UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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INTEL CORPORATION,
ADVANCED MICRO DEVICES, INC.
Petitioners,

v.

ADVANCED CLUSTER SYSTEMS, INC.,
Patent Owner.

_____

IPR2025-00915
U.S. Patent No. 11,563,621

PETITIONERS' OPPOSITION TO PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL

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I. A Review of the '621 Patent is an Appropriate Use of Office Resources

A. Patent Owner has no settled expectations because the '621 patent is less than 3 years old.

- US 11,563,621 ("'621 patent") issued Jan. 24, 2023, ***less than two years and four months*** before the filing of the petition.
- The '621 patent comes from a family of patents already determined to be ***likely unpatentable***.

B. This IPR proceeding seeks to correct a material error made by the Examiner during prosecution.

- The Examiner did not issue any prior art rejection.
- The Examiner overlooked specific teachings in the prior art that teach the computer cluster recited in the '621 patent's claims.

C. The Final Written Decision will likely issue before the District Court trial date.

The trial date scheduled for each of Patent Owner's parallel litigations against Petitioners Intel Corporation and AMD ("Petitioners") is Nov. 16, 2026, while the Final Written Decision would be issued approximately Nov. 27, 2026. However, the district court has scheduled a total of eleven jury trials on that same date in the same court. Given that it would be impossible for 11 jury trials to be conducted simultaneously in the same courtroom before the same judge, the trials involving Petitioners will need to be postponed. Accordingly, the Final Written

Decision will be issued before any district court trial.

D. 35 U.S.C. § 325(d) does not apply because the petition presents different art and arguments, and the Examiner committed material error.

- The petition's arguments rely on different combinations of art and different teachings than those previously presented to the Office.
- The Examiner was buried with over 600 prior art references.
- The Examiner materially erred by overlooking specific teachings in the prior art that teach the computer cluster recited in the '621 patent's claims.

E. The '621 patent is being used to seek an injunction against semiconductors used by the U.S. military and deemed "essential to the nation."

Patent Owner ***seeks an injunction*** against Intel's Xeon processors and Advanced Micro Devices, Inc.'s (AMD's) Instinct chips, threatening semiconductors widely used to secure U.S. national interests:

- The Executive Branch, via the Chief Technology Officer for the Department of Defense (DoD), has deemed Intel's microelectronics to be "***essential to the nation***."
- Highlighting the importance of Intel's chipmaking to U.S. national security, on August 22, 2025, the U.S. Government invested almost $9 billion in Intel. The U.S. Secretary of Commerce Howard Lutnick noted

that Intel has "the most advanced chips in the world" for "reinforcing our country's dominance in artificial intelligence while strengthening our national security."

- Intel's Xeon processors are used by:
    - Naval Air Stations for secure wireless communications to support the National Security Agency (NSA);
    - the Air Force Research Laboratory to model "advanced air, naval, and ground weapon systems;" and
    - U.S. Special Operations Command to power reconnaissance and armed aircraft.
- AMD's Instinct MI300A chips are the "heart" of Lawrence Livermore National Laboratory's supercomputer that is "***dedicated to national security***" and is "***essential for … critical nuclear security missions***."

F. Billions of dollars in economic activity and millions of high-paying jobs would be imperiled by Patent Owner's allegations.

Patent Owner ***seeks an injunction*** against Intel's Xeon processors and AMD's Instinct GPUs, which are critical to U.S. economic prosperity:

- Intel's Xeon processors are a significant majority of the processors used by the data center industry that annually ***generates millions of jobs*** (4.7 million in 2023) ***and billions of dollars*** of economic growth (over $725

billion contribution to GDP in 2023);

- AMD's Instinct GPUs are recognized by President Trump as "vital to helping America win the AI race." The artificial intelligence industry relies on AMD's chips:
    - Microsoft is deploying clusters of AMD's "flagship MI300X AI chips" to build AI models that underpin ChatGPT, Bing AI, and a suite of security and productivity applications.
    - Oracle announced plans to "offer zettascale AI clusters accelerated by the latest AMD Instinct processors" in order "to enable customers to build, train, and inference AI at scale."

II. Detailed Analysis

A. Patent Owner has no settled expectations for a young patent issued in 2023 that comes from a likely unpatentable patent family.

First, the '621 patent issued on Jan. 24, 2023, less than two years and four months before the filing of the Petition. Ex.1001, 1 (field 45); Paper 6, 1. The Director has found that "[e]arly challenges to patents" that "issued recently, in 2023," "weigh against discretionary denial." *Imperative Care, Inc. v. Inari Medical, Inc*., IPR2025-00289, Paper 9 (PTAB June 12, 2025).

