

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.

IPR2025-00831
U.S. Patent No. 8,587,076

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

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Patent Trial and Appeal Board
U.S. Patent & Trademark Office
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I. Introduction

Referral of this petition to the Board is warranted. There will be no risk of duplicative litigation under the stipulation proffered by TSMC and United Microelectronics Corporation (“UMC”). The Office materially erred by overlooking multiple prior art references, including the Petition’s single-reference §103 grounds. The Applicant violated its duty of candor by withholding material information about statements during foreign prosecution. Such unfair dealing by Applicant should not be rewarded with discretionary denial. And compelling economic, national security, and other public interest considerations, and other *Fintiv* factors all make *IPR* of this patent an appropriate use of the Office’s resources, warranting the referral.

First, TSMC has proffered an extraordinarily broad stipulation removing absolutely any overlap between the IPR and parallel litigation by foregoing all §§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 provides a true alternative to adjudicate invalidity, and the Board, with its specialized resources and efficient processes, is best suited to correct the examination errors that TSMC’s petition has identified.

Second, the Office materially erred by overlooking at least five prior-art references included in the ’076 patent’s file wrapper—three of which were cited by the Japanese Patent Office Examiner to reject pending claims of the JP counterpart

of the '076 patent, one of which was cited by both the Japanese Examiner and the Chinese Patent Office Examiner to reject pending claims of the CN counterpart, and the final cited by only the Chinese Patent Examiner and by failing to identify Kamata and Guha, each presented as single-reference §103 grounds.

Third, the merits of TSMC's Petition are exceedingly strong. TSMC presents five separate bases for unpatentability—four are single-reference §103 grounds and the fifth is a combination relying on secondary reference solely for the teaching of a well-known feature.

Fourth, Applicant withheld material information about the rejection by the Chinese Examiner and Applicant's acquiescing response and claim amendments during prosecution of the Chinese counterpart and withheld material information about rejection by Japanese Examiner and Applicant's acquiescence response and claim amendments during prosecution of the Japanese counterpart, in violation of its duty of candor. Applicant's unfair dealings during prosecution should not be rewarded with discretionary denial.

Fifth, compelling economic, national security, and other public interest considerations all make *IPR* of this patent an appropriate use of the Office's resources—indeed, a compelling one. Secretary Lutnick explained, as a key principle of President Trump, that “national security” is the “key” reason to “bring semiconductors home.” President Trump also 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." TSMC, a trusted foundry and the world largest chip maker (providing around 90% of the world's advanced chips), is vital to the US supply chain with a wide range of applications, including AI (e.g., NVIDIA's AI supercomputers) and military/defense applications (e.g., the F-35 stealth fighter). Given TSMC's vital and strategic contribution in the US supply chain, the Administration has a heightened interest in ensuring that the USPTO corrects its error in issuing this patent.

Finally, other factors also warrant the referral. For example, 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. The challenged claims were never asserted before AICP acquired the '076 patent in 2024. And TSMC's accused 28 nm technology launched *before* the '076 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. As a further example, this case involved complicated semiconductor technologies that trained PTAB judges would be better suited to adjudicate invalidity.

For at least the reasons below, discretionary denial is not appropriate. TSMC's Petition should be referred to the Board for merits assessment.

II. Referral is Warranted by Petitioner's Broad Stipulation Ensuring No Overlap between IPR and litigation

TSMC and UMC provided extraordinarily broad and reciprocal stipulations to AICP. (TSMC-1034; TSMC-1084.)¹ Those stipulations provide the same offer 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.

¹ TSMC would not oppose a reply from AICP to address these stipulations. To the extent AICP reiterates its objections from related IPRs that the stipulations are untimely (*see, e.g.*, IPR2025-00682, Paper-14, 1-2), TSMC disagrees—TSMC filed its stipulation quickly in response to recent and rapid evolution in the rules of discretionary denial. *Compare Shenzen Tuozhu Tech. Co. v. Stratasy, Inc.*, IPR2025-00438, Paper-10, 3 (July 17, 2025) (referring, in part due to “broad stipulation” going well beyond a *Sotera* stipulation), *with Shenzen Tuozhu Tech. Co. v. Stratasy, Inc.*, IPR2025-00354, Paper-11, 2-3 (June 12, 2025) (denying institution despite *Sotera* stipulation).

- 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.

(TSMC-1034, 1-2.) UMC provided equally broad and reciprocal stipulations on all asserted AICP patents. (*See generally* TSMC-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, 2 (June 13, 2025); *Tesla, Inc. v. Intell. Ventures II*, IPR2025-00339, Paper-9, 2 (June 13, 2025). They would ensure this IPR, if instituted, would be a true alternative to litigation and simplify issues in district court.

III. Referral is Warranted in View of the Material Errors by the Examiner and the Strong Technical Merits of the Petition

A. Examiner Materially Erred by Overlooking Five References in the File Wrapper, Relied Upon to Reject International Counterparts, and Two Single-Reference Obviousness References

When the Office materially errs during prosecution, it counsels heavily against discretionary denial. During prosecution, the U.S. Examiner overlooked three prior-art references included in the '076 file wrapper, which were relied upon by the Chinese Examiner to reject as-filed claims of the CN counterpart, including a claim having substantially the same scope as issued U.S. claim 1. (*See* TSMC-1157, 1-3.) The U.S. Examiner also overlooked four prior-art references in the file wrapper (one overlapping with the CN references), two of which the Japanese Examiner relied on to reject all as-filed claims of the JP counterpart, including one claim substantially similar to issued U.S. claim 1, and two of which were later relied upon to reject amended claims. (*See* Paper-2, 16-18.).

Second, the U.S. Examiner further failed to identify the numerous prior art references invalidating challenged claims, including the two single-reference §103 grounds and a primary reference combined with a well-known feature presented in the Petition.

These failures alone and collectively constitute material errors, warranting referral of the Petition to a panel for review of these errors. *See, e.g., Microsoft Corp.*

v. Partec Cluster Competence Ctr. GmbH, IPR2025-00318, Paper-9, 3 (June 12, 2025) (referring to panel, despite later trial date, because review of “material error” is “appropriate use of Office resources”); *Tesla, Inc. v. Charge Fusion Techs., LLC*, IPR2025-00152, Paper-11, 2 (June 12, 2025) (referring to the panel where “Office erred in a manner material to the patentability of the challenged claims by overlooking the teachings of [a reference during prosecution].”); *Anthony Inc. v. ControlTec, LLC*, IPR2025-00559, Paper-12, 2 (referring to panel where reference not considered during prosecution showed material error for 17- and 18 year-old patents).

1. Examiner Materially Erred by Overlooking References Disclosing Claim Limitations and Relied Upon by Foreign Patent Offices to Reject Counterpart Claims.

During the extremely short prosecution of the '076 patent's claims, the Examiner issued a single office action rejecting the claims over U.S. Patent 6,992,358 to Hieda (“Hieda”). (See TSMC-1002, 129-131.) Applicant overcame the rejection by alleging Hieda lacked “a gate insulating film”, an “active region in the substrate”, and “a gate electrode”. (See TSMC-1002, 157-58.)

In mechanically applying the same Hieda anticipatory ground that was applied against every member of the family (§III.A.2), the Examiner did not consider any other references, either present in the file wrapper or easily identified by even a cursory search, despite numerous references disclosing the allegedly “missing”

elements from Hieda and the “*retracted from*” limitation [1E]. As Applicant knew, the prior art was replete with such references. (*See* §IV.) The Examiner made material errors by overlooking such references, including the exemplary references highlighted below.

The Examiner erred by overlooking JP-Ono. JP-Ono was included in the file wrapper with the filing of the '076 patent, along with a Chinese Patent Office Action rejecting the Chinese counterpart application. (TSMC-1002, 74.) Importantly, Applicant filed only a partial translation, neglecting to provide a translation of the most material aspect of the Office Action—how the Chinese Examiner mapped the prior art to the claim limitations. (TSMC-1156, 18-21.) The Chinese Office Action rejected the pending claims, including those having substantially the same scope as U.S. claim 1, based on JP-Ono. (TSMC-1156, 18-19.) Similarly, the Japanese Examiner found JP-Ono disclosed the limitations of all examined JP claims, including those having substantially the same scope as issued U.S. claims 1 and 5. In both prosecutions, Applicant acquiesced to the Examiners’ respective determinations that JP-Ono invalidated the claims (including disclosing

the elements Applicant alleged were missing from Hieda), and narrowed the claims to add first and second insulating sidewall limitations².

The Examiner erred by overlooking Kajiyama and JP-Matsumoto. Kajiyama and JP-Matsumoto were also included in the '076 file wrapper. (TSMC-1002, 74.) The Japanese Examiner found Kajiyama and JP-Matsumoto disclosed the features of amended JP claims, including an independent claim having limitations allegedly missing from Hieda. (*See* TSMC-1005, 14-16.)

The Examiner erred by overlooking Henson. Henson was also included in the '076 file wrapper. The Chinese Examiner applied Hensen to reject the “notch” limitation (associated with U.S. claim 1’s “*retracted from*” limitation and U.S. claim 5). (*See* TSMC-1156, 19.)

Despite their significance, these references were not discussed by the U.S. Examiner during prosecution of the '076 patent. Had the Examiner relied upon these references, the Examiner would not have allowed at least claims 1 and 5, consistent with the Chinese and Japanese Patent Office decision.

² None of the full translation of the CN Office Action, Applicant’s acquiescing response and amendment to the CN Office Action, the JPO’s notices of rejection, or the Applicant’s acquiescing responses and amendments in the JPO were brought to the attention of the U.S. Examiner. (§IV.)

The Examiner erred by overlooking Kamata and Guha. The Examiner considered neither Kamata nor Guha during prosecution of the '076 patent, nor any other obviousness grounds resembling those in the Petition. The Petition establishes that three separate embodiments in Kamata, as a single-reference §103 ground, each individually renders claims 1-3 and 7-13 obvious, including the elements Applicant argued against Hieda. (*See* Paper-2, 21-34.) Similarly, the Petition establishes that Guha, as a single-reference §103 ground, renders claims 1-3, 7-8, and 10-13 obvious, including those same elements. (*See* Paper-2, 46-57.)

The facts surrounding JP-Ono, Kamata, and Guha in this case are stronger than the facts in *Anthony* and *Microsoft v. XI*, IPR2025-00253, where the Director denied the patent owner's request for discretionary denial and referred the case.

In *Anthony*, Petitioner argued the examiner materially erred by granting the challenged claims without issuing an office action. IPR2025-00559, Paper-9, 16 (May 27, 2025). Petitioner stressed the strength of one particular reference, Carter, which was not of record during prosecution of the challenged patent, explaining that “Carter is strikingly similar prior art” and operates in the same manner as the challenged patent. *Id.*, 15. The Director found “Petitioner persuasively explains the patent examiner erred by overlooking the teachings of Carter.” IPR2025-00559, Paper-12, 2 (July 16, 2025.)

