

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

YANGTZE MEMORY TECHNOLOGIES CO., LTD.,
Petitioner,

v.

MICRON TECHNOLOGY, INC.,
Patent Owner.

IPR2025-00098
Patent 8,945,996 B2

Before JO-ANNE M. KOKOSKI, KIMBERLY McGRAW, and MICHAEL
T. CYGAN, *Administrative Patent Judges*.

PER CURIUM, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner, Yangtze Memory Technologies Co., Ltd., filed a petition for *inter partes* review of claims 1–4, 6–10, 12–13, 16–18, 23–26, 28, 30, and 32 of U.S. Patent No. 8,945,996 B2 (Ex. 1001, “the ’996 patent”). Paper 1 (“Pet.” or “Petition”). Patent Owner, Micron Technology, Inc., filed a preliminary response. Paper 8 (“Prelim. Resp.”). Thereafter, Petitioner filed an authorized reply (Paper 12 (“Prelim. Reply”)) to which Patent Owner filed an authorized sur-reply (Paper 13 (“Prelim. Sur-reply”)).

Under the authority delegated to us by the Director under 37 C.F.R. § 42.4(a), we may only institute an *inter partes* review when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see also* 37 C.F.R. § 42.108(c). Based upon our review of the present record, Petitioner has sufficiently shown a reasonable likelihood it will prevail with respect to at least one of the challenged claims and we disagree with Patent Owner’s arguments as to why the Board should deny institution. Accordingly, we institute an *inter partes* review as to all challenged claims.

II. BACKGROUND

A. *Related Matters*

The parties identify *Yangtze Memory Technologies Co., Ltd. v. Micron Technology, Inc. and Micron Consumer Products Group, LLC*, No. 3:23-cv-05792-RFL (N.D. Cal.) as a related matter involving the ’996 patent. Pet. 4; Paper 11, 1 (Petitioner’s Updated Mandatory Notice); Paper 3 (Patent Owner’s Mandatory Notice), 1.

Patent Owner also identifies four IPR proceedings (i.e., IPR2025-00498, IPR2025-00499, IPR2025-00500, and IPR2025-00501) as containing Discretionary Denial Briefing that contains substantially identical arguments to those presented in the present proceeding. Paper 14, 1.

B. Real Parties in Interest

Petitioner identifies itself (Yangtze Memory Technologies Co., Ltd. (“YMTC”)) as a real party of interest. Pet. 4. Petitioner also identifies Yangtze Memory Technologies, Inc. (YMTI), which is a defendant in the co-pending litigation and a subsidiary of Petitioner, as a real party in interest, “in an abundance of caution.” Paper 11, 1. Petitioner states that “[n]o other parties had access to or control over the present Petition, and no other party funded or participated in preparation of the present Petition.” Pet. 4.

Patent Owner identifies itself (Micron Technology, Inc.) “and its subsidiaries, including Micron Consumer Products Group LLC” as real parties in interest. Paper 3, 1.

Patent Owner asserts Petitioner failed to identify its immediate parent company, YMTC Holding, as well as “the Chinese Government” as real parties in interest. Prelim. Resp. 18 & n.8; *see also id.* at 18–27; Prelim. Sur-reply 5–8. We address this contention below.

C. The ’996 Patent (Ex. 1001)

The ’996 patent, titled, “Methods of Forming Circuitry Components and Methods of Forming an Array of Memory Cells,” is directed to forming circuitry components that includes forming a stack of horizontally extending and vertically overlapping features. Ex. 1001, codes (54), (57). The stack has a primary portion and an end portion. *Id.* at code (57). At least some of the features extend farther in the horizontal direction in the end portion

moving deeper into the stack in the end portion. *Id.* Operative structures are formed vertically through the features in the primary portion and dummy structures are formed vertically through the features in the end portion. *Id.* Horizontally elongated openings are formed through the features to form horizontally elongated and vertically overlapping lines from material of the features. *Id.* The lines individually extend from the primary portion into the end portion. *Id.* Sacrificial material that is elevationally between the lines is at least partially removed in the primary and end portions laterally between the horizontally elongated openings. Figure 9 of the '996 patent is reproduced below.