Second, the '621 patent comes from a family of patents already determined to be likely unpatentable. US 8,082,289 ("'289 patent"), US 8,140,612 ("'612

patent"), and US 8,676,877 ("'877 patent") are three of the parent patents of the '621 patent. Ex.1001, 1-2 (field (63)). Each of these parent patents has already been found reasonably likely to be unpatentable. *See NVIDIA Corp. v. Advanced Cluster Systems, Inc*., IPR2020-01608, Paper 11 (PTAB May 13, 2021); IPR2021-00075, Paper 9 (PTAB May 5, 2021); and IPR2021-00108, Paper 9 (PTAB May 13, 2021) (all three instituted but settled post-institution).

A patent that issued less than three years ago cannot develop strong settled expectations that favor discretionary denial, especially when it is a child in a patent family of likely unpatentable patents.

B. <u>The Office erred in a manner material to the patentability of the challenged claims.</u>

Petitioners respectfully submit that the Examiner erred "in a manner material to the patentability of" the '621 patent claims because **the Examiner did <u>not</u> apply any prior art to reject claims or issue any Office Action during prosecution**. Ex.1002. That is, because there was no "substantive evaluation of [the prior art previously presented to the Office in an IDS] in an Office action during prosecution of the" '621 patent, and the petition has shown that "the challenged claims would have been obvious in view of" the prior art, "[t]he first-action allowance of [the '621 patent claims] is an error or oversight by the Patent Office." *Shenzen Chic Elecs. Co., Ltd. v. Pilot, Inc.*, IPR2023-00810, Paper 12, 21

(PTAB July 16, 2025) (internal citation omitted).

The prior art in the instant IPR includes specific teachings that impact patentability of the challenged claims. The '621 patent claims recite a computer cluster having three processors, at least one computer-readable medium, three kernels each residing in a computer-readable medium, and three cluster node modules each residing in a computer-readable medium and sending commands to their respective kernels, where the three cluster node modules transmit tasks to each other directly or without going through a master node.

However, years before the '621 patent, a research team at Cornell University published papers that teach a parallel computing system with at least three processors, where each processor has a MATLAB (*kernel*) and a set of components to provide interconnection (*cluster node module*) residing in an address space in memory (*computer-readable medium*) and performing the same operations recited in the limitations of the '621 patent claims, as discussed above:

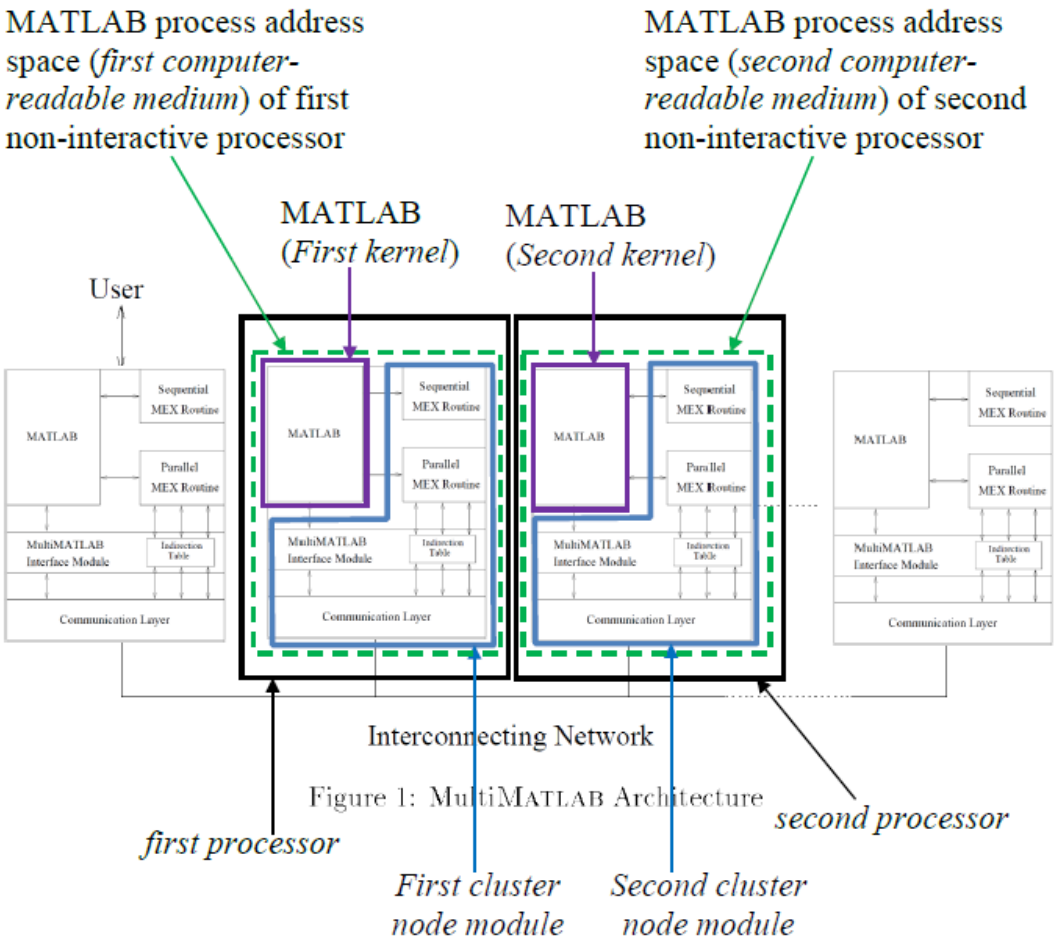

Figure 1: MultiMATLAB Architecture

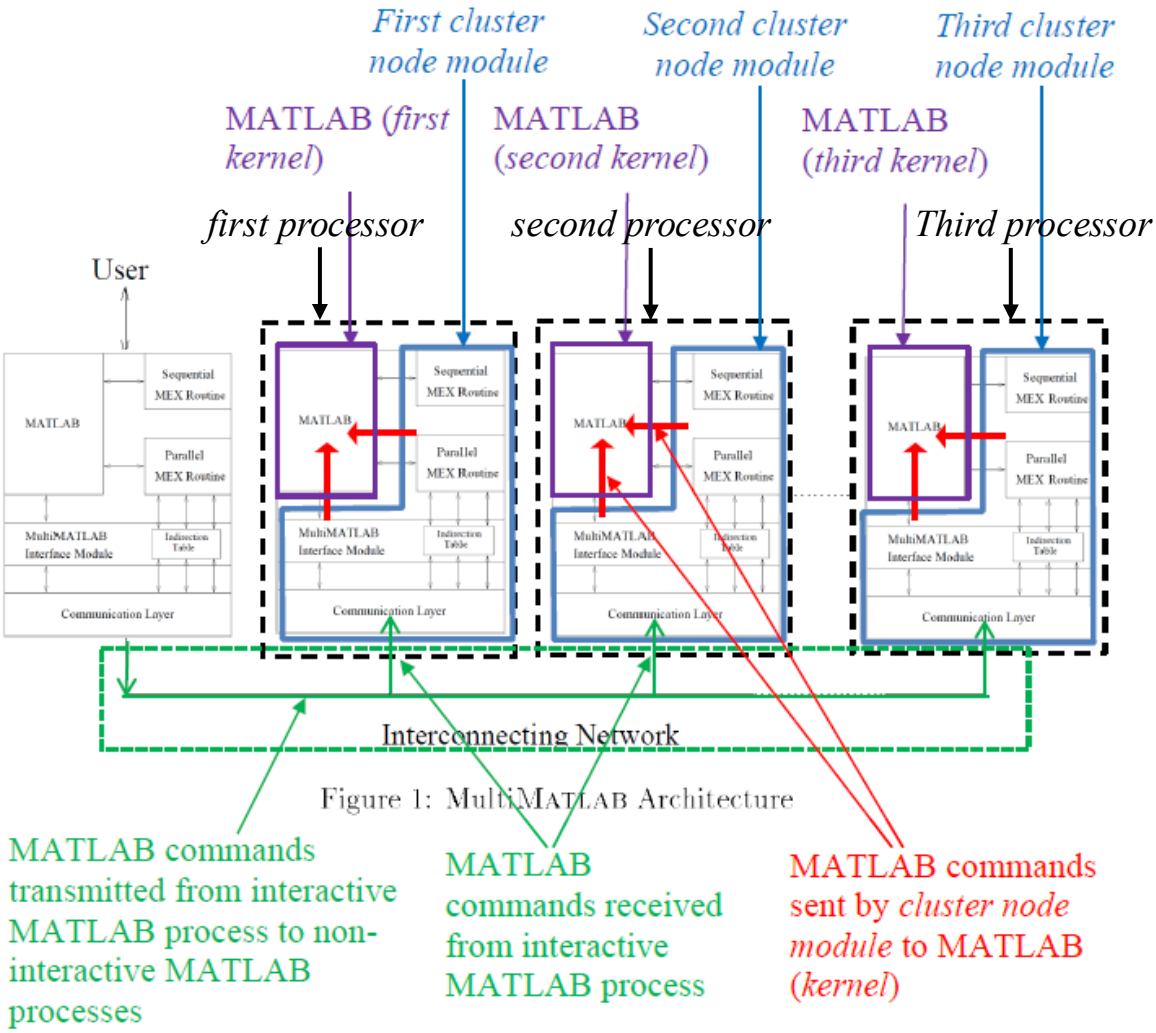

Figure 1: MultiMatlab Architecture

Ex.1005, FIGs. 1 and 2 (combined and annotated); *See also* Paper 3, 16-65, 72; Ex.1003, ¶¶59-64, 69-74, 111-120, 124-126, 169-281, 300; Ex.1005; Ex.1006.

Accordingly, the Cornell team's papers teach the computer cluster recited in the '621 patent claims. The papers, Ex.1005 (Menon) and Ex.1006 (Trefethen), were submitted to the Examiner. *See* Ex.1002, 232 (cite No. 83) (Menon), 234 (cite No. 116) (Trefethen). As noted above, the Examiner did not apply either Menon or Trefethen in any rejections (in fact, the Examiner issued no rejection applying any

prior art). Ex.1002.

Therefore, the Examiner overlooked the specific teachings of Menon and Trefethen, which were cited in an IDS, which would impact the patentability of the '621 patent claims. In short, "even though the asserted prior art is listed on an IDS, the Examiner did not issue any prior art rejections during examination, so the Examiner materially erred by overlooking certain teachings in the prior art on the IDS" that impact the patentability of the '621 patent claims. *Ecto World, LLC v. RAI Strategic Holdings, Inc.,* IPR2024-01280, Paper 13, 5-6 (PTAB May 19, 2025) (precedential). The Office's error "in a manner material to the patentability of the challenged claims with respect to previously presented prior art" weighs in favor of consideration of the Petition by a merits panel. *Amazon.com, Inc., v. Soundclear Technologies LLC*, IPR2025-00565, Paper 11, 2 (PTAB July 10, 2025).

C. 35 U.S.C. § 325(d) does not apply to this petition because *Advanced Bionics* part one is not satisfied, and also because *Advanced Bionics* part two is satisfied.

35 U.S.C. § 325(d) does not apply to this petition because i) the first part of the *Advanced Bionics* framework is not satisfied, and ii) even if the Director considers part two of the *Advanced Bionics* framework, the Office erred in a manner material to the patentability of the challenged claims.