In *Microsoft*, the patent owner contended the “examiner allowed the claims because, although the prior art of record taught ‘incremental searching,’ it did not teach incremental searching using two strings in the same field.” IPR2025-00253, Paper-13, 2 (June 25, 2025). The Petitioner persuasively showed that the “cited prior art”, which was not of record during examination, “teach both incremental searching as well as searching using two strings in the same field.” *Id.*

The facts here are stronger than *Anthony* and *Microsoft*. First, JP-Ono, JP-Matsumoto, Kajiyama, Kamata and Guha are stronger than “strikingly similar.” Both Kamata and Guha are presented in the Petition as single-reference §103 grounds. (Paper-2, 21-34, 46-57.) JP-Ono was relied upon by the Chinese and Japanese Examiner to reject claims having overlapping limitations as were Kajiyama and JP-Matsumoto. Additionally, as in *Microsoft*, all five references explicitly disclose the limitations allegedly missing from Hieda. (Paper-2, 16-18, 21-34, 46-57; TSMC-1002, 157-159.)

In sum, the Examiner allowed the ’076 patent claims only by overlooking at least five invalidating references. These material errors should be corrected by the Board and the Petition should be referred.

2. Family's Prosecution History Provides Further Evidence of Examiner's Material Errors

The existence material errors is also made abundantly clear from the Examiner's sole rejection which mechanically and unmindfully applied the same rationale to reject every family member of the '076 patent (even where visibly inapplicable), **and** from the perfunctory Notice of Allowance which was silent as to the limitations the Examiner deemed patentable. (TSMC-1002, 173.)

The Examiner first applied Hieda as an anticipatory reference during prosecution of U.S. Patent 7,579,227 ("the '227 patent"). (*See* TSMC-1158, 122-123.) Over the next 3 years, the Examiner applied Hieda as the sole anticipatory rejection of the independent claim in every divisional application in the family, including the '076 patent. (*See* TSMC-1159, 122-123 ('764 patent); TSMC-1008, 122-123 ('180 patent).) Even a cursory review of these Office Actions confirms the careless examination by the Examiner. Specifically, the prior-art rejection of the independent claim of the '180 patent appears to have been a "copy and paste" of the '227 patent's rejection—the rejection was directed to a '227 limitation requiring the thickness of the gate insulating film under the insulating sidewall be smaller than under the gate electrode, which is absent from the '180 patent claims. (*Compare* TSMC-1008, 124 *with* TSMC-1158, 123.) And in discussing the double-patenting rejection, the Examiner stated that "both U.S. Patent and instant application claims

a semiconductor device capable of implementing **a second insulating sidewall**” (TSMC-1008, 126.) But the ’180 patent **does not** include the “second insulating sidewall” limitation.

Again, for the ’076 patent, the Examiner issued the same Hieda and double-patenting rejections. (TSMC-1002, 133-134.) But the ’076 patent **does not** include the “second insulating sidewall” limitation, either. After Applicants’ response, the Examiner issued a notice of allowance, with the same statement—“invention is allowable after it was rejected as Obvious Double Patenting in the first office action”, without specifying limitations the Examiner deemed patentable. (TSMC-1002, 173.)

The only rationale for novelty ever articulated by the Examiner during prosecution of the entire ’076 patent family was the first and second sidewall limitations recited in the ’227 patent. And, **those first and second sidewall features are not present in any of the claims of the ’076 patent.** The allowance of the ’076 patent claims over prior art based on non-existing limitations constitutes a material error. *See Skullcandy, Inc. v. Earin AB*, IPR2025-00690, Paper-9, 2 (finding Petitioner “appears to show a material error by the Office” when Examiner cited features as “not anticipated by, nor made obvious over, the prior art of record” in the notice of allowance which were absent from challenged claims)); IPR2025-00690, Paper-7, 8 (July 16, 2025).

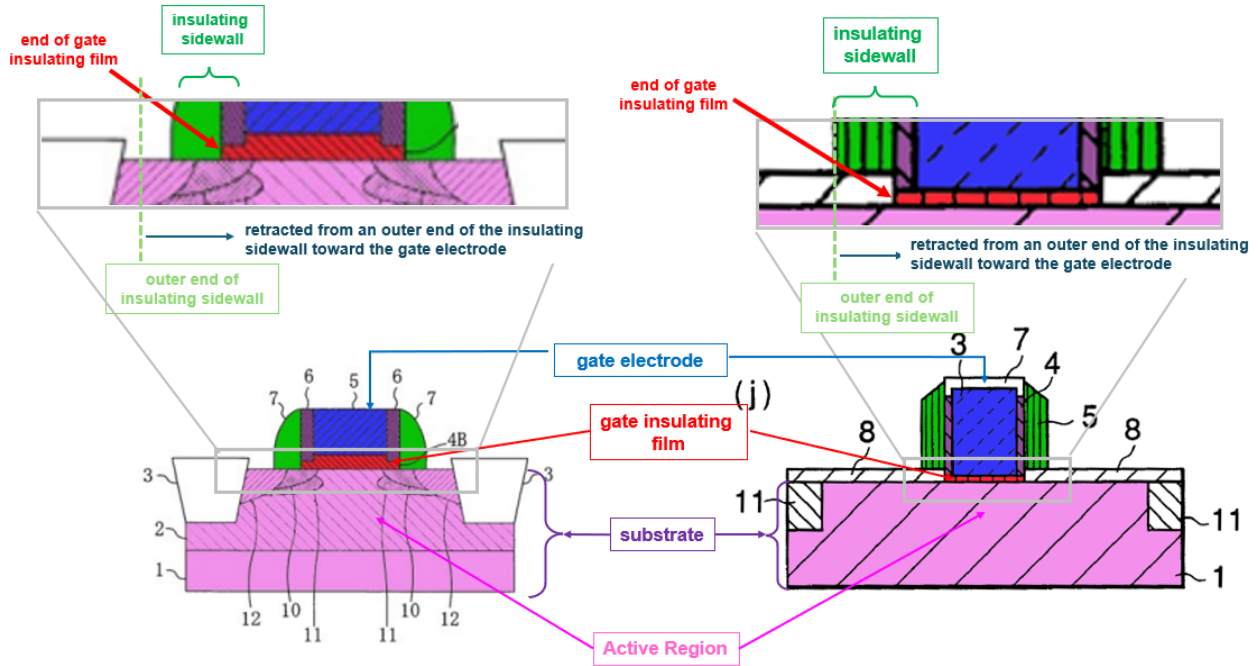
B. Five Invalidity Grounds, Including Four Single-Reference §103 Grounds, Disclose All Limitations of All Claims.

TSMC files strong IPR petitions, evidenced by its stellar track record: a 94% institution rate (by challenged patent) for petitions that reach institution³ and a 100% win rate in FWDs.⁴ (TSMC-1086; TSMC-1106, 1.) This petition is no different.

Here, the merits are strong, well-supported, and well-reasoned, and the invalidity positions are straightforward. Four are single-reference §103 grounds — Kamata (3 embodiments) and Guha; the fifth is Matsumoto used in combination with Yu or Ono which each provides only the explicit teaching of the well-known limitation that the high dielectric gate insulating film is a Hf-based oxide. The §103 grounds cover all the dependent claims based on the same primary references. The strength of TSMC's grounds is demonstrated by side-by-side figures below.

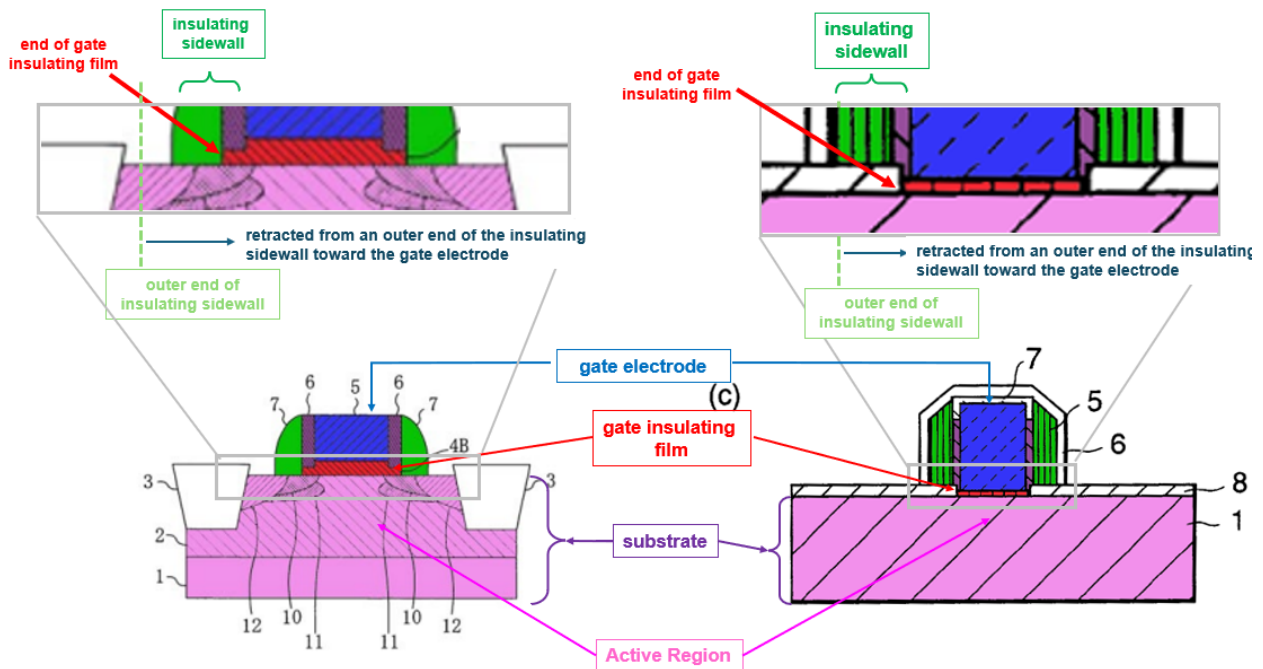
³ In other words, for all TSMC petitions reaching an institution decision, the Board has instituted one or more TSMC IPR on 94% of the challenged patents.

⁴ Amendment of single claim in 42 FWDs was allowed. *See TSMC v. Godo Kaisha IP Bridge 1*, IPR2017-01249, Paper 47, 34-39 (Dec. 20, 2017). All other challenged claims were found unpatentable.



