

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LTD.,

Petitioner,

v.

MARLIN SEMICONDUCTOR LTD.,

Patent Owner.

IPR2025-01054

U.S. Patent 9,337,193

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

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Table of Contents

I.	Introduction.....	1
II.	Referral Is Warranted in View of Material Errors by the Examiner.....	3
A.	The Examiner Erred by Overlooking Disclosures in Basker and Kwok References in the File Wrapper.	4
B.	The Examiner Materially Erred by Conducting an Inadequate Search That Includes a Typographical Error in the Search Term.....	9
III.	Institution Is Warranted Because of the Strength of the Petition, Which Invalidates All Claims Over Three Separate Primary References.	11
IV.	Referral Is Warranted Because the Settled Expectations of Petitioner and Others Outweigh Marlin’s Alleged Expectations.....	12
V.	Institution Is an Efficient Use of Board Resources.	17
VI.	National Security, Economic, and Public Interest Considerations Warrant Referral.	18

EXHIBIT LIST

	Description
1001	U.S. Patent 9,337,193 to Chin-I Liao, et al. (“’193 patent”)
1002	File History of U.S. Patent 9,337,193 (“’193 File History”)
1003	Declaration of E. Fred Schubert, Ph.D. in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent 9,337,193
1004	CV of E. Fred Schubert, Ph.D.
1005	U.S. Patent 10,535,735 to Glass, et al. (“Glass”)
1006	U.S. Patent 7,538,387 to Tsai (“Tsai”)
1007	U.S. Patent Publication 2011/0210404 to Su et al. (“Su”)
1008	U.S. Patent 8,399,931 to Liaw, et al. (“Liaw”)
1009	U.S. Patent 8,703,556 to Kelly, et al. (“Kelly”)
1010	U.S. Patent 8,598,003 to Murthy, et al (“Murthy”)
1011	RESERVED
1012	<i>FinFETs and Other Multi-Gate Transistors</i> (J.-P. Colinge ed., 2008) (excerpted)
1013	U.S. Patent 1,745,175 to Lilienfeld (“Lilienfeld”)
1014	<i>Semiconductor Manufacturing Technology</i> (M. Quirk, J. Serda, 1st ed., 2000) (“Quirk/Serda”)
1015	https://semiwiki.com/eda/synopsys/1709-designing-with-finfets/ by Payne
1016	<i>CMOS VLSI Design: A Circuits and Systems Perspective</i> (N. Weste and D. Harris, Third Edition, 2005) (“Weste”)
1017	U.S. Patent 6,413,802 to Hu, et al. (“Hu”)
1018	“Investigation of FinFET devices for 32nm technologies and beyond” to Shang, et al. (2006)
1019	File History of U.S. Patent 9,006,805 (“’805 File History”)
1020	U.S. Patent Publication 2013/0200470 to Liu, et al. (“Liu”)
1021	U.S. Patent 8,455,313 to Basker, et al (“Basker”)

	Description
1022	<i>Microchip Fabrication</i> (P. Van Zant, 5th ed., 2004) (“Van Zant”)
1023	<i>Fundamentals of Semiconductor Fabrication</i> (G. May, S. Sze, 2011) (“May/Sze”)
1024	<i>Handbook of Physical Vapor Deposition (PVD) Processing</i> (D. Mattox, 2 nd Ed. 2010)
1025	Merriam-Webster, https://www.merriam-webster.com/dictionary/merge
1026	TechInsights, “Logic Detailed Structural Analysis of the Intel 22nm Ivy Bridge Processor” (May 2012)
1027	Merriam-Webster, https://www.merriam-webster.com/dictionary/cover
1028	“Highly tensile strained silicon–carbon alloys epitaxially grown into recessed source drain areas of NMOS devices” to M. Bauer, et al. (2006) (“Bauer”)
1029	Plummer, J., et al., “Silicon VLSI Technology: Fundamentals, Practice and Modeling” (Prentice Hall 2000) (“Plummer”)
1030	Nasdaq – This 1 Number May Ensure TSMC’s Market Dominance
1031	CNBC Transcript – US Commerce Secretary Howard Lutnick
1032	Removing Barriers to American Leadership in Artificial Intelligence
1033	TSMC Institution Decisions
1034	TSMC FWD Rate
1035	’193 Patent Assignment to Marlin
1036	TSMC Technology Overview
1037	Another Historic Investment Secured Under President Trump
1038	TSMC Annual Report 2024 (Excerpts)
1039	TSMC-Ansys Collaboration Press Release
1040	TSMC-Cadence Press Release
1041	TSMC’s Resurgence: What Lies Ahead for the Architect of AI
1042	Decoding TSMC’s Contribution to the AI and 5G Ecosystem
1043	Yahoo! Finance Article on TSMC Fab 21
1044	U.S. Patent 8,362,575 to Kwok et al.

