first announced in August 2009, and it went into volume production by October 2011—***before the '686 patent issued***. Ex-1116; Ex-1117. Although TSMC had manufactured chips using the accused technology continuously for 13 years, none of the '686 patent's prior owners ever sought to enforce it against TSMC. Only when AICP acquired the '686 patent 12 years later was it first enforced. TSMC's continuous manufacture and sale of the accused chips, with no enforcement, for longer than the '686 patent has even existed should weigh heavily against discretionary denial. It shows that TSMC—and others who implement TSMC's accused technology—had settled expectations that the '686 patent would not apply to the accused technology. *See Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper 12, at 2-3 (June 26, 2025) (explaining it "weigh[s] against a patent owner's claim of

settled expectation" when "a patent may have been in force for years but may not have been … applied in a petitioner's particular technology space"). When AICP acquired the '686 patent, it should have shared those expectations.

As a new owner of the '686 patent, AICP cannot overwrite the settled expectations of TSMC and others. Analogizing to real property law, the settled expectations of others would exceed those of a new property owner under such circumstances. *See* Restatement (First) of Prop. § 459 cmt. a (1993) ("Through lapse of time old rights become obscure. A long continued use raises reasonable expectations of its continuance."); *Anaheim Gardens, L.P. v. United States*, 953 F.3d 1344, 1350-51 (Fed. Cir. 2020) (noting that "the timing of the purchase and knowledge of the purchaser"—especially "a sophisticated investor"—"are relevant considerations in determining whether a purchaser had reasonable investment-backed expectations" in the takings context); *Nordlinger v. Hahn*, 505 U.S. 1, at 12-13 (1992) ("[A]n existing owner rationally may be thought to have vested expectations in his property or home that are more deserving of protection than the anticipatory expectations of a new owner at the point of purchase.").

AICP did not even exist before June 2024 and thus could not have had any expectations—settled or otherwise—beforehand. When AICP acquired patents (like the '686 patent) that had never been asserted in any proceeding, with the intention of asserting them, the only reasonable expectation is that their validity would be

challenged. AICP was founded June 12, 2024, only a few months before suing TSMC.[7] *See* Ex-1087; Ex-1088. Its sole business is to buy dubious patents and sue entities, like TSMC, that provide valuable public services and help drive the U.S. economy. That should weigh against discretionary denial.

Nor did the market have any expectations that the '686 patent would be meaningfully enforceable. The market's expectations would have been to the contrary given that the accused technology had been in use longer than the patent.

AICP's reliance on *iRhythm* and the "advanced age" of the '686 patent is strained here because other factors, including the settled expectations of TSMC and others, outweigh the mere age of the patent. *See* Paper 6, at 39-40. As *Proxense* recognizes, "[t]here may be persuasive reasons why the Board should review challenged claims several years after their issuance date," including when "a patent may have been in force for years but may not have been commercialized, asserted, marked, [or] licensed." IPR2025-00327, Paper 12, at 2-3. Such countervailing factors are present here. Not only was the '686 patent never enforced against TSMC or its customers, but it was never asserted or adjudicated in any proceeding until ***two***

[7] AICP seems to be owned by another company, called AMTL LLC. *See* Ex-1088. In contrast with TSMC's U.S. investments, well exceeding $150 billion (*see infra* Section IV.A), AMTL had an annual tax assessment of $300. *See* Ex-1105.

days after AICP acquired it. *Compare* Ex-1089, at 3, *with* Ex-2009, at 5 (Dkt. 1). And nothing suggests that any entity has ever marked any product with the '686 patent or otherwise provided constructive notice.

AICP does not even allege that TSMC was aware of the '686 patent itself. Instead, it argues TSMC submitted a German patent filing that named the published ***application*** for the '686 patent as prior art.[8] *See* Paper 6, at 38-39. Judge Gilstrap, for one, has aptly criticized the notion that one document in a patent family imputes constructive knowledge of the rest: "Saying you knew about the family is not too far a step from saying you knew there was this PTO in Virginia, and you should just go check everything there and see if anything there applies." *Intell. Ventures II LLC v. Sprint Spectrum, L.P.*, No. 2:17-cv-00662-JRG, 2019 WL 1987172, at *2 (E.D. Tex. Apr. 12, 2019) (quoting Pre-Trial Hearing Before the Hon. Judge Rodney Gilstrap, *Intell. Ventures I LLC v. T-Mobile USA, Inc.*, No. 2:17-cv-00577-JRG, at 61:3-6 (E.D. Tex. Jan. 14, 2019), ECF No. 297 (Ex-1090, at 4)). AICP does not even allege that TSMC had this knowledge before November 2023—less than a year before AICP obtained the '686 patent and filed suit. Meanwhile, plans for TSMC's accused