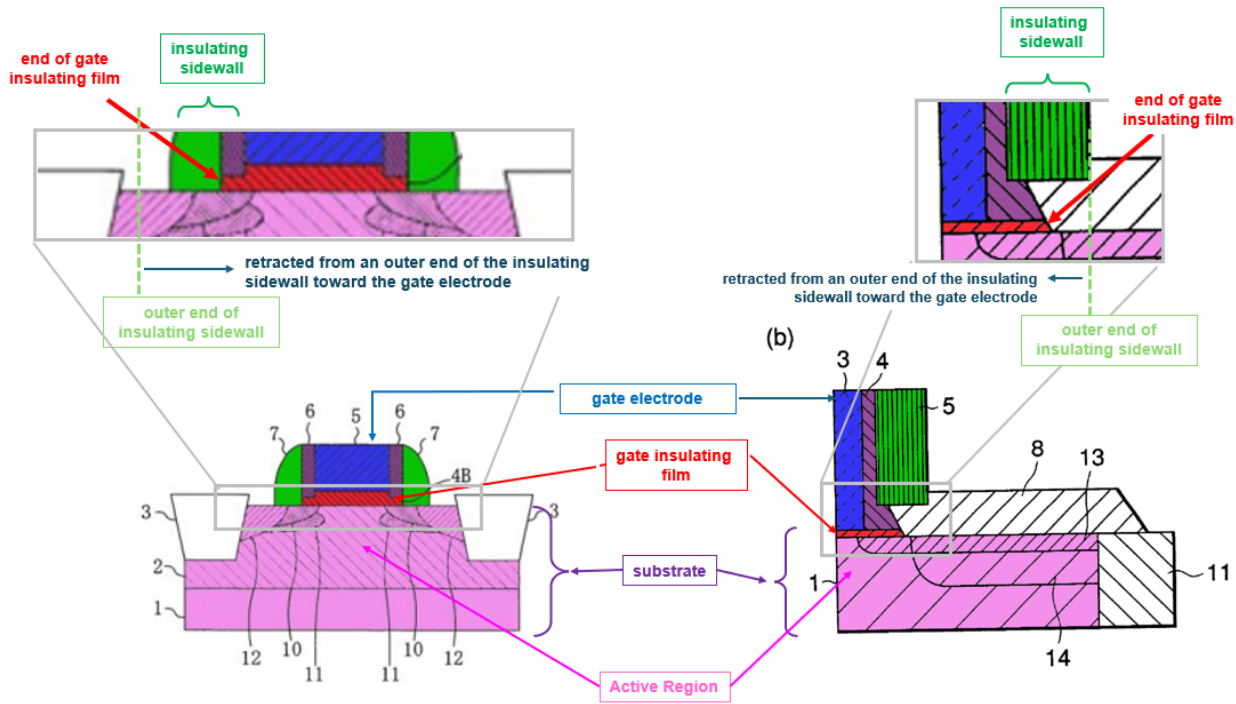
'076 Patent—Figure 2 with excerpt (top)

**Kamata—Figure 1B(j)
with excerpt (top)**



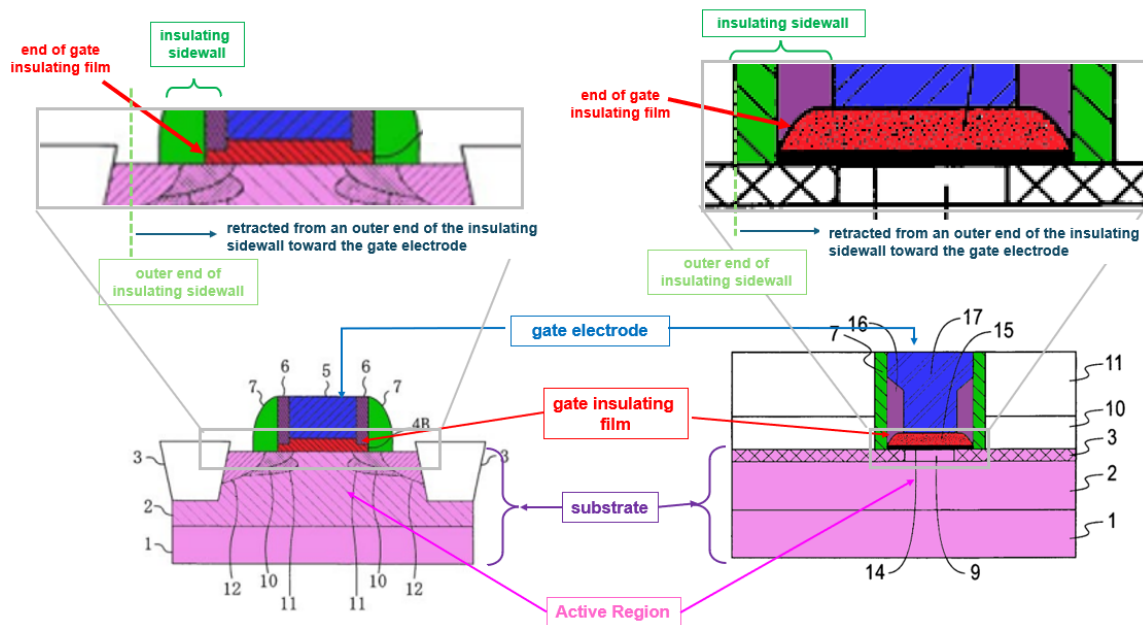
'076 Patent—Figure 2 with excerpt (top)

**Kamata—Figure 5(c)
with excerpt (top)**



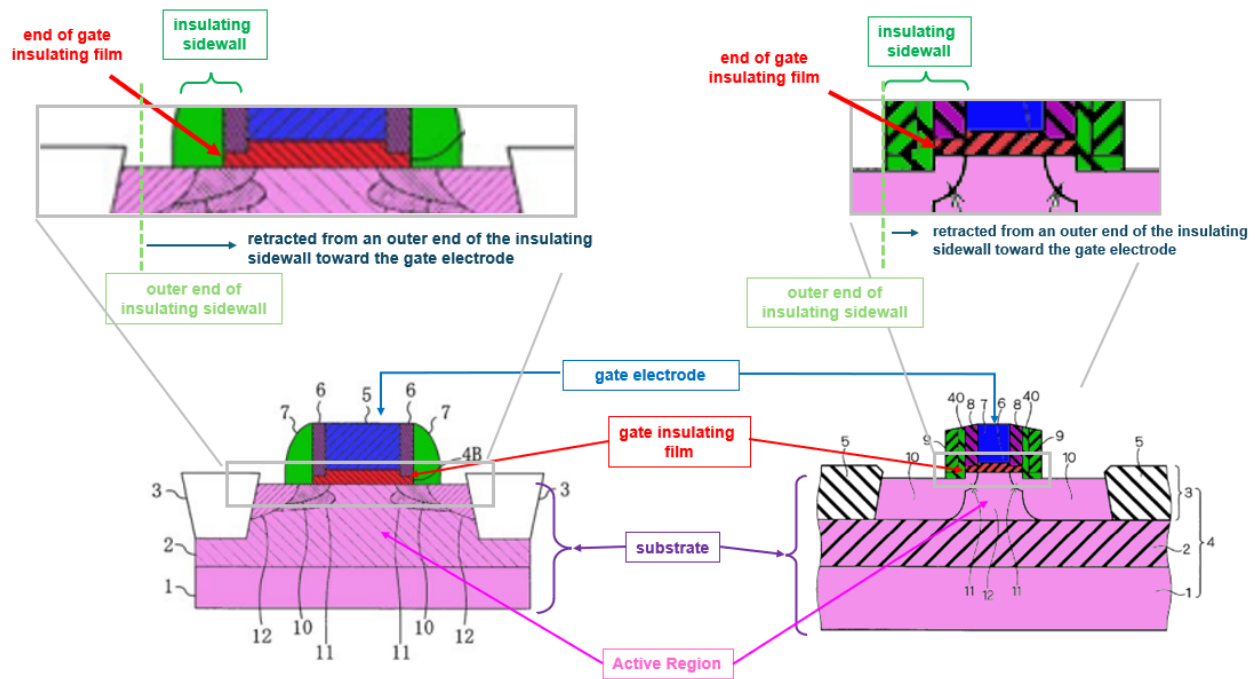
'076 Patent—Figure 2
with excerpt (top)

Kamata—Figure 10(b)
with excerpt (top)



'076 Patent—Figure 2
with excerpt (top)

Guha—Figure 12
with excerpt (top)



**'076 Patent—Figure 7
with excerpt (top)**

**Matsumoto—Figure 22
with excerpt (top)**

Given the Petition's strong grounds, for Guha and Matsumoto, AICP simply repeats the fabricated argument based on “in” versus “on” repeatedly alleged in '076-related family patents; and for Kamata, AICP's only argument is based on an unsupported construction that contradicts its own district court positions.

Guha and Matsumoto: For starters, except for the only fabricated argument based on “in” versus “on,” AICP does not dispute Matsumoto and Guha disclose all the limitations of the challenged claims. (Paper-8, 35-37.) Indeed, AICP cannot contest these limitations—the limitations are clearly disclosed in both primary references. (Paper-2, 46-48 (Guha), 81-83 (Matsumoto).)

AICP's fabricated "in" versus "on" argument conflicts with common knowledge in the art, the '076 patent specification, and the explicit disclosures of Matsumoto and Guha.

AICP's argument conflicts with the knowledge of a POSITA. It is well known in the art for planar transistors, the active region—which includes the channel region, source/drain regions, source/drain extensions (or LLD)—is formed *in* the substrate. (See, e.g., TSMC-1033, 76-82; TSMC-1041, 8.) It is also well known in the art that source/drain regions and extensions are formed by implanting dopant ions into the substrate. (TSMC-1003, ¶¶40-43; TSMC-1033, 76-82; TSMC-1041, 121-123.)

AICP's argument conflicts with the '076 patent itself. The '076 specification describes that in "known MISFETs," "[t]he region of the well 102 surrounded by the STI serves as an active region of the substrate 101." (TSMC-1001, 1:42-43, Figure 16A.) The '076 patent adds that in one embodiment, "a p-type well 2 which is to be an active region is formed" through a process whereby "B (boron) is ion implanted *into the substrate 1*." (TSMC-1001, 13:40-43.) The '076 patent also describes that in "known MISFETs," extension regions 110, pocket regions 111, and source/drain regions 112 are "formed in part of the well 102" (i.e., the "active region"). (TSMC-1001, 1:47-54.) As discussed below, both Matsumoto and Guha teach the same—for example, their transistors are planar and the source/drain regions and extensions

are all formed in the substrate by ion implantation, disclosing the limitation “*active region in a substrate.*” (Paper-2, Guha, 46-48, 81-83 (Matsumoto).)

AICP’s argument ignores Guha’s and Matsumoto’s explicit disclosures by twisting Dr. Lee’s statement to argue Dr. Lee’s position is that the claimed substrate can only be a bulk silicon substrate, while Guha and Matsumoto both use SOI substrates. (Paper-8, 33-36.) Based on its meritless argument, AICP contends each of Matsumoto and Guha only discloses an active region on, not in, the substrate. In fact, in the general technical background section, Dr. Lee states “MISFETs are fabricated on silicon wafers that serve as the substrate.” (TSMC-1003, ¶38 (emphasis in original).) Dr. Lee also explained a substrate is “doped with impurities, known as dopants, to modulate its conductivity and influence the electrical behavior of the transistors built on it.” (TSMC-1003, ¶38; *see also* TSMC-1003, ¶40 (“**Doped regions**—including wells, source/drain regions, and channel regions—are created **in the substrate** through a selective doping process known as ion implantation.”).) And in the detailed analysis of Guha and Matsumoto, Dr. Lee explains that the SOI substrates disclosed in Guha and Matsumoto are the claimed “substrate.” (TSMC-1003, ¶¶145 (Guha), 223 (Matsumoto).) All Dr. Lee’s statements convey that the claimed substrate may be an SOI substrate or a bulk silicon substrate.