The first prong of the *Advanced Bionics* framework asks "whether the same or substantially the same art previously was presented to the Office or whether the

same or substantially the same arguments previously were presented to the Office." *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469*, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential). The analysis of the first prong is informed by *Becton, Dickinson* factors (a), (b), and (d). *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, 17-18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph); *Advanced Bionics*, 10 (the first prong looks to "[*Becton, Dickinson*] factors (a), (b), and (d)" and whether "the same or substantially the same art or arguments previously were presented to the Office").

Here, the Examiner did not have RS6000 (Ex.1007) and POEref (Ex.1008), nor did the Examiner have the combination of Menon and Trefethen with RS6000 and MPIref (for Ground #1) and with POEref (for Ground #2). Ex.1001, 2-13 (field 56). Patent Owner does not dispute this. Paper 7, 38-45.

Instead, Patent Owner alleges that "[t]o the extent [] the Petition relies on particular details of the IBM SP2 system allegedly disclosed in the RS/6000 reference, those details pertain to a system that the Petition concedes is already disclosed in Menon." Paper 7, 41. This is untrue. The petition shows that RS6000 teaches more than Menon and is not cumulative of Menon. For example, RS6000 teaches nodes having:

- a "minimum of four [] processors," i.e., "four, eight, twelve, or sixteen

processors." (Paper 3, 29; Ex.1003, ¶¶176-177, 129);

- "[i]nternal … [or] [e]xternal" "disk drives or memory cards." (Paper 3, 32; Ex.1003, ¶¶157, 190-191, 129); and
- "switches that connect the processors." (Paper 3, 106; Ex.1003, ¶¶169, 172, 175).

Patent Owner does not identify any portion of the petition that allegedly concedes that Menon expressly teaches these above-listed teachings of RS6000.