[8] The published ***application***, which is not enforceable or challengeable, does not provide notice of an issued ***patent*** or that someone might think the claims of that patent relate to any products.

technology were first announced in August 2009, and it went into volume production by October 2011. In all the time since, TSMC never knew about the ’686 patent and never had any reason to challenge it. The prior owners of the ’686 patent, however, knew of their rights and had ample opportunity to assert them against TSMC, whose activities were far from secret or *de minimis*.

Sound public policy also counsels against discretionary denial here. Entities like AICP should not be rewarded for acquiring and asserting dormant patents against technology that has been in use far longer than AICP or even the ’686 patent has existed. Accepting AICP’s position would undermine the public interest. It would perversely incentivize companies to wait until their patents reach an advanced age before enforcing them, or to lie in wait to assert patents near the end of their life merely because they will be insulated from IPR. To ensure a balanced system where the PTAB improves the overall efficiency of the patent system, the settled expectations analysis must weigh the impact on both the patent owner and the public.

Under circumstances like the ones at issue here, on balance, the age of the ’686 patent and the products accused in litigation should weigh against discretionary denial, not in favor of it. *See Anthony Inc. v. ControlTec, Inc.*, IPR2025-00559, Paper 12, at 2 (July 16, 2025) (petitions involving 17- and 18-year-old patents referred to merits panel); *Tesla v. Navy*, IPR2025-00341, Paper 12 (18-year-old

patent); *Tesla v. Intell. Ventures II*, IPR2025-00339, Paper 9 (14-year-old patent); *Amazon.com, Inc. v. NL Giken, Inc.*, IPR2025-00250, Paper 14 (May 16, 2025) (13-year-old patent); *Amazon.com, Inc. v. NL Giken, Inc.*, IPR2025-00407, Paper 14 (May 16, 2025) (11-year-old patent); *Savant Techs. LLC v. Feit Elec. Co.*, IPR2025-00260, Paper 16 (June 12, 2025) (11-year-old patent). A patent's age should not be weighed in favor of discretionary denial, especially when, as here, there was "a material error in examination." *Eunsung Global Corp. v. HydraFacial LLC*, IPR2025-00445, Paper 14, at 2-3 (July 10, 2025); *see also infra* Section III.F.3.

2. The Strength of TSMC's Grounds Weighs Against Discretionary Denial

TSMC files strong IPR petitions, evidenced by its stellar track record: a 94% institution rate (by challenged patent) for petitions that reach institution[9] and a 100% win rate in FWD.[10] Ex-1086; Ex-1106, at 1. This petition is no different.

AICP seems to believe a petition only has merit if it includes an "anticipation theory." Paper 6, at 3-4; *see also id.* at 34-38. AICP's belief is objectively wrong. Statistics for the past five years show that an overwhelming 98.6% of all IPR final

[9] In other words, for all TSMC petitions that have reached an institution decision, the Board has instituted one or more TSMC IPR on 94% of the challenged patents.

[10] Amendment of a single claim in 42 FWDs was allowed. *See TSMC v. Godo Kaisha IP Bridge 1*, IPR2017-01249, Paper 47, at 34-39 (Dec. 20, 2017). All other challenged claims were found unpatentable.

written decisions finding one or more claims unpatentable—where petitioners relied exclusively on either §102 or §103—were based solely on §103. *See* Ex-1110. Additionally, most of AICP's disclaimed claims were challenged on obviousness grounds only, which seems inconsistent with AICP's position that only anticipatory grounds have merit. *Cf.* 37 C.F.R. § 42.73(b) (explaining that disclaimer of all claims in the proceeding may be construed as adverse judgment).

Regardless, the merits here are strong, well-supported, and well-reasoned, and the obviousness positions are straight-forward. TSMC's Petition presents two references that each disclose the claimed transistor structure identically, including the claimed silicon nitride film. When combined with an exemplary reference that demonstrates the well-known application of using such a "silicon nitride film [to] cause[] first stress in a gate length direction of a channel region in the first active region," the remaining claims are obvious. *See* Paper 1, at 5-7, 48-49, 86-87; Ex-1003 ¶¶63-66, ¶¶341-346, ¶¶579-584.