I. Introduction

A core purpose of the PTAB under the AIA is to strengthen the integrity of the U.S. patent system by ensuring only valid and properly granted patents remain in force. The challenged patent, U.S. Patent 9,337,193 (“’193 patent”), directed to a FinFET with merged adjacent source-drain fin structures, issued as a result of material Examiner errors.

First, the Examiner overlooked teachings of two references cited in the ’193 patent’s file wrapper, Basker and Kwok, the combination of which discloses all limitations of claim 1. In fact, the Examiner did not make a single anticipation or obviousness rejection during prosecution despite the Applicant conceding, during prosecution of the parent patent (U.S. Patent 9,006,805), that Basker discloses the majority of the limitations of claim 1—a multi-fin FinFET with two fin-shaped structures, a gate structure, and at least two epitaxial structures. TSMC-1019, 91-93; Pet. 10. Kwok, cited by Applicant in an Information Disclosure Statement (“IDS”) during both the ’193 and ’805 prosecutions, provides the final feature alleged to be missing from the prior art—an epitaxial source/drain fin structure with a cap surrounding the epitaxial structure.

Second, the Examiner’s search strategy fell far below the standard demanded by the Office, resulting in the Examiner’s error in failing to find the strong primary references presented in the petition—Glass (single-reference §103), Su (single-

reference §103) and Kelly and Murthy (§103 combination). Specifically, the Examiner failed to search for the allegedly novel “cap” limitation because the Examiner’s attempted keyword search was overly narrow, structured using “AND” operators that required the presence of 17 separate terms, and included a typographical error for one of those required terms (“sruicture”). TSMC-1002, 70-71. This fatally flawed search, intended to find references disclosing the allegedly novel “cap” limitation, returned **zero results**.

Referral is warranted to address these material Examiner errors.

Additionally, the settled interests of TSMC and its customers outweigh any settled interests of the new Patent Owner (“PO”), Marlin, and warrant referral. TSMC and its customers had a settled expectation of non-enforcement due to the lack of assertion by UMC, an alleged “primary” competitor of TSMC’s, during the first 5 years of the ’193 patent’s life. During this time of patent inactivity, TSMC invested billions of dollars to manufacture FinFET chips, including for American customers who expected to be able to integrate those chips into their own products without incident. Marlin, a foreign entity which only recently acquired the patent, has no comparable expectations.

Institution is warranted and an efficient use of Board resources in view of *Fintiv* because the ’193 patent is not currently asserted in a parallel litigation.

There is, however, a threat of enforcement, as evidenced by Marlin’s claim of

infringement and existing lawsuits in the ITC and district court. In response, TSMC diligently challenged the '193 patent's validity in the PTAB to provide a true alternative to district court or ITC litigation. Moreover, this case involves complicated semiconductor technologies, and trained PTAB judges are best suited to adjudicate the merits of the Petition and to correct the past errors of this Office.

Finally, compelling national security, economic, and public interests make review an appropriate use of the Board's resources. TSMC is the world's largest chip maker, by some accounts providing around 90% of the world's advanced chips (i.e., FinFETs). TSMC-1030, 2. Its advanced semiconductor technology is vital to the U.S. supply chain, with a wide range of applications including AI (e.g., NVIDIA's AI supercomputers), 5G, health care, and national security and defense. Given TSMC's vital and strategic contribution to the U.S. supply chain, the Administration has a heightened interest in ensuring the Office corrects its error in issuing this patent.

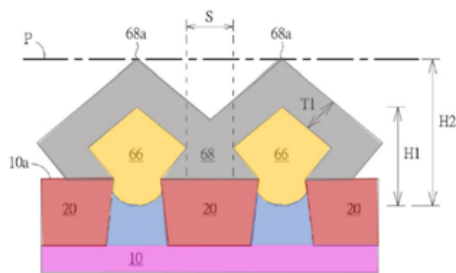
II. Referral Is Warranted in View of Material Errors by the Examiner.

TSMC's petition should be referred to address material errors during examination. First, the Examiner overlooked teachings of prior art in the file wrapper, Basker and Kwok, the combination of which teaches all limitations of the sole independent claim. Second, the Examiner's fatally flawed search failed to search for the allegedly novel feature and as a result did not identify any prior art teaching

this limitation, including the references applied in TSMC's compelling Petition.