Patent Owner's assertions that art cited in an IDS mention "RISC System/6000" or "IBM SP2" are meritless, at least because Patent Owner fails to show how these mentions are the same or substantially the same as RS6000's disclosure about the noted processor node. Paper 7, 36. Thus, RS6000 is not cumulative to Menon or other art cited in the '621 patent.

Regarding POEref, Patent Owner makes similar unsupported allegations that "[t]o the extent [] the Petition relies on particular details of the IBM POE allegedly disclosed in the POEref reference, those details pertain to an environment that the Petition concedes is already disclosed in Menon." *Id*., 42. Here again, this is untrue. The petition states that "POE[ref] describes that the user invokes the initialization process on a 'home node' and 'a number of remote nodes' using the 'poe' command to 'allocate[] processor nodes for each task and initialize[] the local environment.' POE then 'loads your program, and reproduces your local

environment, on each processor node.'" Paper 3, 109 (internal citation omitted), 107-108; *see also* Ex.1003, ¶¶132-133, 457-462. Menon does not expressly disclose the noted "poe" command or the initialization process started with the command as described herein, and Patent Owner does not identify any portion of the petition that allegedly concedes that Menon teaches the "poe" command or the initialization process. Thus, POEref is not cumulative to Menon or other art cited in the '621 patent.

The Examiner lists three references, US2005/0021751 ("Block"), US6074427 ("Fought"), and US8601101 ("Singh"), in the Reasons for Allowance in the Notice of Allowance. Ex.1002, 470-471. Block is directed to "cluster data port services [that] present an abstracted transport service" "in a clustered computer system." Ex.1082, Abstract. Fought is directed to "simulate a cluster of n nodes [in a single machine] by generating n user-level procedures." Ex.1083, Abstract. And Singh is directed to "each node in a cluster … compiling and maintaining its own cluster membership" so that a "joining node may add the name of the target node to its cluster membership list" and "a member node [that] grants a connection to a node [] may add the joining node to its cluster membership list." Ex.1064, Abstract. None has any disclosure related to the art or arguments presented in this petition: an IBM SP2 processor node having disk drives or memory cards, a 'poe' command that starts an initialization process, loads your

program, and reproduces your local environment on each processor node, and the parallel computing system disclosed by the Cornell research team's papers. As such, each reference is different from, and as such not cumulative to, Menon, Trefethen, RS6000 and POEref. *Advanced Bionics*, 9 n.10 (stating *Becton, Dickinson* factors (a) and (b)).

Further, when listing the three references in the Reasons for Allowance, the Examiner simply recited the abstracts of each reference without any explanation or arguments. Ex.1002, 470-471; Ex.1082, Abstract; Ex.1083, Abstract; Ex.1064, Abstract. None of the abstracts discusses the afore-mentioned disclosures of Menon, Trefethen, RS6000 and POEref (or the disclosures of MPIref, which provide "all the technical features" of the "MPI: A Message-Passing Interface Standard." (Paper 3, 21-22; Ex.1003, ¶¶96, 165). As such, there is no "overlap between the arguments made during examination and the manner in which petitioner relies on the prior art." *Advanced Bionics*, 9 n.10 (stating *Becton, Dickinson* factor (d)).

Accordingly, part one of the *Advanced Bionics* framework is not satisfied for Petitioners' Ground #1, which relies on a combination including RS6000, and Ground #2, which relies on a combination including RS6000 and POEref. Paper 3, 13. Accordingly, the Director can end her analysis here and decline to exercise her discretion under § 325(d).

Should the Director consider the second prong of *Advanced Bionics*, the Office erred "in a manner material to the patentability of the challenged claims[,]" and thus the Director should not exercise her discretion under § 325(d). *Advanced Bionics*, 8. The analysis of the second prong is informed by *Becton, Dickinson* factors (c), (e), and (f). *Becton, Dickinson*, 17-18. If "the asserted prior art was not a basis for rejection during examination, is not substantially the same as prior art the Examiner applied, and includes specific teachings that 'impact patentability of the challenged claims'," then it is clear that the Examiner committed material error. *Ecto World*, 5 (citing *Advanced Bionics*, 8 n.9).

First, RS6000 and POEref were not in front of the Examiner during examination, and Menon, Trefethen, RS6000, MPIref, and POEref were not the basis of any rejection. Ex.1002. Nor are they the same as art applied by the Examiner because the Examiner did not apply ***any*** prior art to the '621 patent claims. *Id*.