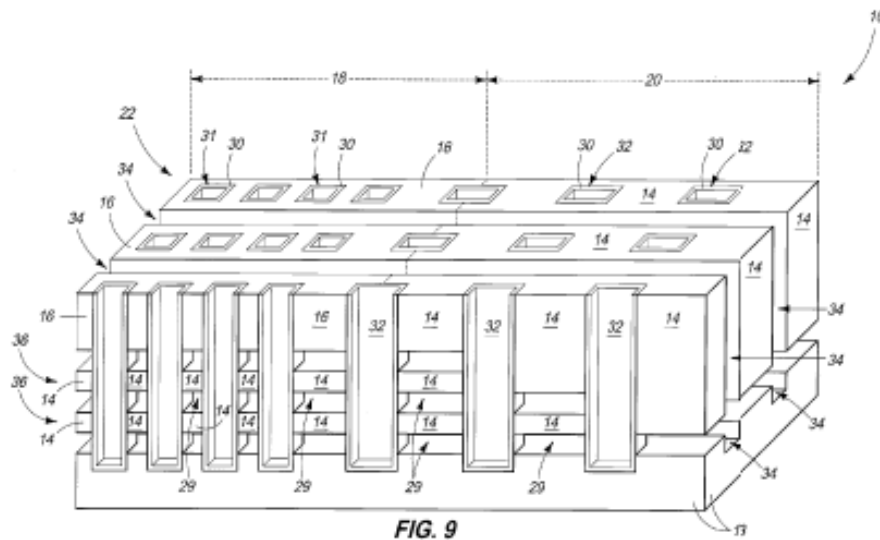


Figure 9 of the '996 patent is an oblique view of a semiconductor substrate fragment at a processing step that depicts operative structures 31, dummy structures 32, horizontally elongated and vertically overlapping lines 36, and sacrificial material 12. *Id.* at 2:49–51, 2:66–67, 6:39–52, 7:23–24, Fig. 9. At least some of the “sacrificial material 12 that is elevationally between lines 36 within primary portion 18 and end portion 20 has been

removed from being laterally between horizontally elongated openings 34.”
Id. at 6:53–56.

D. The Challenged Claims

Petitioner challenges claims 1–4, 6–10, 12, 13, 16–18, 23–26, 28, 30, and 32 of the ’996 patent. Pet. 1. Claims 1, 12, 17, and 25 are independent. Claim 1, with Petitioner’s bracketed numbering added, is reproduced below

1. [1.pre] A method of forming circuitry components, comprising:

[1.a] forming a stack of horizontally extending and vertically overlapping features, the stack comprising a primary portion and an end portion, at least some of the features extending farther in the horizontal direction in the end portion moving deeper into the stack in the end portion;

[1.b] forming operative structures vertically through the features in the primary portion and forming dummy structures vertically through the features in the end portion; and

[1.c] removing at least some sacrificial material that is elevationally between material of the features in the primary and end portions, wherein the dummy structures support material of the features from vertical movement in the end portion during said removing.

Ex. 1001, 11:15–28; Pet. vi.

E. Asserted Grounds of Unpatentability

Petitioner contends claims 1–4, 6–10, 12, 13, 16–18, 23–26, 28, 30, 32 of the ’996 patent are unpatentable on the following grounds.

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 6–10, 12, 13, 16–18, 23–26, 28, 30, 32	102 ¹	Chae ²
1–4, 6–10, 12, 13, 16–18, 23–26, 28, 30, 32	103	Chae
1–4, 18, 23, 25, 26, 28, 30, 32	103(a)	Chae, Kiyotoshi ³
22	103(a)	Chae, Hwang ⁴
12, 13, 16	103(a)	Chae, Pekny ⁵

Pet. 6.

In support of its unpatentability arguments, Petitioner relies on the declaration of Kelin J. Kuhn, Ph.D. Ex. 1003.

F. Overview of Asserted Art

1. Chae (Ex. 1004)

Chae is a U.S. patent publication that relates to “three-dimensional nonvolatile memory devices capable of reducing the resistance of gate electrodes” and methods of manufacturing the same. Ex. 1004 ¶ 7.

Chae discloses forming a “plate-shaped stack” of “first and second dielectric layers 210 and 215” horizontally extending “across a memory cell region MR and a contact region CR.” *Id.* ¶ 123. The “stack” in the “contact

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103 effective March 16, 2013.

Because the application giving rise to the ’996 patent was filed before that date, the pre-AIA version of §§ 102/103 applies. *See* Ex. 1001, code (60).

² Chae, US 2010/0133598 A1 (published June 3, 2010) (Ex. 1004).

³ Kyotoshi, US 2011/0156132 A1 (published June 30, 2011) (Ex. 1005).