A. The Examiner Erred by Overlooking Disclosures in Basker and Kwok References in the File Wrapper.

The '193 patent is directed to a semiconductor multi-fin FinFET device having **merged caps on adjacent source/drain fin epitaxial structures**, illustrated in Figure 7 below. Each source/drain fin structure includes epitaxial structure 66 (shaded yellow) and “another epitaxial layer” (shaded grey), referred to as a “cap” in claim 1, that surrounds the epitaxial structure. *See* TSMC-1001, 7:32-49.



1. A semiconductor device, comprising:
at least two fin-shaped structures, disposed on a **substrate**;
a gate structure, covering the fin-shaped structures;
at least two epitaxial structures, disposed at one side of the gate structure and respectively directly contacting each fin-shaped structure, wherein **the epitaxial structures** are spaced apart from each other; and
at least two caps, respectively surrounding **the epitaxial structures**, wherein at least two adjacent caps are merged together.

'193 Patent, Figure 7

'193 Patent-Claim 1

The Examiner rejected the claims solely “on the ground of nonstatutory double patenting” over claims of the parent '805 patent, stating the claims “are not patentably distinct from each other because applicant has described the same invention as the reference patent except for stating that the cap layer is formed from two merged cap layers resulting in the identical structure” and “[h]ence, the same invention is described in only slightly different terms.” TSMC-1002, 60-61. Applicant filed a terminal disclaimer to overcome the rejection, and the Examiner allowed the claims. TSMC-1002, 80, 88.

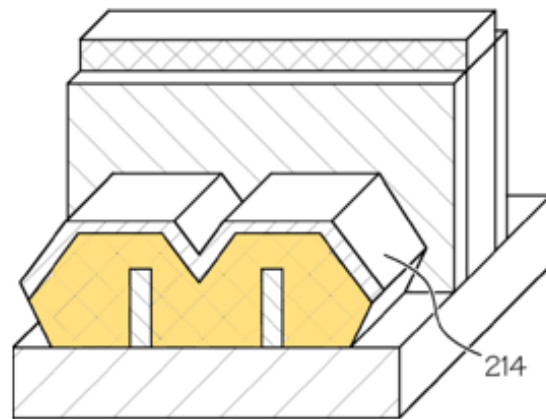
Material errors during prosecution of the parent '805 patent (combined with the fatally flawed search discussed below) led to the Examiner's failure to appropriately reject the '193 patent's claims under §§102 and 103. Specifically, during '805 patent prosecution, the Examiner rejected as-filed independent claim 1 as obvious over Liu in view of Basker. TSMC-1019, 57. The '805 patent-claim 1 is nearly identical to '193 patent-claim 1 with the sole difference being the '805 patent recites "a silicon cap, simultaneously surrounding the epitaxial structures" rather than a "at least two caps, respectively surrounding the epitaxial structures, wherein at least two adjacent caps are merged together," which the Examiner regarded to be "the identical structure." TSMC-1002, 61. The Examiner determined that while Liu discloses two epitaxial structures spaced apart from each other, it did not "disclose a silicon cap." TSMC-1019, 58. However, the Examiner determined that Basker did "disclose[] a silicon cap, simultaneously surrounding the epitaxial structure", citing to col. 3, lines 40-50 of Basker. TSMC-1019, 59.

In response, Applicant did not dispute that Basker disclosed two source/drain fin structures, acknowledging that "epitaxial silicon layer (214) is used to merge the individual fin structures (208) together." TSMC-1019, 92. However, Applicant contended Basker "fail[s] to teach or suggest that a cap layer, especially a silicon cap layer, can be disposed on these epitaxial layers." TSMC-1019, 92. Applicant further represented that a person skilled in the art ("POSITA")

“would not try to form or deposit another cap layer on the above-mentioned epitax-
ial layers because the cited references **provide no hints about this.**” TSMC-1019,
93. Applicant’s statements in the ’805 file history mischaracterized Basker and the
prior art—for instance, they ignored disclosures of Kwok which expressly dis-
closes a source/drain fin structure having an epitaxial structure and a cap layer
overlying the epitaxial structure. The Examiner allowed the pending ’805 claims
after receiving Applicant’s representations.