Second, as discussed above in Section II.B, Menon and Trefethen disclose the computer cluster recited in the '621 patent claims. The three references that the Examiner lists in the Reasons for Allowance in the Notice of Allowance do not teach or otherwise suggest these disclosures of Menon and Trefethen (as discussed in Section II.B). Ex.1002, 470-471. Thus, the Examiner overlooked the specific teachings of Menon and Trefethen that would impact the patentability of the '621

patent claims.

Further, although Menon, Trefethen, and MPIref were cited in an IDS, they were three out of a total of over 600 cited references. Menon and Trefethen were cited in the fifth (out of seven IDS'es) that Patent Owner filed after the Examiner had already issued three Notices of Allowance. In addition, Patent Owner cited Menon, Trefethen, and MPIref without "any applicant information or assistance regarding the relevance of [the] references," despite "the [large] volume of the references submitted to the Office during examination." *Ecto World*, 6-7. These facts "demonstrate that discretionary denial under § 325(d) is not warranted" on a basis separate from the Office erring in a manner material to the patentability of the '621 patent claims. *Id*. (explaining that a petitioner can "demonstrate that discretionary denial under § 325(d) is not warranted" "based on the volume of the references submitted to the Office during examination and any applicant information or assistance regarding the relevance of references," "even if a petitioner fails to make a persuasive argument that the Examiner erred by overlooking particular teachings in the prior art provided on an IDS").

Accordingly, discretionary denial under § 325(d) is not warranted.

D. The '621 patent is being used to seek an injunction against semiconductors used by the U.S. military and deemed "essential to the nation."

Patent Owner is using the overly broad claims of the '621 patent to **seek an**

injunction against and increase the costs of Intel's Xeon processors and AMD's Instinct chips/GPUs. Patent Owner's actions would (i) impact semiconductors deemed "essential to the nation" by the Executive Branch (DoD) and used "to sustain our stockpile without returning to explosive nuclear testing" (according to the DoE), implicating significant economic and national security interests and (ii) hamper the growth and development of AI that "will bolster our national security, create new jobs, and stimulate economic growth." Ex.1054, 2; Ex.1055, 2; Ex.1057, 1.

An injunction against Intel's Xeon processors and AMD's Instinct MI chips would have wide-ranging impact on U.S. national security. Xeon processors are used by the Naval Air Stations for secure wireless communications to support the NSA (Ex.1058), the Air Force Research Laboratory to model "hypersonics and … advanced air, naval, and ground weapon systems" (Ex.1059, 2), U.S. Special Operations Command to power reconnaissance and armed aircrafts "built to operate in more austere, challenging combat environments" (Ex.1060, 4), and the DoE's Argonne National Laboratory to "empower previously unattainable research and engineering endeavors" (Ex.1061, 1). Recognizing Intel's singular importance to U.S. domestic chip manufacturing needs, the U.S. Government recently made an almost $9 billion investment in Intel. Ex.1071. U.S. Secretary of Commerce Howard Lutnick noted that Intel has "the most advanced chips in the world" for

"reinforcing our country's dominance in artificial intelligence while strengthening our national security." *Id*., 1. Industry leaders have also recognized the critical role Intel and its semiconductors play in safeguarding U.S. national security. *Id*.[1]

AMD's Instinct MI300A chips "are truly the heart of" supercomputers "dedicated to national security" and used "to advance nuclear weapon science[,] … to ensure the safety, security and reliability of the nation's nuclear deterrent without nuclear testing … [and to] enable[e] unprecedented modeling and simulation capability essential for NNSA's Stockpile Stewardship Program that certifies the U.S. nuclear stockpile, and other critical nuclear security missions such as nonproliferation and counterterrorism." Ex.1055, 6, 2. In short, Patent

[1] Ex.1071, 2-3 (AWS CEO: "Intel plays a vital role as one of the country's leading chip manufacturers" and "U.S. investment in this critical industry [is] one of the most important technological, economic and national security imperatives of our time"; Microsoft CEO: "Intel's continued investment in strengthening the U.S. semiconductor supply chain … will benefit the country and broader technology ecosystem for years to come"; Dell Technologies CEO: "[N]o company is more important to [creating a strong and resilient U.S. semiconductor industry] than Intel"; HP CEO: "Intel's continued investment in domestic R&D and manufacturing is integral to future innovation.").

Owner's assertion of this patent implicates and threatens semiconductors that the Executive Branch has already deemed are "essential to the nation," and also are essential to its "nuclear stockpile" and "other critical nuclear security missions." Ex.1054, 2; Ex.1055, 2. Overlooking this national security interest would place the PTO at odds with other Executive Branch agencies.