⁴ Hwang, US 2011/0151667 A1 (published June 23, 2011) (Ex. 1006).

⁵ Pekny, US 7,906,818 B2 (issued Mar. 15, 2011) (Ex. 1007).

region CR” is “patterned in a stair shape” where “the stack height of the first and second dielectric layers 210 and 215 decreases toward the edge.” *Id.*

¶ 124. Chae further discloses forming “channel holes” in the “memory cell region MR” and “dummy holes” in the “contact region CR.” *Id.* ¶ 127.

“Thereafter, charge storage layers 222a and 222b are formed at the sidewalls of the dummy holes and the channel holes,” and the resulting structure is “filled with semiconductor material to form active pillars 224a and supporters 224b.” *Id.* ¶ 128. The “supporters 224b” are electrically inoperable “[b]ecause a conductive pattern such as the global word line 275 or the bit line 270 is not formed on the supporters 224b.” *Id.* ¶ 134. The “stack” is then “patterned to form line-shaped stack structures,” thereby forming horizontally elongated openings through the stack to “expose[]” the “sidewalls of the first and second dielectric layers 210 and 215.” *Id.* ¶ 129. Thereafter, “second dielectric layers 215” are removed, resulting in “empty space” “between the first dielectric layers 210.” *Id.* The “first dielectric layers 210 spaced apart from each other may be supported by . . . the supporters 224b of the contact region CR.” *Id.*

2. *Kiyotoshi (Ex. 1005)*

Kiyotoshi is a US Patent Publication directed to a method for manufacturing “nonvolatile semiconductor memory devices” in which a “stacked film in the memory cell region and the word-line contact region is collectively processed . . . to form the through-holes 135.” Ex. 1005 ¶ 123. “Semiconductor films 131” in the memory cell and word-line contact regions are “deposited in the through-holes 135.” *Id.* ¶ 124. Dielectric films are formed to fill the inside of the hollow cylindrical semiconductor films 131. *Id.* ¶ 125. The “semiconductor films 131” in the “memory cell region”

form “memory strings MS” while the “semiconductor films 131 arranged in the word-line contact region 20 do not form the memory strings MS and are dummy semiconductor films 131.” *Id.* ¶ 116.

3. *Hwang (Ex. 1006)*

Hwang is a US Patent Publication that relates to methods of manufacturing three-dimensional memory devices. Ex. 1006, codes (10), (57), ¶¶ 2–3. Hwang discloses forming a stack of “inter-layer insulating layers 120” and “lower sacrificial layers 130” divided into a “cell array region CAR” and “contact regions UWCTR and LWCTR.” *Id.* ¶¶ 32–33. Within the contact regions, “a terraced shape is formed” by “patterning.” *Id.* ¶ 36.

4. *Pekny (Ex. 1007)*

Pekny is a US Patent titled “Memory Array with a Pair of Memory-Cell Strings to a Single Conductive Piller.” Ex. 1007, code (54). In one embodiment, the memory cell portion 220 of the memory array has dielectric layers 222 that “alternate” with conductive layers 224. *Id.* 5:23–25. Pekny also discloses that “holes 226 are formed passing through dielectric layers 222 and conductive layers 224.” *Id.* at 5:30–33. Portions of each of holes 226 may be “filled with a conductive layer, e.g., a conductive pillar, such as plug, 230.” *Id.* at 5:47–49. “[E]ach conductive pillar 230 contacts a respective one of conductive pillars 214.” *Id.* at 5:49–51.

III. ANALYSIS

A. *Grounds of the Petition*

For the reasons below, we determine that Petitioner has satisfied the threshold for institution as to at least one claim. Accordingly, we institute *inter partes* review on all claims and all grounds raised in the Petition. *See SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018) (holding that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition); *AC Technologies S.A. v. Amazon.com*, 912 F.3d 1358, 1364 (Fed. Cir. 2019) (stating “if the Board institutes an [*inter partes* review], it must similarly address all grounds of unpatentability raised by the petitioner”).

1. *Legal Standards*

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

Anticipation “requires that every element and limitation of the claim was previously described in a single prior art reference, either expressly or inherently, so as to place a person of ordinary skill in possession of the invention.” *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1082 (Fed.

Cir. 2008). Anticipation also requires that a reference discloses “all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)).

B. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. Petitioner contends

that a person of ordinary skill in the art (“POSITA”) would have had a Bachelor’s degree in electrical engineering, materials science, or physics, or a closely related field, along with at least two years of experience in semiconductor fabrication and that a higher level of education might make up for less experience, and vice versa. Pet. 10 (citing Ex. 1003 ¶¶ 57–58). At this stage of the proceeding, Patent Owner neither responds to Petitioner’s proposed definition, nor provides a definition of its own. *See* Prelim. Resp. Petitioner’s undisputed proposed definition appears to be consistent with the cited prior art and the disclosure of the ’996 patent, and we adopt it for purposes of this Decision.

C. Claim Construction

We construe the ’996 patent claims using the same claim construction standard that would be used to construe a claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner asserts that the only term needing construction is “dummy structure,” which the parties agreed in the related district court proceeding means “electrically inoperable structure that mimics a physical property of an operative structure.” Pet. 10 (citing Ex. 1008 (“Joint Claim Construction

Statement”), 2). Petitioner further asserts that all other claim terms should be construed according to their plain and ordinary meaning. *Id.* (citing Ex. 1003 ¶ 59). At this stage of the proceeding, Patent Owner does not dispute Petitioner’s contention or proffer any alternate claim constructions. *See generally* Prelim. Resp.

For the purposes of this Decision, we have adopted the claim construction of “dummy structure” that was agreed to by the parties in the related district court proceeding as an “electrically inoperable structure that mimics a physical property of an operative structure.” However, our claim constructions are preliminary at this stage of the proceeding.

D. Asserted Unpatentability of Claim 1 over Chae

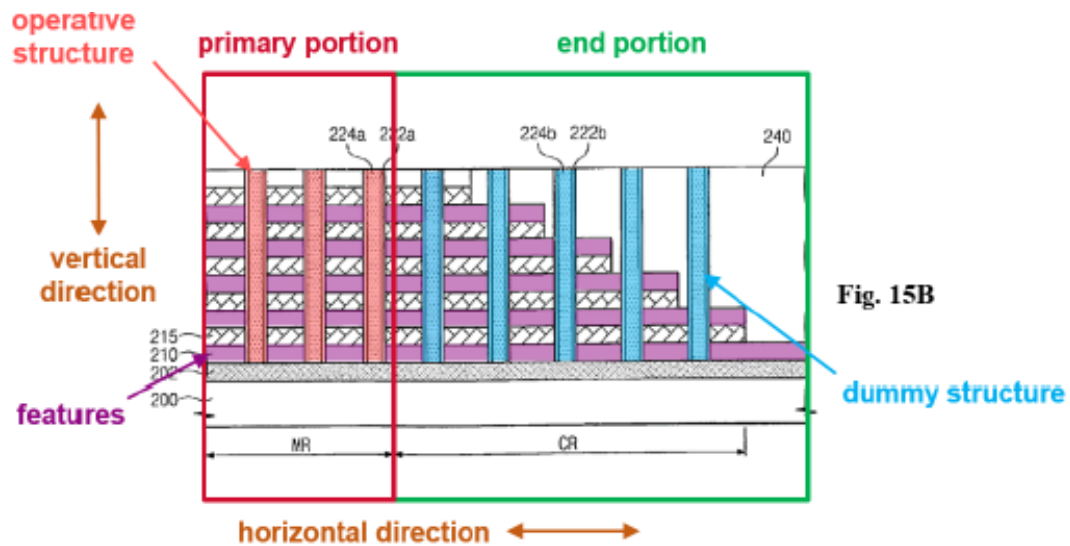
Petitioner contends that claim 1 is either anticipated by or would have been obvious over Chae. Pet. 11–19 (citing Ex. 1004 ¶¶ 2, 7, 17, 30–33, 82–84, 123–129, 134, Figs. 10, 15A–C; Ex. 1003 ¶¶ 66, 70–85). At this stage of the proceeding, Patent Owner does not present any arguments to rebut Petitioner’s contentions. *See generally* Prelim. Resp. For the reasons set forth below, we determine Petitioner has sufficiently shown a reasonable likelihood that at least claim 1 would have been obvious over Chae.

*1. [1.pre]–[1.a] A method of forming circuitry components, comprising:
forming a stack of horizontally extending and vertically overlapping features, the stack comprising a primary portion and an end portion, at least some of the features extending farther in the horizontal direction in the end portion moving deeper into the stack in the end portion;*

Petitioner contends that Chae discloses or suggests the preamble and the step of claim element [1.a] because Chae discloses a method for making

memory devices that includes forming first and second dielectric layers 210 and 215 in a vertically stacked structure, such that the first dielectric layers 210 form a stack of horizontally extending and vertically overlapping features. Pet. 13–14 (citing Ex. 1004 ¶¶ 123–124).