Faced with TSMC's Petition, AICP voluntarily disclaimed 24 of the 35 challenged claims, underscoring the strength of TSMC's Petition.[11] As Section III.D

[11] Contrary to AICP's transparent suggestions otherwise, TSMC did not challenge all claims to "undercut" overlap between the IPR and district court. Paper 6, at 4-5 n.1, 36 n.8. TSMC challenged those claims because they are invalid, nearly identical

discusses, the disclaimed claims and the remaining ones are nearly identical. *See* Ex-1003 ¶¶77-93 (comparing all claims). The remaining claims add only that the claimed "silicon nitride film causes first stress in a gate length direction of a channel region in the first active region"—an undeniably conventional and ubiquitous feature in the art, including commercial applications. AICP does not dispute that. TSMC's Petition identifies no less than ***fourteen*** references that teach it, including several that expressly note that depositing a strained silicon nitride film was "[a] commonly used method for applying stress to the channel region." Paper 1, at 48 (quoting Ex-1006 ¶[0002] and further citing Ex-1006 ¶[0003]; Ex-1028, 1-2; Ex-1031 ¶[0003]; Ex-1029 ¶[0090]); *see also id.* at 6-7 (explaining "it was also common to induce strain [to a channel region] by applying stressed films" (citing Ex-1025, 2, 4; Ex-1028, 1-2, 13; Ex-1006 ¶[0003]; Ex-1029 ¶[0090]; Ex-1030, 1-2, Figs. 1-7; Ex-1023, Fig. 5(c); Ex-1031 ¶[0003]); Ex-1035, 1-7; Ex-1032, 4; Ex-1027 ¶¶[0038]-[0039], FIG. 6; Ex-1041, 12:19-29, 14:13-17, 15:60-62, FIG. 2I, 4B; Ex-1038, 6:23-31, FIG. 4; Ex-1019, 6:54-58, FIG. 13; Ex-1010, 23.

AICP does not dispute (nor could it) that TSMC's prior art references disclose "the claimed structure" and the above limitation. AICP instead argues there was no

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to the asserted claims, and were not legally precluded from being added to the district court.

reason to combine the references as asserted in TSMC's Petition. *See* Paper 6, at 4. The Petition, however, expressly states that "[a] POSITA would have selected Aoyama's etch stopper layer 145 as ***a tensile etch stop layer for both PMOSFET and NMOSFET devices, which was well known in the art, because it provides improved NMOSFET electron mobility***." Paper 1, at 48-49 (citing Ex-1006 ¶¶[0037]-[0039], FIG. 10; Ex-1027 ¶¶[0038]-[0039], FIG. 6; Ex-1028, 1-2; Ex-1030, 1-2; Ex-1023, Fig. 5(c); Ex-1003 ¶¶344-345); *see also id.* at 86-87 (similar). That position is bolstered by extensive prior-art evidence, supported by Dr. Thompson's testimony, that addresses the very points AICP raises. *See* Ex-1003 ¶¶344-345. Moreover, the '686 patent provides the very same reasoning, a fact AICP conveniently ignores. *Compare* Ex-1001, at 28:27-30 (explaining "the drive capability of the n-type MIS transistor can be improved"), *with* Ex-1006 ¶[0033] (teaching a strained silicon nitride film that "introduces compressive stresses in the respective channel regions" such that "the device drive currents … are increased").

AICP's attempt to distract from the merits by pointing to TSMC's enablement contention in district court also fails. *See* Paper 6, at 37-38. There is no inconsistency between that contention and the Petition. TSMC's lack-of-enablement contention is based on AICP's unreasonable and twisted application of the above limitation to the accused technology. *See* Ex-2016, at 278-79. The use of strained silicon nitride films

to cause stress in the channel region was well-known, as TSMC's Petition corroborates with extensive evidence (as noted above).

3. Material Error by the Examiner During Prosecution Weighs Against Discretionary Denial

When the Office materially errs during prosecution, it counsels heavily against discretionary denial. *See Microsoft Corp. v. Partec Cluster Competence Ctr. GmbH*, IPR2025-00318, Paper 9, at 3 (June 12, 2025) (referring to the panel, despite a later trial date, because "Petitioner appears to show a material error by the Office and it is an appropriate use of Office resources to review the potential error"); *Tesla, Inc. v. Charge Fusion Techs., LLC*, IPR2025-00152, Paper 11, at 2 (June 12, 2025) (referring to the panel) ("Petitioner provides persuasive evidence that the Office erred in a manner material to the patentability of the challenged claims by overlooking the teachings of [a reference during prosecution]."); *Anthony*, IPR2025-00559, Paper 12, at 2 (referring to the panel and finding that petitioner's showing of material error favored referring to panel for 17- and 18-year old patents). Weighing heavily against discretionary denial here, the examiner committed material error by overlooking an anticipatory embodiment of the prior art cited against the claims, as well as another key disclosure in different prior art cited against the claims.