Patent Owner's arguments about the U.S. being shielded from liability under 28 U.S.C. § 1498 and "[n]ational security … not [being] impacted by venue" because Petitioners have access to district court both miss the point. Paper 7, 48. The question again is whether the '621 patent implicates national security sufficiently to justify the resources of the Office. Here, the '621 patent is being used to seek an injunction against semiconductors used by the NSA, Air Force, U.S. Special Operations Command, DoE, and DoD and that are "essential to the nation." Patent Owner is wielding the over-broad claims of the '621 patent to cast a pall on these national security interests. Under Patent Owner's theory, the Director's national security factor should be treated as moot and have no bearing on discretionary denial. Petitioners respectfully submit that the Director's national security factor is relevant and should be considered, and a review of the '621 patent is worth the resources of the Office.

E. Billions of dollars in economic activity and millions of high-paying jobs would be imperiled by Patent Owner's allegations.

Patent Owner's actions would significantly cripple the data server market in the U.S., affecting millions of jobs and billions of dollars in economic activity and workers' income. Ex.1056, 5, 28. The impact to the United States economy of data centers and the Intel processors that power them "is widespread with significant contributions to employment, labor income, and value added across all states." Ex.1056, 28. Intel's Xeon processors alone represent over 76% of the x86 server processors used in data center servers, which accounts for nearly 88% of the overall data center server market in the United States. Ex.1062, 1; Ex.1063, 2. The economic benefits to the United States are massive—the data center industry has contributed over $400 billion to workers' income, over $725 billion to GDP, and 4.7 million in total "higher earning" jobs, all in 2023 alone. Ex.1056, 5, 28. "California, Texas, Florida, New York, Georgia, Illinois, Washington, Pennsylvania, Virginia and New Jersey have emerged as leading beneficiaries." Ex.1056, 28.

AMD's processors and graphics cards are vital to the domestic "AI chip market" and—in President Trump's words—"vital to helping America win the AI race."[2] AMD's products power "modern data centers" that are shouldering "the

[2] *See, e.g.*, Ex.1078, 2; Ex.1052, 2; *see also* Ex.1079, 1 (industry observer commenting that "AMD is strengthening its footprint in the artificial intelligence

increasing demands of AI workloads" that fuel broad swaths of the domestic economy. Ex.1079, 1. Other industry leaders rely on AMD's chips. Microsoft, for example, publicly confirmed its Azure cloud computing service would deploy clusters of AMD's "flagship MI300X AI chips" to build AI models that underpin ChatGPT, Bing AI, and a suite of security and productivity applications. Ex.1053, 2. Oracle announced plans to "offer zettascale AI clusters accelerated by the latest AMD Instinct processors" in order "to enable customers to build, train, and inference AI at scale," citing AMD's hardware as critical to "customers that are running the most demanding AI workloads in the cloud." Ex.1077, 1-2.

Other hyperscale customers such as Meta Platforms embraced AMD as the preferred and "prime second source to Nvidia" for AI chips, thereby ensuring competitive pricing and supply resiliency in the domestic AI chip market. Ex.1081,

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(AI) market through an expanding portfolio tailored for data center applications. The latest MI300 series accelerator family strengthens its competitive position in the generative AI space, catering to the increasing demands of AI workloads in modern data centers."); Ex.1080, 4 (Sen. Ted Cruz acknowledging that "AMD develops high performance processors, graphic chips and AI accelerators that power artificial intelligence"); Ex.1052, 2 (President Trump recognizing AMD as "vital to helping America win the AI race").

1; *see also* Ex.1070, 1-2 ("AI infrastructure company TensorWave has revealed the deployment of a massive 8,192-GPU cluster powered by AMD's latest Instinct MI325X accelerators, claiming to be the largest AMD-based AI training installation in North America to date.").

In short, Patent Owner's infringement allegations **implicate and threaten billions of dollars in economic activity, workers' income, and millions of high-paying jobs**.

Accordingly, it is important to the economic and national security interests of the United States, and an appropriate use of Patent Office resources, for this petition to be considered by a merits panel, particularly given the questionable validity of the '621 patent's family.

F. Discretionary denial under *Fintiv* is not warranted.

1. Factor 1 is neutral: No evidence regarding a stay.

No motion to stay has been filed, so the Board should not infer the outcome of such a motion. *Sand Revolution II,* LLC *v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24, 7 (PTAB June 16, 2020) (informative). This factor is thus neutral. Patent Owner's arguments are unfounded, as the Board has made it clear it "will not attempt to predict how the district court … will proceed" or give weight to speculations about "how the District Court would rule should a stay be requested by the parties." Paper 7, 3-4; *Sand Revolution*, 7; *Apple*

Inc. v. Fintiv, Inc., IPR2020-00019, Paper 15, 12 (PTAB May 13, 2020) (informative)).