Chae Figure 15B, with Petitioner’s color annotations added, is reproduced below.



Chae Figure 15B above, with Petitioner’s color annotations added, depicts a sectional view illustrating a method for fabricating a nonvolatile memory device, depicting first and second dielectric layers 210 and 215, memory cell region MR, contact region CR, active pillars 224a, supports 224b, and charge storage layers 222a and 222b. Pet. 17; Ex. 1004 ¶¶ 32, 123 128.

Petitioner further states that Chae’s stack has a “memory cell region CR” (primary portion) and a “contact region CR” (end portion), and that the first and second dielectric layers 210 and 215 stacked on the contact region CR are patterned in a stair shape, in which the lower steps of first dielectric layer 210 extend farther into contact region CR (end portion) than the higher steps. *Id.* (citing Ex. 1004 ¶¶ 123–124, Fig. 15A; Ex. 1003 ¶¶ 74–76).

2. *[1.b] forming operative structures vertically through the features in the primary portion and forming dummy structures vertically through the features in the end portion; and*

Petitioner asserts that Chae discloses or suggests the limitations of claim element [1.b] because Chae discloses forming charge storage layers 232a and active pillars 224a (operative structures) through first dielectric layers 210 in memory cell region MR (features in the primary portion) and forming charge storage layers 222b and supporters 224b (dummy structures) vertically through first dielectric layers 210 in contact region CR (vertically through features in the end portion). Pet. 15–17 (citing Ex. 1004 ¶¶ 128; Ex. 1003 ¶¶ 77–78). Petitioner further asserts that charge storage layers 222b and supporters 224b are “dummy structures” because they are electrically inoperable structures that mimic a physical property of an operative structure. *Id.* at 16 (citing Ex. 1008, 2). Petitioner contends they are not electrically connected to other components, and are thus electrically inoperable, and that they mimic a physical property of the operative structures because they are formed of identical or similar materials as charge storage layers 222a and active pillars 224a. *Id.* at 16–17 (citing Ex. 1004 ¶¶ 37, 126, 128, 134, Fig. 15B; Ex. 1003 ¶ 81)

3. *[1.c] removing at least some sacrificial material that is elevationally between material of the features in the primary and end portions, wherein the dummy structures support material of the features from vertical movement in the end portion during said removing.*

Petitioner asserts that Chae discloses or suggests the limitations of claim element [1.c] because Chae discloses removing the second dielectric layers 215 (sacrificial material) between first dielectric layers 210 (material

of the features) in the primary and end portions and that charge storage layers 222b and supporters 224b (dummy structures) support the dielectric layers (features) from vertical movement during the removal process Pet. 17–19 (citing Ex. 1004 ¶¶ 123, 129, Fig. 15C; Ex. 1003 ¶¶ 83–85).

At this stage of the proceeding, Patent Owner does not dispute Petitioner's assertions regarding the above recited limitations. We have reviewed Petitioner's arguments for the above limitations and determine Petitioner has sufficiently shown that Chae discloses or suggests each of these limitations, and thus shows a reasonable likelihood that it would prevail in showing that claim 1 is unpatentable over Chae. Accordingly, we institute *inter partes* review of all challenged claims based on all grounds asserted in the Petition. See *SAS*, 138 S.Ct. at 1354.

E. Remaining Challenges

Petitioner also asserts that claims 2–4, 6–10, 12–13, 16–18, 23–26, 28, 30 and 32 are anticipated or rendered obvious by Chae; that claims 1–4, 18, 23, 25, 26, 28, 30, and 32 would have been obvious over Chae in view of Kiyotoshi; claim 22 would have been obvious over Chae in view of Hwang; and that claims 12, 13, and 16 would have been obvious over Chae in view of Pekny. Pet. 11–73.

Because we determine that Petitioner shows a reasonable likelihood of prevailing with respect to claim 1, and Patent Owner does not present any arguments directed these claims, we do not address these challenges at this stage of the proceeding, which are best left for trial after full development of the record.