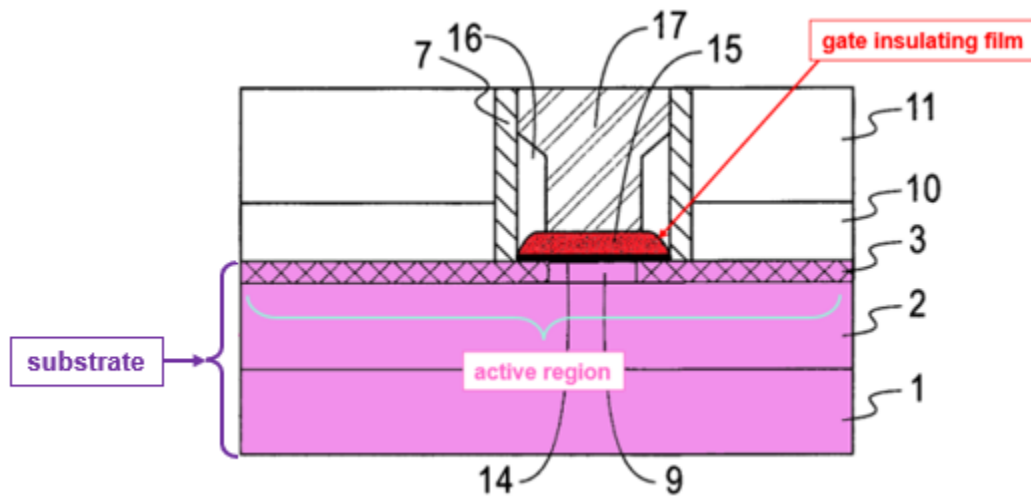
AICP also conveniently ignores the disclosures in other references that refer to SOI structures, like that of Matsumoto, as substrates. For example, textbooks Wolf

and Campbell both discuss the use of “SOI-**substrates**” for forming transistors. (See TSMC-1034, 518-519, 564-566; TSMC-1038, 411-412 (discussing use of “silicon on insulator (SOI) substrates”).)

Guha explicitly discloses its active region is *in* the substrate, stating that its “*substrate* may further *contain active device regions*, wiring regions, isolation regions or other like regions (not shown).” (TSMC-1028, ¶22 (emphasis added); Paper-2, 46-47.) AICP simply ignores Guha’s express disclosure. Further, Guha clearly teaches the active device region is formed in channel layer 3, which is part of the SOI substrate. Specifically, Guha discloses that “source/drain extensions, also referred to as source/drain (S/D) junctions are formed by implanting dopants through the pad protection layer 4 into the channel layer 3.” (See TSMC-1028, ¶¶26, 43.) That is, channel layer 3—as part of the substrate—is doped to provide source/drain regions. Thus, Guha clearly teaches that the active device region is formed in the substrate (including channel layer 3).

Guha describes that its Figure 12 (below) shows “an initial stacked structure that comprises a substrate 1 having a bottom insulator 2, also referred to as buried oxide layer, located thereon” “channel layer 3 on top of the bottom insulator 2,” as mentioned in Dr. Lee’s declaration. (TSMC-1028, ¶21; TSMC-1003, ¶145; Paper-2, 46-47.) The three layers collectively make the claimed “substrate.” (TSMC-1003, ¶145.) That is, Guha discloses an SOI substrate, in which the active region is formed.

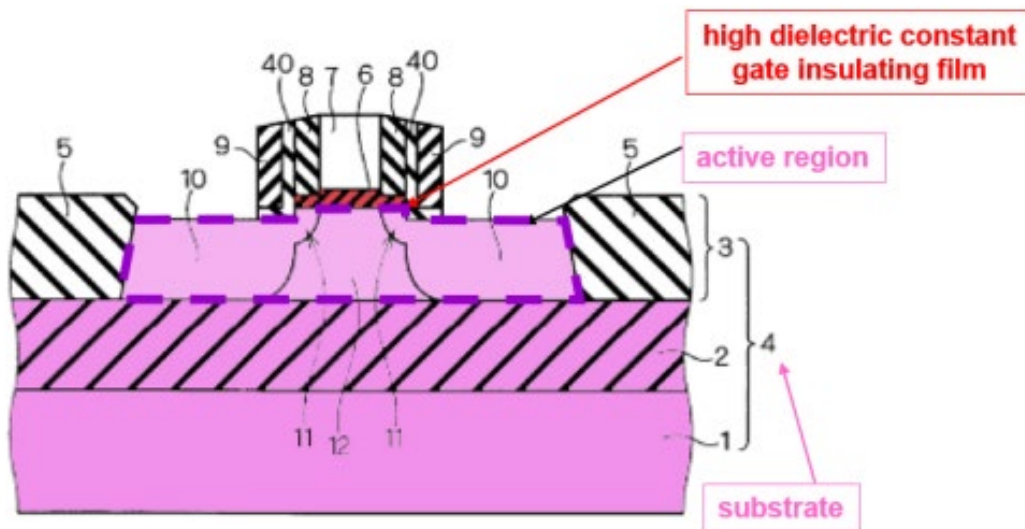
Guha also teaches that it is not limited to SOI substrates, stating “layer 2 can be omitted,” leaving base substrate 1 and channel layer 3, which can be the same materials. (TSMC-1028, ¶¶22-23.) Dr. Lee explains how Guha discloses the challenged claims, including the limitation “*active region in a substrate.*”



Guha—Figure 12

Matsumoto discloses forming its active region in the substrate, consistent with the common knowledge in the art. Matsumoto describes that its Figure 22 shows “[a]n SOI substrate 4 has a multi-layer structure such that a silicon substrate 1, a BOX layer 2 and a single-crystalline silicon layer 3 are stacked in the order named,” as mentioned in Dr. Lee’s declaration. (TSMC-1009, ¶102, ¶¶137, 140 (relating fourth embodiment to first embodiment); TSMC-1003, ¶223; Paper-2, 81.) Matsumoto further teaches “source/drain regions 10 are formed in the silicon layer 3 by an ion implantation process”; “[a] region between the pair of source/drain

regions 10 is defined as a body region 12”; and “[e]ach of the source/drain regions 10 has an extension (or LDD when having a relatively low impurity concentration) 11 extending . . . toward the body region 12 in the upper surface of the silicon layer 3,” which are formed by “performing ion implantation.” (TSMC-1009, ¶105, ¶139; TSMC-1003, ¶224; Paper-2, 82.) Thus, Matsumoto discloses the “device region” (i.e., the active region), which includes the source/drain regions 10, extension 11, and body region 12, is “in the silicon layer 3” of the multi-layer substrate. (Paper-2, 81-82.) Dr. Lee explains how Matsumoto discloses the challenged claims, including the limitation “*active region in a substrate.*” (TSMC-1003, ¶¶222-226.)



Matsumoto—Figure 22

Thus, contrary to AICP’s arguments, both Matsumoto and Guha clearly and definitively teach a device with the active region in the silicon layer of a multi-layered substrate, as discussed in the Petition and Dr. Lee’s declaration. (See Paper-

2, 81-82 (Matsumoto), 46-47 (Guha); TSMC-1003, ¶¶222-224 (Matsumoto), ¶¶145-146 (Guha).)

Notably, a different reference by Matsumoto (JP-Matsumoto⁵) was discussed during prosecution of the JP counterpart. Matsumoto and JP-Matsumoto have overlapping disclosure, which invalidates the '076 patent claims. Yet, AICP never argued JP-Matsumoto, which also discloses SOI substrates, failed to disclose “*an active region in a substrate.*” (See TSMC-1005, 10-13, 20.) Specifically, prior to the filing of the '076 patent application, the Japanese Examiner rejected the pending JP claim 1 (having overlapping scope to U.S. claim 1 and an equivalent “in a substrate” language⁶) based on JP-Matsumoto. (TSMC-1005, 14-15; Paper-2, 17-18.) To overcome this rejection, Applicant did not attempt to argue JP-Matsumoto disclosed an SOI substrate and thus that its active region was “**on** the substrate” rather than “**in** the substrate,” (TSMC-1005, 20.) Instead, Applicant simply narrowed the claims by adding a limitation. (TSMC-1005, 18.) Thus, Applicant acquiesced that JP-Matsumoto (using SOI substrates like Matsumoto) disclosed all the limitations of then pending JP claim 1, including “*an active region in a substrate.*” AICP’s current

⁵ JP-Matsumoto corresponds to Matsumoto-185. (See TSMC-1002, 74 (IDS by Applicant).)

⁶ The Japanese claim recites “an active region **of** the substrate.” The language “of the substrate” and “in the substrate” are equivalent.

attempts to negate the prior acquiescence of the original patent owner, yet reap the benefits of the predecessor's supposed expectations, cannot stand.

Kamata: AICP manufactures a self-conflicting construction to argue Kamata fails to disclose one limitation—and only one—though it does not dispute Matsumoto and Guha each discloses this same limitation. (*See* Paper-8, 35.)

AICP advances a wholly unsupported construction regarding the limitation “*an end of the gate insulating film under the insulating sidewall is retracted from an outer end of the insulating sidewall toward the gate electrode*” [1E]. Particularly AICP argues that “the ‘outer end’ [of the insulating sidewall] corresponds to the outer end of the outermost sidewall component that is immediately above and in contact with the gate insulating film.” (*Id.*) AICP then alleges, with an explanation it states will be provided in a later brief (conveniently after TSMC's opposition), that “every embodiment and every figure” relates to “this aspect.” (*Id.*) From this unexplained and unsubstantiated claim construction position, AICP contends Kamata does not disclose this limitation because the relevant “sidewall component in Kamata's multicomponent sidewall ... is entirely unassociated with the gate insulating film, much less immediately above and in contact with it.” (*Id.*) AICP's argument, attempting to manufacture a claim construction dispute to request discretionary denial, is completely misleading and simply incorrect.