The Examiner erred in both the ’805 and ’193 prosecutions by ignoring
Basker’s suggestion of an additional “cap” layer in its epitaxial source/drain fin
structure. In the ’805 prosecution, the Examiner cited only a snippet of Basker’s
specification but ignored Figure 7

(right), illustrating the presence of an
additional layer (i.e., a cap) on the epi-
taxial layer (shaded yellow). *Unified
Pats., LLC v. Oceana Innovations LLC*,
IPR2020-01463, 2022 WL 500391, *17



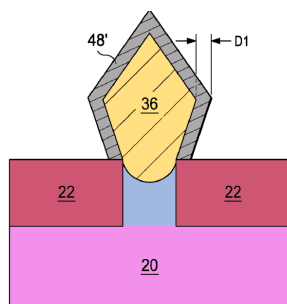
Basker, Figure 7

(PTAB Feb. 14, 2022) (“patent drawing
may serve as prior art ‘without referring to the surrounding description’ if ‘the
prior art features are clearly disclosed by the drawing.’”) Contrary to Applicant’s
representation, Basker provides not only a “hint,” but a roadmap for a POSITA to

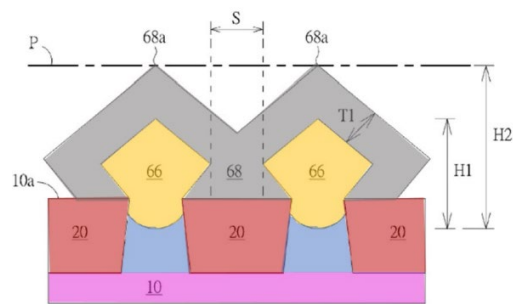
form or deposit a cap layer on the epitaxial structure.

The Examiner compounded these errors by completely overlooking the teachings of Kwok, submitted by Applicant in an IDS in both the '193 and '805 prosecutions. TSMC-1019, 13; TSMC-1002, 2. Kwok, filed more than 3 years before the '193 patent, relates to “structures and formation methods” of FinFETs—and like Basker, it discloses the purportedly novel “silicon cap layer,” the feature leading to allowance of the '805 and '193 patents. TSMC-1044, 1:12-14.

Specifically, Kwok’s Figure 8 (below) “illustrates an integrated circuit structure with caps [48’] formed on re-grown source/drain regions [36], wherein the caps [48’] are also formed on down-slant facets of the re-grown source/drain regions [36].” TSMC-1044, 2:10-13. As illustrated in the side-by-side figures below, Kwok discloses a source/drain fin structure having an “epitaxial structure[]” and a “cap[], surrounding the epitaxial structure[]”, as recited in '193-claim 1.



Kwok, Figure 8



'193 Patent, Figure 7

The Examiner erred by failing to appreciate that a POSITA would have been motivated to apply Kwok’s teachings of using a surrounding cap layer in a

source/drain fin structure to Basker's source/drain fin structures. Indeed, the prior art is filled with motivations for using a cap with the epitaxial structure of a source/drain fin structure. For example, Basker provides a motivation for connecting adjacent source/drain fin structures with a cap layer "to provide reduced resistance and improved performance." TSMC-1021, 2:48-51. This motivation was well known before the '193 patent. Colinge, e.g., teaches that connecting adjacent fin structures increases the contact area between source/drain regions and the source/drain contact, which reduces source/drain contact resistance; moreover the larger contact landing area relaxes the photolithography requirements for patterning source/drain contacts. *See* TSMC-1012, 100; Pet., 24-25. Moreover, Murthy (applied in the Petition) teaches that an epitaxial region and cap "provide[] a dramatic transistor performance gain due to combined effects of increased electron mobility gain at channel region, reduced short-channel effects (due to carbon suppressing phosphorus diffusion), and reduced parasitic resistance provided by very high phosphorus doping in the ($\text{Si}_y\text{P}_{1-y}$) epitaxial cap layer." TSMC-1010, 2:16-21, 4:38-42, 15:28-32.

The combination of Basker and Kwok (both cited in the '193 patent file wrapper) teaches all limitations of at least independent claim 1, demonstrating the Examiner erred in allowing the claims without any §§102 or 103 rejections. *See EctoWorld LLC v. RAI Strategic Holdings, Inc.*, IPR2024-01280, Paper 13, 5-6

(PTAB May 19, 2025).