F. Patent Owner's Arguments for Denial

Although Patent Owner does not contest the merits of Petitioner's arguments at this stage of the proceeding, Patent Owner does make a number of arguments as to why the Board should deny institution. In particular, Patent Owner asserts that (1) YMTC is not a "person" entitled to file an IPR, (2) Petitioner failed to identify all of the real parties in interest, and (3) the Board should exercise its discretion to deny institution under § 314. We address these arguments in turn.

1. Whether YMTC is an Authorized "Person" entitled to file an IPR

Patent Owner asserts that YMTC is not a statutorily authorized "person" under 35 U.S.C. § 311(a) entitled to file an IPR petition under the Supreme Court's holding in *Return Mail, Inc. v. U.S. Postal Service*, 587 U.S. 618 (2019). Prelim. Resp. 1, 15–18; Prelim. Reply 3–5. Patent Owner asserts that "YMTC is the same type of government entity as the [U.S. Postal Service ("USPS")]" and "because the USPS is not an authorized 'person' under *Return Mail*, neither is YMTC, and the Board should deny institution." Prelim Resp. 18; *see also id.* at 17–18 (asserting similarities between YMTC and the USPS).

We disagree with Patent Owner's argument because it does not disprove that YMTC is a company, and therefore a "person" under § 311 regardless of whether it is also a government entity. Further, Patent Owner does not show that the exclusion of U.S. government entities in *Return Mail* should be extended to exclude foreign government entities.

35 U.S.C. § 311(a) provides that only "person[s]" other than the patent owner, may file a petition for *inter partes* review. The Supreme Court

held that the USPS is not a “person” under § 311 because it is a “federal agency.” *See Return Mail*, 587 U.S. at 637 (stating “we hold that a federal agency is not a “person” who may petition for post-issuance review under the AIA”). In reaching this decision, the Supreme Court stated that Congress has defined a “person” to include “corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals” and that “[n]otably absent from the list of ‘person[s]’ is the Federal Government.” *Id.* at 627 (quoting 1 U.S.C. § 1 (the “Dictionary Act”⁶)); *see also* 39 U.S.C. § 101(a) (stating that the USPS is “an independent establishment of the executive branch of the Government of the United States”), § 201 (stating the USPS is “operated . . . by the Government of the United States”).

Patent Owner does not dispute that YMTC is a company. *See, e.g.*, Prelim. Resp. 6 (stating that “YMTC is China’s State-Owned NAND Memory *Company*”) (emphasis added). Thus, as a company, YMTC constitutes a “person” under the express language of the Dictionary Act, which is eligible under 35 U.S.C. § 311(a) to file a petition for *inter partes* review. 1 U.S.C. § 1. Patent Owner has not provided any binding precedent, nor any persuasive argument, that the holding of *Return Mail* should be extended to exclude a “company”—even if such company were under the control of a foreign government—from the express definition of a “person” under 1 U.S.C. § 1.

⁶ The Supreme Court explains that the Dictionary Act (1 U.S.C. § 1) provides the definition of a person that courts used in “determining the meaning of any Act of Congress, unless the context indicates otherwise.” 587 U.S. at 627 (citations omitted).

We have considered, but are not persuaded by, Patent Owner’s argument that YMTC is not an authorized “person” under § 311 because “the USPS (with respect to the U.S. government) is analogous to YMTC (with respect to the Chinese government).” Prelim. Resp. 17. Patent Owner argues that the reasoning in *Return Mail* “applies with equal (if not more) force to foreign governments” because (1) the Dictionary Act does not include foreign governments and (2) nothing suggests that Congress created a patent review process that prohibits the participation of U.S. federal agencies, but allows foreign governments or agencies to do so. *Id.* at 16.

Patent Owner’s arguments, however, fail to address the U.S. government-specific analysis set forth in *Return Mail*. As noted in *Tik Tok Inc.*, the “overarching notion underlying *Return Mail*’s analysis is that the *U.S. Government* is treated differently than private parties in adversarial, adjudicatory patent proceedings.” *Tik Tok Inc. v. Cellspin Soft, Inc.*, IPR2024-00757, Paper 33 at 12 (PTAB June 2, 2025) (internal citations omitted, emphasis added), *Director review granted*, Paper 34 (PTAB June 5, 2025); *see also, e.g., Return Mail*, 587 U.S. at 634–636 (stating how the U.S. government is “in a unique position among alleged infringers given that 28 U.S.C. § 1498 limits patent owners to bench trials before the Court of Federal Claims”), 636 n.10 (discussing estoppel procedures that may not be applicable to the U.S. government), 636 (discussing the “awkward situation” that might arise as a result from a civilian patent owner defending their patent in “an adversarial proceeding initiated by one federal agency (such as the Postal Service) and overseen by a different federal agency (the Patent Office).” Patent Owner does not address, let alone persuade us, that these same considerations apply to a foreign government or foreign government

entity, such that we should extend *Return Mail's* holding to foreign governments or foreign government entities.