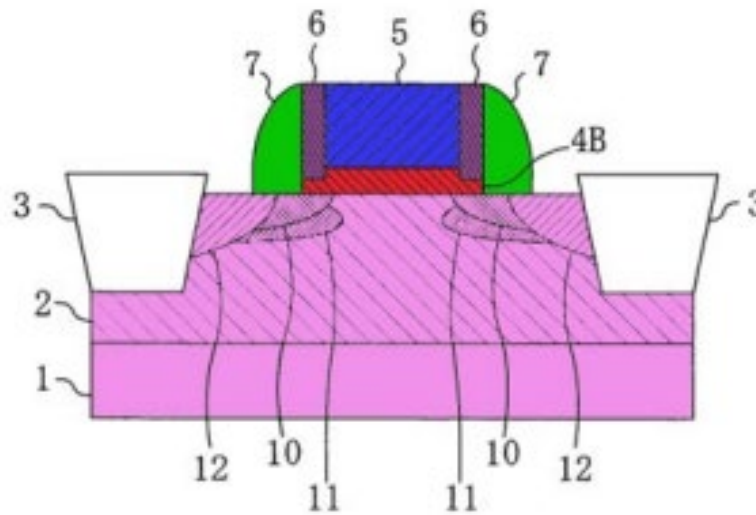
AICP's proposed construction attempts to narrow the claims to encompass only insulating sidewalls that are directly above and in contact with the gate insulating film and omit those that are not. Neither the claims nor the specification contains such an "above and in contact" requirement—and both AICP's own litigation positions *and* the intrinsic record refute it.

AICP's newly minted claim interpretation represents a dramatic flip from AICP's infringement allegations. The Petition explained that "[i]n the co-pending district court litigation, AICP contends limitation [1E] is satisfied by a gate insulating film whose end is disposed inward at a distance from the outer end of the insulating sidewall *and does not require any portion of the end of the gate insulating film to be in contact* with the outer end of the insulating sidewall." (Paper-2, 31-32.) That is, AICP represented, to make its infringement allegations, that the outer end of the asserted insulating sidewall is the outer end of the outermost "layer" that is *not* immediately above and in contact with the asserted gate insulating film. Now, AICP is arguing the claims require that the same outer end *is* "immediately above and in contact with the gate insulating film." (Paper-8, 35.) AICP cannot urge an unsupported claim construction to avoid PTAB review, while taking a different position to allege infringement in a different forum.

AICP's claim construction is also directly contradicted by the intrinsic record. As the Petition explained, the "term 'retract' first appeared in claim 21 of the '076

application (issued claim 1)” and “does not appear anywhere in the ’076 patent specification or any other patent in the same family.” (Paper-2, 31.) What *is* apparent from the specification is that embodiments exist where the outer end of the sidewall structure, which can have multiple layers, is *not* immediately “above” or “in contact with” the top surface of the gate insulating film.

AICP’s proposed construction excludes these embodiments. For example, the ’076 patent’s second embodiment, shown in Figure 2 below, illustrates the gate insulating film (shaded red) is in a “retracted” position but the outer end of the insulating sidewall is not immediately “above” or “in contact with” the gate insulating film. (*See, e.g.*, TSMC-1001, 7:21-31 (Second Embodiment), Figure 2; Paper-2, 14, 27 (explaining “patent uses the term ‘insulating sidewall’ to refer to a single component (6:9), a collective structure of two components (2:60-65), and as a component having multiple layers (21:6-15)”).)



'076 Patent—Figure 2

As the plain language and specification make clear, contrary to AICP's position, the "specific locational relationship" between the "end of the gate insulating film" and the "outer end of the insulating sidewall" required by the claims (Paper-8, 3) encompasses structures, like that shown in '076 patent's Figure 2, where the end of the gate insulating film is retracted from the outer end of sidewall 7, not sidewall 6. Notably, sidewall 7 is not immediately above or in contact with the gate insulating film.

Kamata discloses the same insulating sidewall and gate insulating film configuration as Figure 2 in its first and ninth embodiments, as detailed in the Petition. These embodiments meet limitation [1E] when properly interpreted. (*See* Paper-2, 31-34.) Furthermore, the '076 patent is still invalid in view of Kamata's

fourth embodiment even under AICP's unsupported construction. (Paper-2, 31-34; TSMC-1027, Figures 1B(j), 5(c).)

C. This Case Involves Complicated Semiconductor Technology and the Trained PTAB Judges Are Best To Adjudicate

AICP admits the district court case is “complex” and does not dispute the complexity of the underlying technology, which involves complicated semiconductor processing, or that trained PTAB judges would be better suited than a lay jury to assess validity. (*See* Paper-8, 33, 44-46.) And AICP further concedes addressing validity “at the *same time* in a *single* proceeding that binds *all* relevant parties” would be preferable. (Paper-8, 44 (emphasis in original); *see also id.*, 16-17, 20-21.) Contrary to AICP's suggestion otherwise, that describes the Board, not the district court. This complexity weighs *against* discretionary denial. *See, e.g., Tesla v. Navy*, IPR2025-00341, Paper-12, 2-3.

The TSMC and UMC cases are consolidated only for *pre-trial* purposes, as AICP admits. (*See* Paper-8, 44-45.) As such, the court must hold two separate jury trials, one for UMC and one for TSMC, and resolve two separate rounds of post-trial briefing. Each involves seven patents related to 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 for each

patent⁷, which would be more efficient than proceeding with two separate jury trials to resolve invalidity for seven patents.⁸ *See Tesla v. Navy*, IPR2025-00341, Paper-12, 2-3 (“[T]he complex and diverse litigation proceeding tip[s] the balance against discretionary denial.”); *Tesla v. Intell. Ventures II*, IPR2025-00339, Paper-9, 2-3 (same).

AICP’s reliance on *Nokia* is unavailing. (*See* Paper-8, 33.) Unlike this case, *Nokia*’s scheduled trial date was more than seven months before FWD. And, importantly, the *Nokia* petitioners did not offer the strong, reciprocal stipulations TSMC and UMC have offered here.

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.

IV. Referral Is Warranted by Applicants’ “Unfair Dealings” Conduct

There can be no dispute that Applicant withheld material information from the U.S. Examiner during prosecution of the ’076 patent. Applicant failed to inform

⁷ UMC has sought joinder, agreeing to act as an understudy. (*See* TSMC-1094 through TSMC-1100.)

⁸ AICP incorrectly claims the “other patents” have “closely related subject matter.” (Paper-8, 2.) They are only “closely related” in the sense that they involve MOSFETs and AICP bought them from the same entity.

the U.S. Examiner of the entire prosecution history of the Japanese counterpart, including its own acquiescing amendments. And, although Applicant informed the Examiner of the rejection issued by the Chinese Patent Office, Applicant failed to provide a translations of the highly material portion of that Office Action and failed to inform the U.S. Examiner of its acquiescing amendment. If these had been disclosed, the U.S. Examiner would have rejected the U.S. claims as filed based on any of JP-Ono, JP-Matsumoto, Kajiyama, or Henson as discussed above.

These failures to comply fully with the duty of candor further tip the balance in this case **against** exercising discretion to deny institution. An applicant's failure to comply with the duty of candor and good faith accords is just as serious a form of "unfair dealings" as those that have been recognized as appropriate factors in the discretionary-denial decision. *See Tessell Inc. v. Nutanix, Inc.*, IPR2025-00322, Paper-14, 2 (June 12, 2025) (finding Office "may consider unfair dealings as a factor when determining whether to exercise discretion to deny institution", such as when inventors submit sworn applications to obtain a patent and then advocate for its unpatentability).

This duty of candor has historically been characterized as including a duty of "fair dealing." *See* MPEP § 2011.4 (Rev. 2, Apr. 1980) (referring to "the required standard of candor and fair dealing with the Patent Office" (quote and citation omitted)); *cf. Spectrum Solutions LLC v. Longhorn Vaccines & Diagnostics, LLC*,

IPR-2021-00847, Paper 142, 14-15 (July 11, 2024) (reviewing sanctions imposed for party's failure to "meet its duty of candor and fair dealing in its actions before the Board").

JP Prosecution: The '076 patent claims priority to JP2005-227457, filed August 5, 2005. The as-filed Japanese claims covered essentially the same scope as the originally filed '076 patent claims. (See TSMC-1003, ¶77; TSMC-1005, 16; TSMC-1002, 4-5.)

In September 2011, over ten months **before** it filed for the '076 patent, the Japanese Examiner found Japanese claim 1 unpatentable and anticipated by JP-Ono, which discloses all the limitations of U.S. claim 1. In response, Applicant expressly acknowledged JP-Ono discloses a device "comprising a **gate insulating film 5** made of a high dielectric constant material formed on a **semiconductor substrate 1**" and "a **gate electrode 6**" (which Applicants later alleged were missing from Hieda) but argued that JP-Ono "does not disclose a configuration equivalent to the second insulating sidewall in the invention." (TSMC-1005, 11.) To overcome the rejection, Applicant amended the independent claim to include this second insulating sidewall. (*Id.*, 8.)

The amendments were insufficient to obtain allowance. In December 2011, over 7 months **before** the '076 patent's filing date, the JP Examiner found the as-amended claims, including the same features Applicant alleged were missing from

Hieda, to be anticipated and unpatentable over JP-Matsumoto and Kajiyama. (TSMC-1005, 14-16.) To overcome this rejection, Applicant did not attempt to distinguish over JP-Matsumoto or Kajiyama. (TSMC-1005, 20.) Instead, Applicant again narrowed the claim by adding another limitation. (TSMC-1005, 18.)

CN Prosecution: On August 5, 2008, Applicant filed a counterpart application with the Chinese Patent Office. (*See* TSMC-1157, 1.) The Chinese application was filed with substantially identical claims as the Japanese priority applications. (*Compare* TSMC-1057, 1-2 *with* TSMC-1005, 1-20.) The Chinese Patent Office acted quickly, issuing an Office Action on March 20, 2009, over *three years before* the '076 patent was filed, rejecting the then-pending independent claim as lacking novelty over JP-Ono and the “notch” limitation as disclosed by Henson. (TSMC-1057, 2.) To overcome the rejection over JP-Ono, Applicant amended its claims, as it would later do during JP prosecution and prosecution of the '227 patent, to include the first and second sidewall limitations. (*See* TSMC-1157, 2-3.)

Although acquiescing amendments in both Japanese and Chinese prosecution occurred before the '076 patent was filed, and despite their clear materiality and relevance to the positions taken by Applicant in U.S. prosecution regarding the deficiencies in the cited prior art, Applicant did not bring them to the attention of the

U.S. Examiner⁹. Applicant had ample opportunity to do so in the IDS filed with the '076 patent application submission—in which it disclosed translated version of JP-Ono, Kajiyama, JP-Matsumoto (and corresponding Matsumoto), and Henson. (TSMC-1002, 72-74.)