The severity of the Examiner's material errors here are as strong as, if not stronger than, the material errors the Director has found justify referral. *See, e.g., Carbyne, Inc. v. TriTech Software Sys.*, IPR2025-00959, Paper-11, 2 (Oct. 3, 2025) (referring in part based on examiner error where reference "cited on an IDS during prosecution" "appears to disclose the purportedly missing claim limitations" leading to allowance); *Taiwan Semiconductor Mfg. Co. Ltd., et al v. Marlin Semiconductor Ltd.*, IPR2025-00847, Paper-11, 3-4 (Sept. 3, 2025) (referring for a 15-year old patent, because "Office erred in a manner material to the patentability" by "overlook[ing] certain teachings in" a reference); *Freightcar Am., Inc. v. Nat'l Steel Car Ltd.*, IPR2025-1046, Paper-20, 2-3 (Oct. 10, 2025) (referring for 13-year old patent, based on examiner error where "examiner overlooked certain teachings of" a disclosed reference "that appear[s] to disclose the allowable features").

B. The Examiner Materially Erred by Conducting an Inadequate Search That Includes a Typographical Error in the Search Term.

In addition to Basker and Kwok combination discussed above, the prior art is replete with teachings of merged caps formed on adjacent epitaxial structures. The Examiner's failure to locate this art is the result of an inadequate and sub-standard prior art search.

The Examiner performed only one search string specifically directed to

finding references disclosing the allegedly missing “cap” limitation. This search, reproduced below, was fatally flawed. The search string was structured using only the “AND” operator and therefore required that all 17 terms be present in the claims of a reference. One of these required terms included a typo—“sructure” instead of “structure”—resulting in 0 hits returned for the most critical prosecution search. TSMC-1019, 104. In other words, the Examiner conducted no prior art search for the allegedly novel feature of the issued claims. As a result, the Examiner failed to find Kwok, Su, Glass, and Murthy which each disclose a cap surrounding an epitaxial structure in a source/drain fin structure—a material examination error. Indeed, as established in the Petition, Su and Glass teach all limitations of claim 1 including the merged caps.

S13	0	(two and fin and shaped and disposed and substrate and gate and sructure and covering and two and epitaxial and respectively and contacting and spaced and apart and silicon and cap and simultaneously and surrounding).dm. and "257".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/12/11 15:31
-----	---	---	--	----	-----	---------------------

The Examiner’s other searches were also flawed. The search notes from the file wrapper of the parent ’805 patent indicate that, before issuing the only Non-Final Rejection, the Examiner searched only within one subclass of a single USPC class (257/288) and within a few subclasses of a single CPC class (H01L 29). TSMC-1019, 71. The Examiner’s search (S2) within the CPC subclasses returned 10,568 hits. The Examiner’s strategy to narrow this result set

was overly restrictive, requiring the terms “fin”, “epitaxial”, and “recess” to occur in the same paragraph (S4). The claim term “recess” is not even in the sole independent claim 1. Moreover, limiting the search to only the term “recess” failed to account for other terminology referring to this feature such as “cavities”, “etched” or “etching.” Additionally, the Examiner’s search string failed to account for stemming, pluralization, and other synonyms.

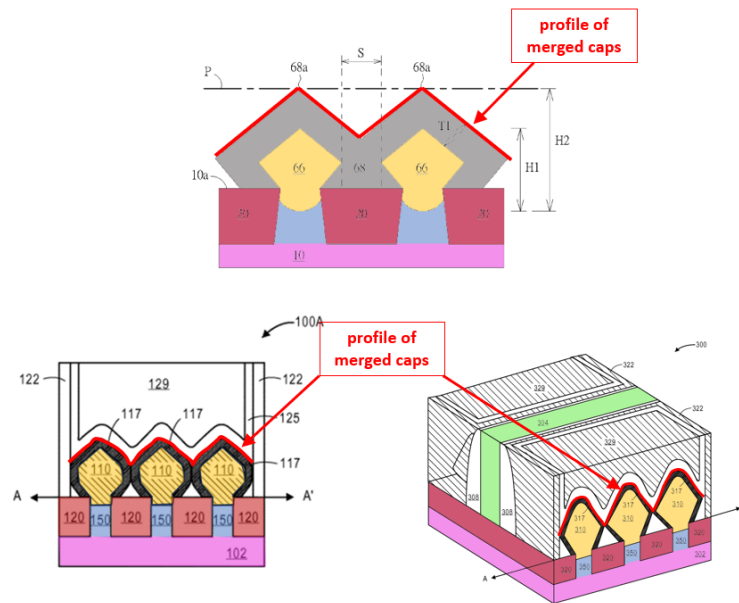
The Examiner’s flawed search, failing to craft a search directed to finding the allegedly novel feature, is exactly the type of Examiner error IPRs are designed to address. Referral is warranted for this reason alone. *See, e.g., Samsung Elecs. Co. Ltd. v. Wilus Institute of Standards and Tech., Inc.*, IPR2025-01043, Paper 9, 20-27 (discussing flawed text and classification code searching) & Paper 11 (denying PO’s request for discretionary denial); *Anthony, Inc. v. Control-Tec, LLC*, IPR2025-00559, Paper 12 (July 16, 2025) (finding material prosecution error where examiner failed to locate a petition reference).