Thus, for the foregoing reasons, we determine that the company YMTC is a “person” entitled to file an IPR under § 311(a).

2. *Failure to Identify All Parties in Interest Under 35 U.S.C. § 312(a)*

35 U.S.C. § 312(a)(2) provides that a petition for *inter partes* review may be considered only if the petition identifies all real parties in interest (“RPI”). Patent Owner argues we should decline to institute the Petition because the Petition “chose to omit the Chinese government⁷ as an RPI” and “also failed to name its immediate parent company, YMTC Holding⁸, as an RPI.” Prelim. Resp. 18 & n.8; *see also id.* at 18–27; Prelim. Sur-reply 5–8.

Even assuming, *arguendo*, that the “Chinese government” or YMTC Holding constitute an unnamed RPI, Patent Owner does not sufficiently show that the failure identify the RPI is a reason to decline to institute this proceeding. Patent Owner has not asserted that a statutory bar or other

⁷ Patent Owner refers to the “Chinese government” as an unnamed RPI but does not identify what the “Chinese government” is. *See, e.g.*, Prelim. Resp. 3–5 (referring to “China’s State Council”), 6 (municipal governments), 7–8 (identifying the seven shareholders of YMTC Holding as “state-owned enterprises”), 8 (stating the actual controller of the Yangtze River Industrial Investment Group is the “administration of Wuhan East Lake High-tech Development Zone”), 8 (stating the actual controller of the Yangtze River Industrial Group is the “Hubei Provincial State-owned Assets Supervision and Administration Commission”).

⁸ More particularly, Patent Owner identifies YMTC’s parent as Yangtze Memory Technologies Holding Co., Ltd. (“YMTC Holding” or “YMTH”). Prelim. Resp. 7 (citing Ex. 2021 (“YMTC’s Corporate Disclosure Statement), 2).

estoppel would apply to either the Chinese government or YMTC Holding in this proceeding. 35 U.S.C. § 315(b); *SharkNinja Operating LLC v. iRobot Corp.*, IPR2020-00734, Paper 11, 18 (PTAB Oct. 6, 2020) (precedential); *Lumentum Holdings, Inc. v. Capella Photonics, Inc.*, IPR2015-00739, Paper 38 at 6 (PTAB Mar. 4, 2016) (precedential) (stating that a petition may be corrected, including adding a real party in interest, without assigning a new filing date); *see also* Paper 9 (granting Petitioner’s unopposed motion to amend its mandatory notices to add a subsidiary of YMTI as an RPI without changing the filing date).

Indeed, in *Unified Patents, LLC v. MemoryWeb, LLC*, the Director instructed that the precedential *SharkNinja* decision held that it “best serves the Office’s interests in cost and efficiency to not resolve an RPI issue when it would not create a time bar or estoppel under 35 U.S.C. § 315 in that proceeding.” *Unified Patents, LLC v. MemoryWeb, LLC*, IPR2021-01413, Paper 76 at 4 (PTAB May 22, 2023) (“*Unified Patents*”) (vacating the Board’s RPI determination in the Final Written Decision as not necessary to resolve the proceeding, such as a time bar under § 315(b) or estoppel under 35 U.S.C. § 315(e)). Here, as neither the Chinese government nor YMTC Holding have been sued for patent infringement, Patent Owner has not shown that a determination of whether the Chinese government or YMTC Holding are an RPI, or are in privity with Petitioner, would impact the underlying proceeding or result in a time bar or estoppel. As such, we do not address Patent Owner’s RPI argument.

We have also considered Patent Owner’s contention that the Chinese government may file additional IPR proceedings through other Chinese semiconductor companies, such as Fujian Jinhua Integrated Circuit Co.,

Ltd., if this petition is denied or unsuccessful and that real party in interest provisions seek to protect patent owners from harassment via “successive petitions by the same or related parties.” Prelim. Resp. 25; *see also Unified Patents*, Paper 76 at 5 (noting Petitioner’s argument that a non-binding advisory opinion on RPI would prejudice the asserted RPI parties by prejudging the issue without their participation). Concerns that future petitions may be filed by parties that are the same or related to Petitioner may be addressed in any such future proceeding. *See Patent Trial and Appeal Board Consolidated Trial Practice Guide* (Nov. 2019)⁹ (“Consolidated TPG”), 55–63; *General Plastic Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15–18 (PTAB Sept. 6, 2017) (precedential) (recognizing the “potential for abuse of the review process by repeated attacks on patents” and setting forth factors to consider in exercising discretion on instituting *inter partes* review as to “follow-on” petitions challenging the same patent previously challenged in an *inter partes* review proceeding).