During prosecution the examiner cited one embodiment in Aoyama (Ex-1005) but overlooked another that anticipated several pending claims and rendered all

claims obvious. *See, e.g.*, Paper 1, at 9-10, 100-01. The overlooked Aoyama third embodiment discloses all the structural limitations of the remaining claims, including the claimed silicon nitride film. And it was thoroughly well-known to use a strained silicon nitride film to stress the channel, as corroborated by at least ***fourteen*** exemplary cited references. *See* Paper 1, at 5-7, 48-49, 86-87; Ex-1006 ¶¶[0036]-[0039], FIGS. 10-13. Hsu823 (Ex-1006) explains, for instance, that a strained silicon nitride film is "[a] commonly used method for applying stress to the channel region." Ex-1006, ¶[0003]; *see also id.* ¶[0002]. This Petition includes invalidity grounds that combine this teaching with the very same embodiment of Aoyama overlooked during prosecution, giving the Board an opportunity to correct the examiner's material error.

The examiner never made any observations about the overlooked Aoyama embodiment, much less the well-known use of a strained silicon nitride film to stress the channel region. Additionally, the examiner overlooked the teachings in another reference applied to reject claims. It discloses the use of a strained silicon nitride film, like the one in Aoyama, to stress the transistor's channel region. *See* Ex-1019, 1:58-2:22 (noting "the contact etch stop layers' ability of applying stresses"[12]).

[12] Although that ability may be "degrad[ed]" in a gate-last approach, Ex-1019, 2:8-22, degradation is not elimination.

The examiner, however, apparently overlooked that teaching, not to mention countless others never located. Instead, the examiner allowed claims 25-35, stating only that it was "allowable over the prior art of record." Ex-1002, at 270. The examiner's material error weighs heavily against discretionary denial. *See Partec*, IPR2025-00318, Paper 9, at 3 (referring to the panel); *Tesla v. Charge Fusion*, IPR2025-00152, Paper 11, at 2 (same); *Anthony*, IPR2025-00559, Paper 12, at 2 (same).

4. The Complexity of the Case and Technology Weighs Against Discretionary Denial

AICP admits the district court case is "complex." Paper 6, at 34, 43-46. AICP does not dispute the complexity of the underlying technology,[13] which involves complicated semiconductor processing, or that trained PTAB judges would be better suited than a lay jury to assess validity. And AICP concedes that a proceeding to address validity "at the ***same time*** in a ***single*** proceeding that binds ***all*** relevant parties" would be preferable. Paper 6, at 42-43 (emphasis in original); *see also id.* at 16-17, 19. Contrary to AICP's suggestion otherwise, that describes the Board, not the district court. Accordingly, the complexity of the case and technology both weigh

[13] A POSITA would have had at least a master's degree in electrical engineering, physics, materials science, or a related field and at least three years of work experience in the field. *See* Paper 1, at 10.

against discretionary denial. *See, e.g.*, *Tesla v. Navy*, IPR2025-00341, Paper 12, at 2-3 ("[T]he complex and diverse litigation proceeding tip[s] the balance against discretionary denial."). Especially considering TSMC's and UMC's extraordinarily broad stipulations, TSMC's Petition would significantly streamline the parties' validity dispute and simplify, or even eliminate, matters for the district court as Congress envisioned. *See* 77 Fed. Reg. at 48612.

The UMC and TSMC cases are consolidated only for ***pre-trial*** purposes, as AICP admits. *See* Paper 6, at 44. The court would need to hold two separate jury trials, one for UMC and one for TSMC, and resolve two separate rounds of post-trial briefing. Each of those efforts would involve seven patents related to different aspects of semiconductor fabrication and design, a highly complex field. The court's trial and post-trial work would double. The Board, however, can resolve the invalidity issues in a single proceeding, which would be more efficient than having the parties and the court proceed with two different jury trials before two different juries to resolve the same invalidity issues covering seven patents.[14] *See Tesla v.*

[14] AICP incorrectly claims "the six other patents with closely related subject matter that Petitioner is challenging in parallel IPR petitions." Paper 6, at 2. They are only "closely related" in the sense that they involve MOSFETs and AICP bought them from the same entity. The MOSFET technology described and claimed in the patents, however, is not closely related to the '686 patent.