III. Institution Is Warranted Because of the Strength of the Petition, Which Invalidates All Claims Over Three Separate Primary References.

The merits are strong, well-supported, and well-reasoned, and the invalidity positions are straightforward. TMSC is a strong Petitioner (TSMC-1033; TSMC-1034) and presents two single-reference and one double-reference §103 grounds against the sole independent claim—Glass, Su, and the Kelly-Murthy combination.

Pet., 12-25 (Glass), 57-71 (Kelly-Murthy), 99-110 (Su). The Examiner's fatally flawed search strategy failed to identify any of these references.

Marlin identifies no substantive deficiencies in any of these references. As set forth in the Petition, each primary reference discloses all claim 1 limitations, including, the “cap” limitation allegedly not found in the prior art. Moreover, the Petition's compelling merits can be gleaned even just from the side-by-side figures for the Glass ground below, which show the striking similarities between the alleged invention and Glass, raised in Ground 1 of the Petition. The Petition's other Grounds are equally compelling.



**'193 Patent, Figure 7 (top);
Glass, Figures 1A (bottom-left), 3I (bottom-right)**

IV. Referral Is Warranted Because the Settled Expectations of Petitioner and Others Outweigh Marlin's Alleged Expectations.

Marlin's main contention in requesting denial is that the patent issued 9

years ago, allegedly creating “settled expectations” that, alone, effectively trump all other considerations. Paper 6, 2-9. A settled expectations analysis focusing only on the Marlin’s expectations, without regard for the expectations of TSMC, its customers, and the public is not balanced or fair. TSMC, its customers, and the public have “settled expectations,” and they heavily outweigh Marlin’s expectations based solely on the enforcement age of that patent.

Since acquiring the ’193 patent in June 2021(TSMC-1035), Marlin began an enforcement campaign against the semiconductor industry, including TSMC’s customers. EX-2104, 1. And Marlin has since asserted patents against TSMC in the ITC, seeking an exclusion order. The Petition can resolve patentability of the ’193 patent’s claims before Marlin sues TSMC or its customers and disturbs the parties’ well-settled expectations that the ’193 patent remain dormant.

First, TSMC and its customers had settled expectations the ’193 patent would not be asserted due to the prior PO’s (UMC’s) inaction during the majority of the ’193 patent’s life. TSMC has been engaged in FinFET manufacture since 2013. TSMC-1036, 3. For over 5 years after the May 10, 2016 issue date, TSMC invested billions of dollars in fabrication facilities to manufacture millions of wafers per year using the FinFET technology, and its customers similarly invested significant resources into designs based on that technology. TSMC-1037. During this time, UMC, who Marlin claims is “TSMC’s main competitor” (Paper 6, 3),

remained silent and inactive. UMC's inactivity created settled expectations for TSMC and its customers that the patent would remain dormant. These expectations are reflected by TSMC's continuous manufacturing and extensive investment in this technology beginning before the '193 patent issued.

But Marlin's activities cannot unwind the settled expectations of TSMC and its customers created by UMC's longstanding inaction with the patent. In analogous bodies of law, the 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); *Nordlinger v. Hahn*, 505 U.S. 1, 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.").

Second, Marlin has not presented any persuasive evidence the '193 patent was ever "commercialized, asserted, marked, licensed, or otherwise applied" in the same "particular technology space" where it now seeks enforcement, which weighs against any claim by Marlin of "settled expectations." *Shenzhen Tuozhu Tech. Co., Ltd. v. Stratasys, Inc.*, IPR2025-00531, Paper-10, 3 (July 17, 2025); *Home Depot U.S.A., Inc. v. H2 Intellect LLC*, IPR2025-00480, Paper-11, 2-3 (Sep. 4, 2025). The

'193 patent has not been asserted in litigation in any venue, against any party. Marlin alleges that UMC is “another Taiwanese semiconductor foundry” and “TSMC’s main business competitor.” Paper 6, 1. Yet Marlin has not pointed to any evidence suggesting UMC enforced or demanded a license for the '193 patent against TSMC (or anyone) during the 5 years UMC owned the patent.