As such, we do not deny institution for Petitioner’s alleged failure to list all RPIs.

3. *Request for Discretionary Denial Under § 314(a)*

Under 35 U.S.C. § 314(a), the Director has discretion to deny institution. Patent Owner states that the Board should exercise its discretion to deny institution under § 314(a) “because it should not provide the Chinese

⁹ The Consolidated PTG is available at <https://www.uspto.gov/TrialPracticeGuideConsolidated.Consolidated Trial Practice Guide>

government with an opportunity to benefit from the outcome of this IPR proceeding based on the significant foreign policy and national security implications of allowing a foreign state actor to challenge U.S.-granted intellectual property rights.” Prelim. Resp. 1–2, 30–31. Patent Owner asserts that instituting review would set a dangerous precedent, enabling any foreign government to challenge U.S. patents through proxies and thereby threaten the economic and strategic interests of the United States. *Id.* at 2, 30–31.

We are not persuaded by Patent Owner’s arguments. To date, the Director has not provided any guidance as to when a panel should deny institution based on foreign policy or national security implications, applicable to the facts presented here. To the contrary, the USPTO has expressly determined that Board panels, in considering discretionary denial sought in a Preliminary Response filed on or before March 26, 2025, may not consider such factors. *FAQs for Interim Processes for PTAB Workload Management*, FAQ 5, <https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management> (stating, “The panel will not address any new factors outlined in the Process Memorandum”). Accordingly, we decline to exercise discretion to deny institution for this requested reason.

Patent Owner also argues that we should exercise the Director’s discretion to deny institution, which applies for “‘whatever reason’ at all, including based on a party’s status as a sovereign,” because the Chinese government is in privity with YMTC and is using YMTC as a proxy to challenge U.S. patents that impede its significant investments in YMTC and strategic objectives in the semiconductor industry. Prelim. Resp. 27–29. To support this argument, Patent Owner cites to *Microsoft Corp. v. Science*

Applications Int’l Corp, IPR2019-01311, Paper 35 at 13–14 (PTAB Jan. 27, 2020), in which the PTAB “denied institution because the petitioner was in privity with the U.S. government, which had been served a complaint more than one year before Microsoft filed its IPR petition.” Prelim. Resp. 27. Patent Owner also cites to a statement in the *Microsoft* decision that the panel “would exercise our discretion to deny review to avoid any concerns that the government is obtaining a benefit to which it is not permitted under *Return Mail*.” *Id.* at 28 (citing *Microsoft*, IPR2019-01311, Paper 35 at 13–14).

These additional arguments are also not persuasive. Unlike in *Microsoft*, in which the statutory bar under 35 U.S.C. § 315(b) applied because the U.S. government had been sued more than one year prior, there is no argument in the present proceeding that the Chinese government has been sued for patent infringement or is otherwise subject to a statutory bar under § 315(b). *See Microsoft*, IPR2019-0311, Paper 35, 13; Prelim. Resp. 28 n.9. Additionally, as stated above, we determine that Patent Owner has not shown that *Return Mail* applies to the facts presented here. Thus, we decline to exercise discretion to deny institution based on these additional arguments.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing at least one of the challenged claims of the ’996 patent is unpatentable. Because Petitioner has satisfied the threshold for institution as to at least one claim, we institute *inter partes* review on all claims and all grounds raised in the Petition.

At this preliminary stage, we have not made a final determination with respect to the patentability of the challenged claims or any underlying factual and legal issues, including claim construction.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of all challenged claims of the '996 patent on all asserted grounds is instituted; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this Decision.

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For PETITIONER:

James Davis
Christopher Bonny
ROPES & GRAY LLP
james.l.davis@ropesgray.com
christopher.bonny@ropesgray.com

For PATENT OWNER:

Jeremy Jason Lang
Travis Jensen
ORRICK, HERRINGTON & SUTCLIFFE LLP
jlang@orrick.com
tjensen@orrick.com