Navy, IPR2025-00341, Paper 12, at 2-3 ("[T]he complex and diverse litigation proceeding tip[s] the balance against discretionary denial."); *Tesla v. Intell. Ventures II*, Paper 10, at 2-3 (same). Indeed, UMC has sought joinder, agreeing to act as an understudy. *See* Ex-1097; Ex-1095; Ex-1096; Ex-1094; Ex-1098; Ex-1099; Ex-1100. The Board thus would need to adjudicate each patent only once, whereas the district court would need to adjudicate each one multiple times.

Patent Owner's reliance on *Nokia* is unavailing. *See* Paper 6, at 43-44. Unlike this case, the scheduled trial date in *Nokia* was more than seven months before the FWD deadline. And, importantly, the petitioners in *Nokia* did not offer the strong, reciprocal stipulations TSMC and UMC have offered here, which are much broader than has been recently found sufficient to overcome other *Fintiv* factors and weighs against discretionary denial. *See, e.g.*, *Tesla v. Navy*, IPR2025-00341, Paper 12, at 2.

The complexity of this case and the considerable simplification of issues that would result from having the Board consider TSMC's Petition thus weigh against discretionary denial.

5. AICP's Alleged Foreign Discovery Needs Do Not Favor Discretionary Denial and Should Be Ignored

AICP argues that it "requires third-party discovery from foreign custodians in Japan, which the district court is best suited to facilitate." Paper 6, at 34; *see also id.* at 4-5, 41-43. To hear AICP tell it, "discovery may reveal that Hsu823 is not prior

art at all, a result that would be fatal to all grounds in the Petition." *Id.* at 4. Yet AICP alleged a priority date based solely on the '686 patent's priority claim. *See* Ex-1091, at 5-6 ("The asserted claims of the '686 Patent claim priority to Japanese Patent Application No. 2008-064435, which has a priority date of March 13, 2008."); E.D. Tex. P. R. 3-1(e). And AICP has failed to request such discovery in district court, despite having more than six months to do so. *See generally* Ex-1092.

Even putting that aside, AICP's suggestion that it might somehow antedate Hsu823 (or Aoyama, *see* Paper 6, at 41) strains credulity.

First, AICP has no basis to allege an earlier priority date. The district court's local patent rules require a plaintiff, in its initial infringement contentions, to identify, "[f]or any patent that claims priority to an earlier application, the priority date to which each asserted claim allegedly is entitled." E.D. Tex. P. R. 3-1(e). AICP did not. *See* Ex-1091 at 5-6.

Second, AICP has not sought such discovery. *See generally* Ex-1092.

Third, Hsu823 predates the patent by ***two years***. To suggest, without evidence, that the original patent owner might have invented the '686 patent two years before the application lacks credibility. That is especially true in the semiconductor industry, where a new generation of technology was being brought to market every two years. *See* Ex-1118 (figure showing historical timeline of process node development).

Fourth, as to Aoyama, that reference was the basis for rejection during prosecution. *See* Ex-1002, at 200-02. The original applicant could have antedated Aoyama at that time. It did not, presumably because Aoyama was filed ***a year*** before the '686 patent—quite a significant gap. It is not plausible to suggest AICP might uncover 20-year-old evidence from the original inventor when the original applicant itself did not produce such evidence during prosecution.

Fifth, any evidence would now be nearly 20 years old and difficult to obtain.

AICP's alleged need for foreign discovery thus should be disregarded.

6. No Forum Has Adjudicated Any Claim of the '686 Patent, Which Weighs Against Discretionary Denial

No forum has yet considered the validity of the '686 patent. The only cases involving the '686 patent are the two district court actions against TSMC and UMC and their respective Petitions. *See* Ex-1103. No claim of the '686 patent has been reexamined, and the '686 patent has not been reissued. *See* Ex-1104.