Applicant's failures violated its duty of candor. "Materiality is not limited to prior art but embraces *any* information that a reasonable examiner would be substantially likely to consider important in deciding whether to allow an application to issue as a patent." MPEP § 2001.04 (internal quote and citation omitted.); *see also* MPEP § 2001.06(a) (requiring disclosure of "material prior art or ***other information*** cited or brought to [applicants'] attention in any related foreign application" (emphasis added)); *c.f.* MPEP § 2001.06(c) (requiring disclosure of "any assertion that is made during litigation and/or trial proceeding which is contrary to assertions made to the examiner," as well as "the existence and the nature of any allegations relating to validity"); MPEP § 2001.06(e) (requiring disclosure of "submissions" to

⁹ During prosecution of the immediate parent application corresponding to U.S. Patent 8,253,180, Applicant submitted an IDS including JP-Ono and stated it was cited in a "corresponding Japanese application Office Action" but Applicant did not submit the Office Action, its response, or any further correspondence. This IDS paper was not submitted during '076 prosecution, nor any equivalent note regarding a Japanese Office Action.

other agencies, “particularly any assertion that is made which is contradictory to assertions made to the examiner”). For instance, applicants must “promptly correct the record” if they “discover[] that an earlier position taken in a submission to the USPTO... was incorrect or inconsistent with other statements made by the party.” MPEP § 2001.04. And “[p]artial disclosure of material information about the prior art to the PTO cannot absolve a patentee... if the disclosure is intentionally selective.” *Am. Calcar, Inc. v. Am. Honda Motor Co.*, 768 F.3d 1185, 1190 (Fed. Cir. 2014).

Applicant’s unfair dealings during prosecution should not be rewarded with discretionary denial.

V. Referral is Warranted Because the Settled Expectations of Petitioner and Others Outweigh AICP’s Alleged Expectations

A. TSMC and Others Have Settled Expectations the ’076 Patent Will Not Be Enforced

Although “the ’076 patent has been in force since November 19, 2013,” (Paper-8, 38), that does not help AICP’s position under the circumstances. In fact, it should weigh heavily in TSMC’s favor. That is because TSMC first commercialized the accused 28 nm technology more than two years before the ’076 patent issued. For well over a decade, no one asserted the ’076 patent against that technology.

The ’076 patent issued in November 2013, almost eleven years before AICP sued TSMC. (*Compare* TSMC-1001, cover (item 45), *with* Ex-2009, 5 (Dkt. 1).)

Meanwhile, plans for the accused 28 nm TSMC technology were first announced in September 2008 and the product went into volume production by at least October 2011. (TSMC-1116; TSMC-1117.) Although TSMC had manufactured chips using the accused technology continuously for 13 years, even introducing additional processes using the accused technology, none of the '076 patent's prior owners ever sought to enforce it against TSMC. Only when AICP acquired the '076 patent, nearly 11 years after issuance, was it first enforced. Such continuous manufacture of the accused chips, with no enforcement, since before the application for the '076 patent had even been filed should weigh heavily against discretionary denial. It shows that TSMC—and others who implement TSMC's accused technology—had settled expectations that the '076 patent would not apply to the accused technology. *See Intel Corp. v. Proxense LLC*, IPR2025-00327, Paper-12, 2-3 (June 26, 2025) (explaining lack of, e.g., prior assertion, commercialization, and/or marking “weigh[s] against a patent owner's claim of settled expectation”). When AICP acquired the '076 patent, it assumed those expectations.¹⁰

¹⁰ In a related IPR, AICP has argued its newly minted infringement allegations are enough to demonstrate “commercialization”—by others, not by AICP or its predecessors-in-interest. IPR2025-00682, Paper-14, 4-5. This novel legal theory depends on adopting AICP's unproven and contested infringement allegations as

B. AICP Should Assume the Settled Expectations Created by Prior Owners

As a new owner of the '076 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 “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 '076 patent) that had never been asserted in any proceeding, with the intention

fact, and would imply that every patent ever asserted has been “commercialized”—an absurd result.

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.¹¹ (*See* TSMC-1087; TSMC-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 the '076 patent would be meaningfully enforceable. The market's expectations would have been to the contrary given the accused 28 nm technology had been in use for over a decade with no assertion of the patent.

AICP's reliance on *iRhythm* and the "advanced age" of the '076 patent is strained here because other factors, including TSMC's settled expectations, the Examiner's material errors, and Applicant's unfair dealings outweigh the mere age of the patent. (*See* Paper-8, 40-41.) Moreover, not only was the '076 patent never enforced against TSMC or its customers, but it was never asserted or adjudicated in any proceeding until ***two days*** after AICP acquired it. (*Compare* TSMC-1089, 3,

¹¹ AICP seems to be owned by another company, called AMTL LLC. (*See* TSMC-1088, 1.) In contrast with TSMC's U.S. investments, well exceeding \$150 billion (*see infra* §VI-A), AMTL had an annual tax assessment of \$300. (*See* TSMC-1105, 1.)

with Ex-2009, 5 (Dkt. 1).) And nothing suggests any entity has ever marked any product with the '076 patent or otherwise provided constructive notice.

When discussing settled expectations, AICP wrongly suggests TSMC should have filed its petition sooner, including before TSMC was sued, because a published application of a family member of the '076 patent was cited *by an Examiner* in 2012 during prosecution of a TSMC patent, and a published application of a different family member was cited *by a different Examiner* in 2023 during prosecution of yet another TSMC patent. (See Paper-8, 38-40.) Neither of these Examiners considered the published applications relevant enough to use in an Office Action. And importantly, AICP never alleges that TSMC was aware of the issued '076 patent. (See Paper-8, 38-40.)

Regardless, such an argument is unreasonable because it requires everyone, including TSMC, to check every patent application. As Judge Gilstrap correctly observed, that notion “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)). In fact, approximately 300,000 or more U.S. utility patents issue

each year. (See TSMC-1059, 1 (data for 2009 through 2020).) Thus, no entity could realistically assess all issued patents.

In all the time since plans for TSMC's accused 28 nm technology were first announced in September 2008, and went into volume production (by October 2011), TSMC never knew about the '076 patent and never had any reason to challenge it. The prior owners of the '076 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 in use far longer than they have 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.

VI. *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. The semiconductor chips manufactured by TSMC are vital to U.S. industries (from Apple and NVIDIA to Meta and Tesla); and to U.S. military (e.g., missile guidance systems and F35 stealth fighters). TSMC is investing \$165 billion in the U.S. (an unprecedented direct foreign investment), and is a trusted partner for the US supply chain (*see* TSMC-1147)—contributing to American national security, economy, innovation, and public interest, and achieving 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.

These vital U.S. economic and national security interests and TSMC's unprecedented investments, however, are threatened by AICP with an injunction¹² through an erroneously-issued patent. Unfortunately, a lay jury lacking in technical

¹² AICP attacks TSMC's public interest arguments as irrelevant because it allegedly will not seek injunctive relief. (Paper-14, 5.) But that position contradicts AICP's complaint, which requests an injunction. (Ex-2001, 51.)

training may accord too much deference to the validity of an erroneously issued patent. Given the extraordinarily broad impact of TSMC's technology on the U.S. national security, economy, innovation, and public interest, it is difficult to imagine a more compelling case for the use of the Board's resources than this one.

A. Discretionary Denial Would Harm Compelling U.S. National Security, and Public Interests

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." (TSMC-1123, 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." (TSMC-1111, 40.¹³) "President Trump has made it a fundamental objective to bring semiconductor chip manufacturing home to America," praising

¹³ 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).

that “TSMC, the greatest manufacturer of chips in the world, is coming to America with a \$100 billion investment.” (TSMC-1119.)

For national security, TSMC makes semiconductors for a wide range of “military-grade” devices used by the Department of Defense. (TSMC-1135, 5; TSMC-1115, 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.”); TSMC-1136, 2-3 (TSMC is the world’s leading manufacturer of radar system chips for radar systems).) Independent observers have identified the positive impact on U.S. national security and on the F-35 fighters in particular, from “the effort to have advanced semiconductor fabrication facilities onshored in Arizona.” (TSMC-1137, 2.)

TSMC offers multiple technologies, ranging from 28nm to 3nm, to power widespread military/defense applications, applications that include avionics, missile guidance, radar systems, radar electronic warfare, radiation-hardened systems, power systems, imaging for defense and aerospace, secure communications. And the U.S. Air Force estimates “90% of its precision-guided munitions rely on TSMC chips.” (TSMC-1093, 4.) And a similar calculus applies to warships, satellites, and communication systems. (*Id.*) AICP asserts the ’076 patent against military-grade products manufactured by TSMC, for example,

defense-grade FPGA chips from AMD/Xilinx used for military avionics, missiles & munitions, and electronic warfare. (*See* TSMC-1153, 4.)

Given the extraordinarily broad impact of TSMC’s technology on the U.S. economy and national security, it is an appropriate use of the Board’s resources to review and correct examination errors in this case.

B. Discretionary Denial Would Harm U.S. Leadership in AI and High-Tech Races

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.” (TSMC-1129, 1.)

As the bi-partisan U.S.-China Economic and Security Review Commission in its 2024 Report to Congress explains, the U.S. is faced with fierce competition from China. (TSMC-1163, 3.) This long-term strategic competition will “shape the rapidly evolving global technological landscape” and could “transform society, create new industries ... and alter the character of warfare.” (*Id.*, 9.) The country that “secures a lead in key technologies—particularly those with first mover advantages—will tip the balance of power in its favor and reap economic benefits far into the 21st century.” (*Id.*) AI is one of the “key emerging technology areas”

over which the U.S. and China compete. (*Id.*, 10.) And China is making rapid advancements in its AI capabilities, not only to advance its economic growth, “but also for military applications such as autonomous unmanned systems, data processing, decision-making, and cognitive warfare.” (*Id.*, 11.)

TSMC is an important part of the American AI-dominance strategy. (*See* TSMC-1130 (Ansys collaboration); TSMC-1131 (Cadence collaboration).) AI applications require immense computational power, which in turn require high-performance chips. As a global leader in AI technology and the world’s largest contract chipmaker, TSMC is “steering” the AI wave that “[m]any tech giants are currently riding.” (TSMC-1126, 2.) TSMC “produces the advanced processors that Nvidia, AMD and Apple rely on to bring AI to life,” for example, NVIDIA’s next-generation Blackwell AI chips for NVIDIA’s AI supercomputers. (TSMC-1126.)

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. (TSMC-1124, 2.) TSMC unleashes and enables innovations by its customers, including Apple, NVIDIA, AMD, Broadcom, Qualcomm, Microsoft, Meta, Alphabet, Amazon, and Tesla, and many others, securing U.S. leadership in the high-tech competition.

For a patent that never should have issued to pose such a threat against U.S. leadership in AI and hi-tech competition, the Administration has a heightened interest in ensuring that the USPTO corrects its error in issuing this patent.

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.

C. TSMC Is A Top Patent Filer In the U.S., with 43,000+ Issued Patents And A Consistent Track Record of Pursuing Only Meritorious Invalidity Challenges

TSMC does not ask lightly for the USPTO to use its resources. In addition to TSMC's contributions to the U.S. economy, national security, and semiconductor supply chain, TSMC is a major innovator with deep regard for patent rights. TSMC relies on the U.S. patent system to protect its technology and its investments. It holds around 40,000 issued U.S. patents and believes in a strong patent system. Indeed, “[a]s one of the largest U.S. patent holders, TSMC strongly believes in the patent system.” (TSMC-1113, 1-2.) TSMC is one of the most frequent patent filers in the U.S., with a 99% allowance rate for its U.S. applications since 2019. (*See* TSMC-1144 (allowance rate); TSMC-1113, 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. (TSMC-1145; TSMC-1146.)