Marlin also misleadingly argues the '193 patent “has been commercialized, at least in the form of licensing” with Intel and Samsung¹. Paper 6, 4. Marlin’s sole support for this argument is a bare assertion by its corporate representative Paul Ahern that fails to disclose when the licenses were entered into, under what terms, or what products of Intel and Samsung are covered, let alone that the licenses were for products in the same technology space. Moreover, Marlin fails to put forth any evidence its purported licensees marked their products in any way to evidence commercialization that would disturb TSMC’s settled expectations. At bottom, when Marlin acquired patents (including the '193 patent) that had never been asserted with the intention of enforcing them, the only reasonable expectation it could have is that their validity would be challenged. *See Anaheim Gardens*, 953 F.3d at 1350-

¹ The Board authorized discovery of these licenses and TSMC served discovery on November 18. The parties are currently negotiating a protective order. Marlin has indicated the Intel license requires 10 business days notice before production. TSMC intends to request additional briefing when Marlin finally produces these licenses.

51 (“timing” of property purchase and “knowledge of the purchaser” are relevant in determining whether purchaser had reasonable investment-backed expectations); *Celgene Corp. v. Peter*, 931 F.3d 1342, 1361-63 (Fed. Cir. 2019) (owners know patents may be subject to post-issuance reconsideration proceedings).

For example, relying on *iRythm Tech., Inc. v. Welch Allyn, Inc.*, IPR2025-00363, Marlin argues that TSMC’s alleged knowledge of the ’193 patent through prosecution of its own patent applications favors denial. Paper 6, 4. But Marlin’s argument is factually deficient and distinguishable. Only one of the applications cites directly to the ’193 patent itself, and the ’193 patent was raised by the Examiner, not TSMC. EX-2103, 6. This case is thus unlike *iRhyhtm*, where the petitioner itself—and not the examiner—cited the challenged patent in an IDS filed in 2013. IPR2025-00363, Paper 10, 3. Further, the other applications do not refer to the ’193 patent at all, but rather to family members. EX-2103, 6. As described above, TSMC has settled expectations, based on UMC’s conduct, that the ’193 patent would not be asserted.

Finally, Marlin also argues that licensing negotiations between the parties beginning in 2024 weigh against any claim of settled expectations by TSMC. Paper 6, 7 (citing *DataDome S.A. v. Arkose Labs Holdings, Inc.* IPR2025-00693, Paper 13, 7). Marlin’s reliance on *DataDome* is unavailing. First, in *DataDome*, there was a parallel proceeding involving the challenged patents, and the Petitioner did not

argue that the Examiner had materially erred during prosecution. *DataDome*, Paper 6, 7; Paper 39, 26-31. Both of these factors differ in the present case and weigh in favor of institution. Moreover, TSMC filed this Petition just 12 months after receiving a demand, which was followed by a period of evaluation and good faith negotiations, and just 6 months after those negotiations discontinued by Marlin suing TSMC. TSMC was therefore far more diligent than the *DataDome* Petitioner who waited over two years after receiving an initial demand and 15 months after refusing a license to file its IPR Petition. *DataDome*, Paper 13, 7; *id.*, Pet’r. Ex. 1013 (January 11, 2023 letter seeking license on one of the challenged patents).

V. Institution Is an Efficient Use of Board Resources.

Additionally, institution here is warranted and an efficient use of Board resources in view of *Fintiv* because there is no parallel litigation involving the ’193 patent. *See, e.g., Intas Pharms. Ltd. v. Atossa Therapeutics, Inc.*, IPR2025-00799, Paper-12, 2-3 (Aug. 12, 2025) (“parties are not involved in a parallel proceeding involving the challenged patents” and “there is no concern of inconsistent outcomes or significant duplication of efforts resulting from two proceedings operating in parallel.”). No other tribunal is set to resolve the merits and, therefore, no risk of duplicated efforts, inconsistent decisions, or unnecessary expense exists.

Marlin sidesteps this important fact, arguing it is not dispositive because the petitions in *Intel Corp. v. Proxense LLC* were discretionarily denied despite having

no trial date. Paper 6, 7 (citing e.g., IPR2025-00327, Paper 12, 2 (June 25, 2025)).

However, in *Intel*, the Acting Director explained the discretionary denial decision was based upon Petitioner’s failure to “provide any persuasive reasoning as to why an *inter partes* review is an appropriate use of Board resources.” *Intel*, Paper 12, 2.

Here, TSMC presents several compelling reasons why IPR is an appropriate use of resources including to address the Examiner’s material errors and to resolve the dispute in an efficient manner avoiding “unnecessary and counterproductive litigation costs” before Marlin asserts this patent against TSMC.