IV. *Inter Partes* Review of This Patent Is an Appropriate Use of Office Resources in View of the Compelling National Security, Economic, and Public Interest Considerations

Compelling economic, national security, and other public interest considerations all make *inter partes* review of this patent an appropriate use of the Office's resources—indeed, a compelling one. TSMC and its technology are not just important contributors to the American economy and American innovation; TSMC's

technology and investments are vital to the national goals of protecting the U.S. supply chain in high-tech industries and preserving U.S. leadership in artificial intelligence (AI), as the President, the Secretary of Commerce, and the Administration more broadly have recognized. AICP seems to use this erroneously issued patent against TSMC technology and investments that are furthering vital U.S. national interests and Administration priorities. The Administration has a heightened interest in ensuring that the USPTO corrects its error in issuing this patent. The Board, with its specialized resources and efficient processes, is best suited to correct the examination errors that TSMC's petition has identified and to vindicate the settled expectations of TSMC's customers in defense, AI, 5G, cloud computing, data-center, health, and other sectors who have come to depend on its technology over the years.

TSMC does not ask the USPTO lightly to use its resources. TSMC holds around 40,000 issued U.S. patents and is a true stakeholder in a well-balanced, efficient U.S. patent system that promotes strong patents. TSMC brings only meritorious challenges—like this one—to the Board: 100% of its instituted IPRs reaching FWD have found the challenged claims unpatentable, and 94% of its IPR petitions have been instituted (counting by challenged patents). *See* Ex-1086; Ex-1106. AICP has no true settled expectations at stake here. But regardless, these compelling economic, national-security, and public-interest considerations make

this IPR an appropriate and efficient use of the Office's resources and expertise—and an important step in furthering the Administration's priorities.

A. TSMC's Investments and Strong Presence in the United States Weigh Against Discretionary Denial

As the Secretary of Commerce recently explained, "President Trump has made it a fundamental objective to bring semiconductor chip manufacturing home to America," praising that "TSMC, the greatest manufacturer of chips in the world, is coming to America with a $100 billion investment." Ex-1119. TSMC's two decades of investment in the United States, carrying through to its recent announcement of $165 billion (the largest single direct investment into the U.S. by a foreign company in history), are carrying out that top Administration objective. Ex-1139; *see also* Ex-1143, at 8 (President Trump praising TSMC's CEO). Through its investments in facilities in Washington state and Arizona, TSMC has created significant job opportunities and will create tens of thousands of jobs in the supply chain. Ex-1120; Ex-1142.

TSMC's investment in the United States dates back nearly 30 years, when it invested in a fabrication complex in Camas, Washington. Ex-1120. As of 2024, that facility employs 1,100 workers. In 2020, TSMC expanded its investment in the United States by choosing Phoenix, Arizona, for its advanced U.S. semiconductor manufacturing site. Ex-1142. Construction on the 1,100-acre campus began in

April 2021, with 4nm node production commencing at the first fabrication plant in 2024, followed by construction of a second fabrication plant completed this year, with 3nm node production targeted to commence in 2028. Ex-1140. And in April 2025, TSMC broke ground on the site of a third fabrication plant for 2nm node advanced technologies and beyond, with Secretary of Commerce Lutnick in attendance. *See id.*; Ex-1121.

According to an analysis by the Greater Phoenix Economic Council (GPEC), TSMC's investment even in just those three fabrication plants in Arizona will create more than 20,000 accumulated unique construction jobs and tens of thousands of indirect supplier and consumer jobs. Ex-1140. The GPEC estimates that, for Arizona alone, TSMC's presence will generate an estimated $1.2B in direct tax revenues plus $195.1M in indirect tax revenues—a total of $1.4B—over a 13-year period. Ex-1142. GPEC further estimates that TSMC's investment will create $32.9B in economic output, with $17.2B in direct economic output and $15.6B in indirect output. *Id.*

That is not even the half of it—literally. In March 2025, TSMC announced it would expand its investment in advanced semiconductor manufacturing in the United States by an additional $100 billion. Ex-1139. "Building on the company's ongoing $65 billion investment in its advanced semiconductor manufacturing operations in Arizona, TSMC's total investment in the United States is expected to

reach $165 billion." *Id.* The expansion includes plans for three new fabrication plants (a total of six), two advanced packaging facilities and a major R&D team center, solidifying TSMC's Arizona project as the largest single foreign direct investment in U.S. history. *Id.* TSMC's expanded investment is also expected to support 40,000 construction jobs over the next four years and to create tens of thousands of jobs in advanced chip manufacturing and R&D. *Id.*

TSMC's commitment to the United States includes investment in the future. TSMC has partnered with Arizona State University to develop future talent, enhance education, develop and accelerate cutting-edge research, and strengthen the U.S. microelectronics ecosystem. Ex-1140. As the President of TSMC Arizona explained, "When making the decision to expand in the U.S., one of the considerations was access to world-class engineering talent to help us operate the most sophisticated engineering technology in the world." Ex-1141, at 3. In addition to its investment in ASU, TSMC has partnered with more than ten other universities in the United States to promote research and development. *See* Ex-1122, at 1-3. For example, TSMC has partnered with Purdue University to help launch its Center for Secure Microelectronics Ecosystem (CSME), a first-of-its-kind global partnership of academia, industry and government to advance research and workforce development in designing secure microelectronics. *Id.* at 2.