But a robust patent system includes a self-correction mechanism. TSMC recognizes that some patents should not have been issued, and in those limited instances it will use the IPR process. Because of this judicious approach, TSMC has consistently prevailed in its challenges to patents that threaten to block real innovation: 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* TSMC-1110; TSMC-1186.)

This Petition continues TSMC's trend of meritorious challenges, and referring this Petition to the Board is essential to the health of a properly functioning patent system, compliance with the Patent Office's stated mission, this country's military readiness, and furthering the Administration's priorities. The Board, with its specialized resources and efficient processes, is best suited to correct the examination errors that TSMC's petition identifies and ensuring erroneously issued patents cannot be leveraged by foreign actors to impede innovation and progress in the U.S.

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.

VII. Referral Is Warranted by the Other *Fintiv* Factors

TSMC and UMC have stipulated away the ability to assert any §§102 and 103 challenges for any type of legally recognized prior art in district court upon institution, greatly simplifying those proceedings. TSMC was also diligent. When it became clear then-ongoing efforts to resolve the dispute privately were not progressing, TSMC filed its Petition. That was shortly after receiving infringement contentions and approximately two weeks before serving invalidity contentions. By the DI, *Markman* briefing will have barely begun, and close of fact discovery will remain approximately 2½ months away. And although jury selection may be tentatively scheduled before the Final Written Decision (“FWD”), a very high probability suggests it will be delayed several months.

A. Factor 1 (Stay Likelihood): 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-8, 17-20.) In so doing, AICP improperly focuses on how the district court might rule *before* an institution decision. (*See id.*, 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 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); *e-Watch Inc. v. Apple, Inc.*, No. 2:13-cv-1061-JRG-RSP, 2015 WL 12915668, at *3 (E.D. Tex. Mar. 25, 2015).

Although this factor sometimes may be regarded as neutral, 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, 7 (June 16, 2020) (informative). 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”). Similar guideposts exist here—the DI, *Markman* briefing will not have been completed, the *Markman* hearing and all the “most burdensome parts” 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). AICP’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 more than seven months before the earliest possible trial date (which, as explained for Factor 2, is statistically overoptimistic).

Examining schedules the court has found weigh in favor of a stay reveals a stay would be very likely if IPR were instituted here. *See Resonant Sys.*, 2024 WL 1021023, at *2-4; *Commc’n Techs.*, 2023 WL 1478447, at *3. By the court’s own standards, the present case is in its early stages. The court has only ruled on pro forma motions. There have been only two depositions, both related to venue and

TSMC's pending motion to transfer, not substantive issues involving the '076 patent. Comparing the present case's timeline to comparable timelines before Judge Gilstrap suggests the present case's stage favors a stay. (*Compare* Ex-2008 with TSMC-1063 through TSMC-1069.)

Stage	<i>Commc'n Techs.</i> (Stayed)	<i>Resonant Sys.</i> (Stayed)	Present Case
Service of Complaint	209 days (7 mos.) before IPR	226 days (7½ mos.) before IPR	223 days (7½ mos.) before IPR
INV contentions	43 days before IPR		
	IPR FILED		
		2 days after IPR	16 days after IPR
CC Briefing Begins	13 days before DI	20 days before DI	7 days before DI
	Decision on Institution		
CC Hearing	50 days after DI	36 days after DI	36 days after DI
Close Fact Discovery	2½ months after DI	2 months after DI	2½ months after DI
Close Expert Discovery	4 months after DI	3½ months after DI	4 months after DI
Jury Selection	7½ months after DI	7 months after DI	7 months after DI
FWD	5 months after Jury Selection	5 months after Jury Selection	5 months after Jury Selection

TSMC's facts in this case are as strong as the ones above, if not stronger. In both 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. (emphasis added)); *Commc'n Techs.*, 2023 WL 1478447, at *3. 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 here, where the facts weigh at least as heavily in TSMC's favor.

Finally, AICP argues granting TSMC's stay motion would not stay the action as to UMC because UMC did not join that motion. (Paper-8, 14, 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 TSMC-1084, 15 (“[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 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 §II.) AICP's arguments regarding UMC are thus moot.

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): 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 is overwhelmingly likely to be delayed, based on practical considerations and historical data. For instance, eight cases are scheduled to begin jury selection on the currently scheduled trial date, with 19 cases scheduled to begin jury selection throughout June 2026. (*See* TSMC-1150.)

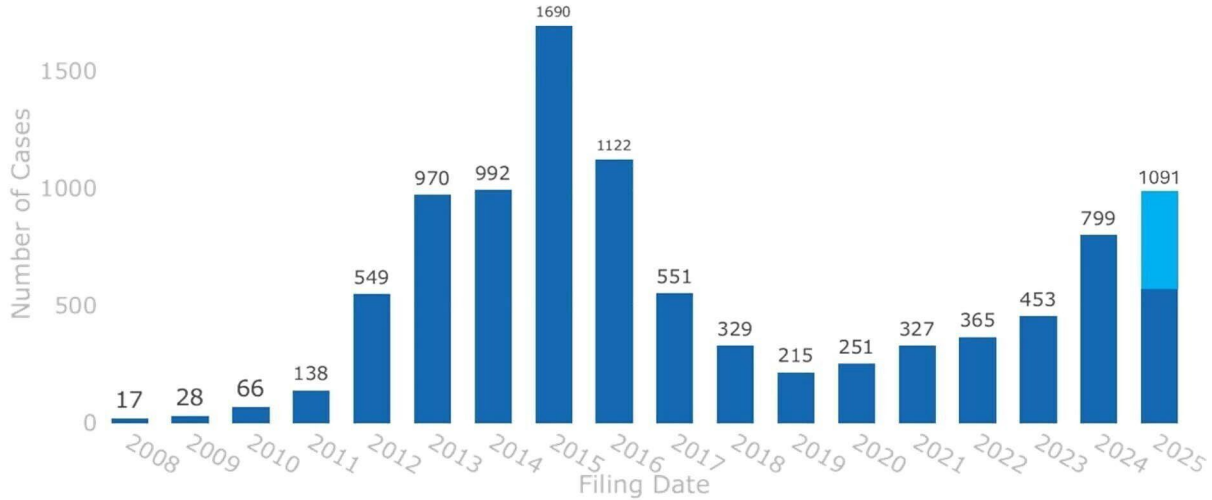
AICP incorrectly argues “the June 2026 trial date is consistent with statistical evidence... showing that cases pending before the presiding judge (Judge Gilstrap) that went to trial in the previous year have a median time-to-trial of 672 days (about 22 months),” which would result in a trial date of “June 2026 (the same as the currently scheduled trial date).” (Paper-8, 23.) First, AICP’s calculation uses irrelevant and inapplicable data—for 31 of its 37 cases, its median calculation uses canceled trial dates, not actual or even rescheduled trial dates. (Ex-2027, 1.) Twenty-one of these cases did not even hold trial during the specified time (more than half settled, one stayed for IPR, and six are still delayed). (TSMC-1152, 3.) Of the sixteen cases that actually held trial, four are non-patent cases. Moreover, AICP’s data is underinclusive, missing at least four patent cases.

In reality, looking more specifically at Judge Gilstrap’s patent jury trials over the past year, the median time to trial is significantly longer—25.5 months, places the trial date for this matter (approximately September 15, 2026) within two months of FWD. (*See* TSMC-1152, 3.) This schedule is consistent with the latest official statistics from the United States Courts showing a median time to trial in the Eastern District of Texas of 25.9 months. (TSMC-1055, 35.)

Additionally, except for one case, *all* of Judge Gilstrap’s patent jury trials were delayed—half by four months or more, with a maximum of seven months and a mean and median of 3.8 months. (*See* TSMC-1152, 3.) Here, the historically average delay would put trial only a month before FWD. A delay of at least 4.7 months, as occurred in one third of Judge Gilstrap’s recent patent jury trials, would put the trial date *after* FWD. (*See* TSMC-1152, 3.) Statistically, therefore, the Board may reach a resolution before trial begins.

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, case filings before Judge Gilstrap have essentially *doubled* since 2022 and 2023—a continuing trend, with over 1000 cases projected by the end of 2025. (*See* TSMC-1057 (showing 568 cases as of July 18, 2025 and projected total of 1091).)

CASES BY YEAR



TSMC-1057 (modified to include prorated 2025 projection)

Delays are thus likely to lengthen compared to last year's median. (*See* TSMC-1152, 3.)

Focusing solely on the scheduled trial date also fails to account for litigation realities. The Board's decision becomes immediately appealable to the Federal Circuit, whereas a jury verdict is followed by post-trial briefing further delaying resolution by many months. Since 2023, post-trial briefing alone in Judge Gilstrap's court has taken, on average, more than 4½ months. (*See* TSMC-1058, 1.) And obtaining an order resolving post-trial motions has taken, on average, nine months after trial. *Id.* Accordingly, it would be incredibly unlikely for the district court to issue a final, appealable order before the Board does.

AICP further assumes UMC's joinder motion will not be granted, presenting this as a basis of further delay. (*See* Paper-8, 16.) But if UMC is joined, both

proceedings would proceed on the same schedule. (*See* TMS-1094 through TMS-1100.). Even if not, UMC's stipulation would preclude it from asserting §§102 and 103 grounds if TSMC's Petition is instituted. (TSMC-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* TSMC-1055, 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 '076 patent from Board scrutiny. 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." (TSMC-1060, 1; *see also* TSMC-1061, 1-2 (noting concerns about concentration of patent cases in certain venues because of patent owner incentives); TSMC-1062, 5.) 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).

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 by as much or more than the present case. *See Shenzhen Tuozhu Tech. Co. v. Stratasy, Inc.*, IPR2025-00531, Paper-10, 2 (4-month difference); *Padagis US LLC v. Neurelis, Inc.*, IPR2025-00464, Paper-12, 2 (7-month difference); *Intell. Ventures II*, IPR2025-00339, Paper-10, 2 (1.5-month difference); *ParTec*, IPR2025-00318, Paper-9, 3 (1-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., Navy*, IPR2025-00341, Paper-12, 2-3 (broad stipulation outweighed other *Fintiv* factors, including trial date).

**C. Factor 3 (Investment in Parallel Proceeding at the DI Deadline):
District Court Case Will Be In Early Stages, with the *Markman*
Hearing After the DI deadline**

Factor 3 weighs against discretionary denial, because DI is before the completion of claim construction briefing and the *Markman* hearing, and the court has yet to hold any hearings related to the '076 patent.

AICP points only to the parties' early invalidity and infringement contentions and a modicum of discovery. (*See* Paper-8, 24-27.) That is not enough. *See SAP Am. Inc. v. Cyandia, Inc.*, IPR2024-01433, Paper-13, 10-11 (Apr. 7, 2025) (rejecting notion that such activities constitute significant investment and concluding Factor 3

favors institution); *Kia Corp. v. Emerging Automotive LLC*, IPR2024-01167, Paper-14, 16-17 (Jan. 27, 2025); *Autonomous Devices*, IPR2023- 01172, Paper-21, 7-9.