Marlin has already alleged infringement of the ’193 patent and shown a willingness to bring TSMC to court. Institution before litigation promotes the very ideals that underlie the IPR process and is an appropriate use of Board resources.

VI. National Security, Economic, and Public Interest Considerations Warrant Referral.

Marlin acknowledges it has alleged infringement of the ’193 patent by TSMC. EX-2104. Given Marlin’s chosen forum for enforcement is the ITC, this threat to weaponize the ’193 patent undermines the U.S. semiconductor supply chain, harming priorities this Administration has made clear are vital to U.S. economic interests and national security. TSMC-1031, 3; TSMC-1032, 1. This makes IPR of the ’193 patent an appropriate use of the Office’s resources—indeed a compelling one.

TSMC’s FinFET fabrication capabilities are vital to leading U.S. companies (such

as Apple, NVIDIA, Amazon). More specifically, TSMC’s FinFET technology at the 5 nm processing node supports U.S. advanced semiconductor research and development in industries including AI, health care, and national security/defense.

TSMC-1038, 18-19. Promoting these emerging industries is important to advancing the Administration’s priorities. TSMC-1031, 3; TSMC-1032, 1.

Indeed, the U.S. government has recognized AI’s importance to national security and TSMC is an important part of the American AI-dominance strategy. TSMC-1039; TSMC-1040. For example, TSMC “produces the advanced processors that Nvidia [], AMD [] and Apple [] rely on to bring AI to life,” including, NVIDIA’s next-generation Blackwell AI chips for NVIDIA’s AI supercomputers. TSMC-1041, 2. Moreover, healthcare is a key area of projected growth in the AI semiconductor market, where the demand for “advanced chips—TSMC’s specialty—will continue to surge.” TSMC-1042, 5. Blocking or burdening access to TSMC-made advanced semiconductors could create a catastrophic single-point failure for medical R&D, causing “direct effects on future patient care” and “far-reaching consequences” for the development of life-saving technology. *Id.*

Marlin does not dispute the serious impact a ban on importing FinFET products into the United States would have to vital U.S. national security, public health, or economic interests. Instead, Marlin sets up a strawman—painting itself as protector of local industries. Paper 6, 9-11. The facts belie Marlin’s pronouncement.

Marlin does not practice the '193 patent, nor any patent it holds. There is no evidence that Marlin, a foreign entity, has invested in the U.S. semiconductor technology space, except by trying to assert its recently acquired patents. Given Marlin's assertion of its patents against U.S.-based companies (e.g., Apple, Qualcomm, Broadcom), Marlin's arguments that it is a protector of "local industry" ring hollow.

Finally, trying to cast TSMC as a "foreign entity" that "import[s] infringing products" and must be protected against twists the facts beyond recognition. There is zero evidence, other than a bare, unsupported statement from an interested party, Mr. Ahern, that any product of TSMC's infringes any patent in Marlin's portfolio, including the '193 patent. Additionally, Marlin ignores TSMC's commitment to invest \$165 billion in build manufacturing facilities in the United States in support of this Administration's goal to onshore advanced semiconductor manufacturing to bolster U.S. economic and national security interests. TSMC-1031, 3. Indeed, TSMC's Arizona facilities are already producing 4nm chips for American customers. TSMC-1043, 2. Marlin's enforcement campaign against TSMC seeks to damage the core supply chain of semiconductor chips from TSMC to the United States. These considerations therefore warrant referral.

Date: November 25, 2025

Respectfully submitted,

By: /Lori A. Gordon/

Lori A. Gordon
(Reg. No. 50,633)
Gordon-ptab@goodwinlaw.com
GOODWIN PROCTER LLP
1900 N Street, N.W.
Washington, D.C. 20036
Tel: (202) 346-4000
Fax: (202) 346-4444

Lead Counsel for Petitioner

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 November 25, 2025, via e-mail directed to counsel of record for Patent Owner at the addresses listed below:

WAMeunier@mintz.com
ARizk@mintz.com
MTRenaud@mintz.com
RDokhanchy@mintz.com
TAGoma@mintz.com
Mintz-Marlin-IPRs@mintz.com

Patent Owner has consented to electronic service at the aforementioned email addresses. Paper 4, 1-2.

Date: November 25, 2025

Respectfully submitted,

By: /Lori A. Gordon/

Lori A. Gordon
(Reg. No. 50,633)
Gordon-ptab@goodwinlaw.com
GOODWIN PROCTER LLP
1900 N Street, N.W.
Washington, D.C. 20036
Tel: (202) 346-4000
Fax: (202) 346-4444

Lead Counsel for Petitioner