B. TSMC's Vital Role in The Supply Chain and Its Importance to U.S. National Security Weigh Against Discretionary Denial

As Secretary Lutnick explained in an interview from TSMC's Arizona location in April 2025, "national security" is the "key" reason to "bring semiconductors home." Ex-1123, at 2. That has been a key principle of President Trump's agenda: "Our national security depends on bringing our supply chain home. This is especially true when we are dealing with critical technology, computer chips that are not only important to our civilian world … but also to our military." Ex-1111, at 40.[15] Those considerations strongly support the Administration's review of AICP's patents asserted against TSMC products that have been well established in the market since before AICP existed. TSMC plays a vital role in the U.S. supply chain. According to some reports, TSMC provides around 90% of the world's advanced chips, *see* Ex-1147, which are crucial for innovation in AI—an area in which the President has called for the United States to remain dominant. The

[15] *See also* https://rollcall.com/factbase/trump/transcript/donald-trump-remarks-economic-investment-united-states-march-3-2025/#2 (President Trump stating that TSMC's investments are "a tremendous move," "a matter of economic security," and "a matter of national security"); https://rollcall.com/factbase/trump/transcript/donald-trump-speech-nrcc-republican-dinner-april-8-2025/#161 (describing TSMC as a "great company … biggest chip company in the world" and "spending $200 billion in Arizona, building one of the biggest plants in the world"); https://www.youtube.com/watch?v=tGPWU3NmbVE, at 0:05-0:23, 0:30-0:44 (praising TSMC in Arizona); https://www.youtube.com/watch?v=hKvIyvmzybc, at 0:30-0:44 (discussing TSMC's Arizona investment).

ultimate basis of AICP's patent assertion is the incorporation of TSMC's chips in U.S. companies' products; AICP alleges that most of TSMC's sales are to U.S.-headquartered companies. *See* Ex-2001 ¶¶8-25. It is difficult to imagine a more compelling case for the use of the Board's resources than this one, given the extraordinarily broad impact of TSMC's technology on the U.S. economy and national security.

TSMC-built chips power the vast majority of electronic devices in the world, including smartphones, laptops, computer services and other devices used in cars and consumer goods. Ex.-1124, at 2. Major TSMC customers include Apple, NVIDIA, AMD, Broadcom, Qualcomm, and many others. NVIDIA and other major companies also purchase chips from TSMC to resell to other large companies such as Microsoft, Meta, Alphabet, Amazon, and Tesla (who are themselves direct TSMC customers). *See generally* Ex-1112, at 7. TSMC started working with some of these companies (including NVIDIA and Broadcom) when they were just startups, providing access to TSMC technologies and manufacturing capacity to help them grow and thrive. Ex-1125, at 1.

TSMC is a global leader in AI technology and the manufacture of AI chips. AI applications require immense computational power, which in turn require high-performance chips. As the world's largest contract chipmaker, TSMC is "steering" the AI wave that "[m]any tech giants are currently riding." Ex-1126, at 2.

The U.S. government has recognized the importance of AI to the national security. On January 23, 2025, the President issued an executive order stating: "It is the policy of the United States to sustain and enhance America's global AI dominance in order to promote human flourishing, economic competitiveness, and national security." Ex-1129, at 1. TSMC's commitment to build chips in Arizona is an important part of the Administration's American AI-dominance strategy. *See* Ex-1130 (Ansys collaboration); Ex-1131 (Cadence collaboration). TSMC partners with companies, such as Apple, NVIDIA, and AMD, to manufacture chips at its Arizona fabrication plants. Ex-1138, at 8; Ex-1133, at 3-4; Ex-1121; Ex-1148; Ex-1149. In April 2025, TSMC's Arizona fab began producing NVIDIA's next-generation Blackwell AI chips for NVIDIA's AI supercomputers. "Manufacturing NVIDIA AI chips and supercomputers for American AI factories is expected to create hundreds of thousands of jobs and drive trillions of dollars in economic security over the coming decades." Ex-1134, at 2.