Meanwhile, AICP concedes fact discovery, expert discovery, and the *Markman* hearing fall well after DI. (See Paper-8, 25-26.) 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 rescheduled from before DI to after DI); *Kia*, IPR2024-01167, Paper 14, at 17; *Autonomous Devices*, IPR2023-01172, Paper 21, at 8-9.

Comparing the timeline here to other cases with analogous timelines, as in the table below, confirms Factor 3 weighs against discretionary denial. (*Compare* Ex-2008 *with* TSMC-1070 through TSMC-1078.)

Stage	<i>SAP</i> (Instituted)	<i>Kia</i> (Instituted)	<i>Pictiva</i> (Instituted)	Present Case
Service of Complaint	219 days (9½ mos.) before IPR	294 days (10 mos.) before IPR	287 days (9½ mos.) before IPR	223 days (7½ mos.) before IPR
INV contentions	72 days before IPR	109 days before IPR	98 days before IPR	
	IPR Filed			
				16 days after IPR
CC Briefing	47 days before DI	53 days before DI	72 days before DI	7 days before DI
CC Hearing			30 days before DI	
	Decision on Institution (DI)			
CC Hearing	17 days after DI	18 days after DI		36 days after DI

Stage	<i>SAP</i> (Instituted)	<i>Kia</i> (Instituted)	<i>Pictiva</i> (Instituted)	Present Case
Fact Discovery Close	1 month after DI	1 month after DI	4 <i>days</i> after DI	2½ months after DI
Expert Discovery Close	2½ months after DI	2½ months after DI	1½ months after DI	4 months after DI
Jury Selection	6 months after DI	6 months after DI	5 months after DI	7 months after DI
FWD	6 months after Jury Selection	6 months after Jury Selection	7 months after Jury Selection	5 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, 11; *Kia*, IPR2024-01167, Paper-14, 17; *Samsung Display Co. Ltd. v. Pictiva Displays Int’l Ltd.*, IPR2024-01222, Paper-12, 7 (Mar. 6, 2025). There is no reason to find otherwise here, where the case schedule has not advanced as much.

Unlike the cases above, the DI in the present case precedes completion of claim construction briefing and precedes the *Markman* hearing by more than one month—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 1-2½ months longer relative to the DI. If those schedules weigh against discretionary denial, the same must be true here.

AICP does not dispute the timeline above. Instead, it cites inapposite caselaw addressing very different facts to exaggerate the degree of parallel investment.

AICP's reliance on *Chrimar* is unavailing. There, "[t]he Court did not receive the [stay] motion *until the eve of pretrial*"—the case's final stage, 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-8, 26 (citing *Samsung Elecs. Co. v. Truesight Commc'ns LLC*, IPR2024-01477, Paper-12).) There, the close of fact discovery was just two weeks after DI, and the *Markman* hearing had taken place. That is not a "comparable stage" to the facts at issue here. *Id.* By the DI in the present case, claim construction briefing will have barely started, not to mention that the *Markman* hearing will be held more than one month after DI, and fact discovery will remain open for 2½ more months. (Ex-2008, 5.)

Nor does AICP's reliance on *Digital Doors* support its position. (See Paper-8, 25.) As AICP admits, *Digital Doors* did not even find Factor 3 favored discretionary denial. (See *id.*) Moreover, IPR was *instituted*. See *Digital Doors*, IPR2023-00973, Paper-10, 25.

Moreover, TSMC has entered an exceedingly broad stipulation that weighs heavily against discretionary denial. See, e.g., *Tesla v. Navy*, IPR2025-00341, Paper-12, 2. In contrast, the *Truesight* petitioner entered only a basic *Sotera* stipulation (see IPR2024-01477, Paper-3, 89); the *Digital Doors* petitioner entered only a *Sand*

Revolution stipulation (see IPR2023-00973, Paper-2, 74); and the *Chrimar* petitioner offered no stipulation.

AICP’s complaint about TSMC’s alleged “delay” of “more than eight months” rings hollow. (See Paper-8, 25.) 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. Here, the timespan between the service waiver and filing was just over seven months. (See Ex-2009, 6 (Dkt. 13)); see also, e.g., *Tesla v. Navy*, IPR2025-00341, Paper-12 (petition filed 7 months into statutory deadline referred to panel). TSMC filed its petition after realizing that then-ongoing efforts to resolve the dispute privately were not progressing. At that time, TSMC had just received infringement contentions and had approximately two weeks to serve invalidity contentions.

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—four months before filing this Petition. (See TSMC-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 six teleconferences

thereafter to continue their discussions. (*Id.*, ¶15.) With then-ongoing 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.¹⁴ (*See* Paper-8, 5-6, 25.) This argument misses the point. In a case involving 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* §II.) Thus far,

¹⁴ Preparing contentions does not burden the court, which never receives them.

such activities have not been found relevant. *See, e.g., Cambridge Indus. USA, Inc. v. Applied Optoelectronics, Inc.*, IPR2025-00437, Paper-10, 2-3 (June 26, 2025) (referred without mentioning invalidity contentions served 10½ months before DI deadline.

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

Even more strained, AICP argues that "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-8, 7.) That does not warrant discretionary denial. 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-8, 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.¹⁵ And the court has not yet ruled on those 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): TSMC and UMC Have Committed to Extraordinarily Broad Stipulations to Eliminate All Overlap If 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. (See TSMC-1034 1-2; TSMC-1084, 13-16.)

TSMC offered a *Sotera* stipulation with its petition. Now aware of further developments in discretionary denial practice, TSMC offered a stipulation that extends well beyond *Sotera*, making this IPR an absolute alternative to district court

¹⁵ TSMC’s venue challenge, if successful, would change the trial schedule and the court itself, further undermining any notion of substantial investment or overlap.

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 Tesla v. Navy*, IPR2025-00341, Paper 12, at 2 (rejecting discretionary denial request where petitioner “filed a broad stipulation” narrower than TSMC’s).

TSMC’s invalidity contentions are immaterial. (*See* Paper-8, 27-28.) Effective upon IPR institution, the TSMC and UMC stipulations ***remove all prior art***, including the IPR grounds—meaning there would be ***no invalidity issues based on prior art*** in the district court. (*See* TSMC-1034, 1-2; TSMC-1084, 13-16.) Although AICP has speculated in related IPRs that the stipulations might not prevent some hypothetical and unspecified “future litigation involving the [asserted] patent[s]” (*see, e.g.*, IPR2025-000682, Paper-14, 2), any such litigation would be combined with the existing litigation or barred by claim preclusion. *See, e.g., In re PersonalWeb Techs. LLC*, 961 F.3d 1365, 1374 (Fed. Cir. 2020) (“judgment on the merits in a prior suit bars a second suit involving the same parties or their privies based on the same cause of action.” (quoted source omitted)).

Further, AICP admits there are “additional, unasserted claims” (claims 4-5 and 9) at issue here (*See* Paper-8, 28) further underscoring the lack of overlap between proceedings and weighing against exercising discretion to deny institution. *Pictiva*, IPR2024- 01222, Paper-12, 8. Although AICP argues inclusion of additional

challenged claims should not be entitled to weight, (Paper-8, 28), their presence provides the Board an opportunity to correct the material errors that infect all claims. (*See* §III.).

E. Factor 5 (Whether Parties Are Same): Parties Are Almost Always the Same

The parties before the Board and district court are the same. Because this is so frequently true, Factor 5 should be deemed neutral.

F. Factor 6 (Other Considerations):

Other considerations including strength of the petition, material error, Applicant's unfair dealings, case complexity, and TSMC's settled expectations weigh heavily *against* discretionary denial. (§V.) AICP's considerations offered for Factor 6 are meritless and fail to overcome TSMC's strong showing. (*See* Paper-8, 34-45.)

1. No Inconsistency Exists Between TSMC's Positions in the District Court and in the Petition

AICP attempts to distract from the compelling merits of TSMC's Petition by arguing TSMC's district court enablement contentions are inconsistent with positions taken in the Petition. (*See* Paper-8, 36-37.) This argument is both factually and legally incorrect.

AICP fails to apprise the Board that TSMC's lack-of-enablement contentions are based on AICP's overbroad interpretation of the claims to support its

infringement allegations. (*See* Ex-2016, 281-83.) Thus, to the extent AICP's incorrect interpretations apply for infringement, TSMC contends the claims then lack enablement. The lack of enablement under AICP's interpretation of claims has no bearing on, let alone gives rise to any inconsistency with, TSMC's arguments regarding invalidity based on prior art in this Petition, as the Petition applies the claim terms and prior art in the same way a POSITA would have. Thus, contrary to AICP's arguments, the prior art presented in the Petition is enabling whereas the claims of the '076 patent under AICP's incorrect interpretations are not enabled.

2. 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-8, 33, *see also id.*, 5, 41-44.) To hear AICP tell it, "accurately determining the invention date of the '076 patent" is "necessary to determine whether the Guha reference cited in the petition is prior art." (*Id.*, 33.) Yet, AICP has failed to request such discovery in district court. (*See generally* TSMC-1092.) AICP's protestation that obtaining discovery from Japan is essential is therefore implausible in view of its complete lack of demonstrated effort to obtain such information. (*See* Paper-8, 41-44.)

Regardless, AICP's suggestion that it might somehow antedate Guha, which is only a primary reference in four out of the Petition's eleven grounds, strains credulity. (*See* Paper-2 3-4.)

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); *see also* E.D. Tex. P. R. 3-2. AICP did not identify a priority date earlier than the filing date of JP2005-227457 for any claim of the '076 patent and its brief identifies no evidence to suggest an earlier invention date. (*See* TSMC-1091, 5-6.)

Guha predates the patent's priority date by approximately nine months. To suggest, without evidence, Applicant might have invented the '076 patent claims that far before the application filing lacks credibility. Moreover, any evidence would now be approximately 20 years old and difficult to obtain.

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

3. No Forum Has Adjudicated Any Claim of the '076 Patent, Which Weighs Against Discretionary Denial

No forum has yet considered the validity of the '076 patent. (*See, e.g.*, TSMC-1102.) The only cases involving the '076 patent are the two district court actions against TSMC and UMC and their respective Petitions. (*See* TSMC-1101.)

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

As noted above, TSMC has a strong record of success at the Board. The same quality challenges are present here, where TSMC's Petition clearly shows a material error made during prosecution and unfair dealings by Applicant. And 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.

IX. Conclusion

For the foregoing reasons, this Petition should be referred.

Date: August 12, 2025

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CERTIFICATE OF WORD COUNT

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 13,973 words, excluding this Certification and the following: Table of Contents, Tables of Authorities, and Certificate of Service.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies, in accordance with 37 C.F.R. § 42.205, that the foregoing **Petitioner's Opposition to Patent Owner's Discretionary Denial Request** were served on August 12, 2025, via e-mail directed to counsel of record for Patent Owner at the following:

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