TSMC's importance to the U.S. economy extends well beyond AI. Among other things, TSMC makes semiconductors used in F-35 fighters and a wide range of "military-grade" devices used by the Department of Defense. Ex-1135, at 5; Ex-1115, at 59 ("[T]he U.S. Department of Defense rel[ies] heavily on Taiwan foundries (particularly TSMC) to manufacture the computer chips needed for their products."); Ex-1136, at 2-3 (noting that TSMC is the world's leading manufacturer

of chips for radar systems). Independent observers have identified the positive impact on U.S. national security and on the F-35 in particular, from "the effort to have advanced semiconductor fabrication facilities onshored in Arizona." Ex-1137, at 2.

C. TSMC Is a Top Patent Filer in the United States with Thousands of Issued U.S. Patents and a Consistent Track Record of Pursuing Only Meritorious Challenges

In addition to TSMC's contributions to the U.S. economy, national security, and supply chain, TSMC is an active and engaged participant in the U.S. patent system. TSMC is a major innovator that demonstrates deep regard for patent rights and is justifiably proud of its track record of bringing meritorious challenges to the Board. TSMC is a credible stakeholder in a strong, efficient, and robust patent system.

"As one of the largest U.S. patent holders, TSMC strongly believes in the patent system." Ex-1113, at 1-2. TSMC isone of the most frequent patent filers in the U.S., with a 99% allowance rate for its U.S. applications since 2019. *See* Ex-1144 (allowance rate); Ex-1113, at 1. TSMC has maintained a top-2 ranking for U.S. patent applications from 2022-2024 and has reached historical high of top-2 for U.S. patent grants in 2024. Ex-1145; Ex-1146.

Consistent with that belief, TSMC recognizes that some patents should not have issued, and it has a successful track record in challenging patents that threaten

to block real innovation. "Only high-quality patents—those that represent a true technological advance—fulfill the patent system's goal of fostering innovation," where "[i]mproperly issued patents are inefficient, wastes resources, stifle innovation, and increase prices for consumers." Ex-1113, at 2. For petitions that reached a FWD, TSMC has a 100% success rate of demonstrating that one or more claim was unpatentable. *Id.* at 1; Ex-1106. Similarly, of TSMC's petitions that reached an institution decision, 94% were instituted (counted by patent). Ex-1086.

This Petition continues that trend of quality: TSMC has not deviated from its track record of meritorious challenges, and instituting this IPR is likely to eliminate the need to litigate the asserted claims in court.

D. AICP Has Not Contributed to the U.S. Economy or National Security

AICP has presented no considerations that can outweigh TSMC's many contributions to the U.S. national interests. AICP has no expectations to unsettle; its theory is that the use of TSMC's chips by U.S. customers infringes a patent that issued ***after*** TSMC began manufacturing chips using the accused technology. AICP just seeks to ***disrupt*** settled expectations by TSMC, its customers, and the extensive investment that underlies the adoption and use of TSMC chips in the United States.

V. The Board's Resources Would Be Well Spent on This IPR

As noted above, TSMC has a strong record of success at the Board, bringing very meritorious challenges. TSMC's institution and FWD rates both significantly exceed Board averages. The same quality challenges are present here, where TSMC's Petition shows clear errors made during prosecution. Consequently, the asserted claims are likely to become moot, greatly simplifying any remaining disputes for the court. Regardless, simply by instituting IPR, TSMC's and UMC's broad and reciprocal stipulations guarantee a simplification of issues in district court by removing ***all*** prior art, including system art, from the parallel proceedings. *See supra* Section II.

VI. Conclusion

For the foregoing reasons, this Petition should be referred to the Board panel with instructions to consider the merits.

Dated: July 18, 2025

Respectfully submitted,

/ J. Preston Long /

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CERTIFICATE OF COMPLIANCE

As calculated by the "Word Count" feature of Microsoft Word for Microsoft 365, the foregoing **Petitioner's Opposition to Patent Owner's Discretionary Denial Request** contains 13,908 words, excluding this Certification and the following: Table of Contents, Table of Authorities, and Certificate of Service.

Dated: July 18, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **Petitioner's Opposition to Patent Owner's Discretionary Denial Request** was served on July 18, 2025, via e-mail directed to counsel of record for Patent Owner at the following:

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Patent Owner has consented to electronic service via email.

Dated: July 18, 2025

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