2. Factor 2 weighs against denial: The Final Written Decision would issue before the parallel litigations' trial date.

Factor 2 weighs against denial. Although Patent Owner sued AMD and Intel in separate cases (as it must), trial in ***both*** cases is currently set for November 16, 2026 (Ex.1020, 6; Ex.1044, 3), which would occur around the same time as a FWD (November 27, 2026). Under *Fintiv*, "[i]f the court's trial date is at or around the same time as the projected statutory deadline…, the decision whether to institute will likely implicate other factors." *Apple Inc. v. Fintiv, Inc*., IPR2020-00019, Paper 11, 9 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). Here, factors 3, 4, and 6 weigh against denial (while factors 1 and 5 are neutral), as discussed in this section. Accordingly, in combination with Petitioner's *Sotera* stipulation, factor 2 weighs against denial.

Moreover, it is nearly certain that the eventual trial date in both cases will be pushed far beyond the FWD deadline. The scheduled trial date of November 16, 2026, is inconsistent with the median time-to-trial in WDTX of 33.9 months (which puts trial in July of 2027). *See* Ex.1021, 37. Patent Owner asserts that the historical median time-to-trial for Judge Albright, who is overseeing the parallel litigations, is 25.9 months, and as such the trial date will likely take place in late

November 2026. Paper 7, 5.

But Patent Owner ignores the impact of Chief Judge Moses' order that, going forward from January 2025, Judge Albright is taking on ***40%*** of the docket in the Austin division. Ex.1065, 3. In the about seven months since Chief Judge Moses's order, the Austin division has transferred over 400 cases to Judge Albright, including 80 patent cases. *See* Ex.1066 (LexMachina report); Ex.1067 (LexMachina report). The result has been that the judge is handling more cases (600) by the end of July 2025 than he did in total in either of the two previous years (529 and 571). Ex.1068, 1. The volume and timing of the new cases assigned to the judge strongly indicates that the scheduled trial date will move more in line with the WDTX median time-to-trial statistics (33.9 months), rather than the outdated 25.9 months cited by Patent Owner, **pushing the trial date for the parallel litigations far beyond the Final Written Decision in this IPR** and weighing against discretionary denial.

Patent Owner asserts that the district court schedules remain on track, pointing to the district court's statement regarding its general unwillingness to move trial dates. Paper 7, 4-7. But, this statement was made in a standing order from January 2024 (*see* Ex.2002, 12), before Chief Judge Moses's order from January 2025. As explained above, given the increased case load, it is highly unlikely the November 16, 2026, trial date will stick in either the AMD or Intel

cases (and it certainly cannot stick in both cases).

The facts bear this out. Beyond the trial against Intel (Ex.1020, 6), there are **ten other trials set before Judge Albright on Nov. 16, 2026** (Ex.1069), indicating that the trial dates are not firm and will almost certainly change (and be pushed far beyond the FWD deadline, as discussed above). Indeed, the problem of 11 trials scheduled to start on November 16, 2026, is exacerbated by an additional *four* trials scheduled to start the week prior (the week of November 9, 2026). *See* Ex.1072. Accordingly, for the two-week period of November 9-20, 2026, Judge Albright has ***15 trials*** scheduled. And then the next week (starting November 23, 2026), is the Thanksgiving holiday week. These facts all but ensure that at least one, and more likely both, of the AMD and Intel trials will occur long after the November 27, 2026, FWD deadline in this IPR. This factor therefore weighs against discretionary denial.

3. Factor 3 weighs against denial: Minimal relevant investment and expeditious filing.

Factor 3 weighs against denial because, at institution, investment by the court and parties will have been relatively minimal as to the activities pertinent to *Fintiv*. Patent Owner's Request for Discretionary Denial includes a laundry list of activities allegedly showing substantial investment, but very few relate to invalidity of the '621 patent. *See* Paper 7, 7-9. Under *Fintiv*, "[i]f, at the time of the

institution decision, the district court has not issued ***orders related to the patent at issue in the petition***, this fact weighs against exercising discretion to deny institution." *Fintiv*, 10 (emphasis added).

The only one of the multiple activities listed by Patent Owner that relates to an order regarding the '621 patent is the claim construction order. Paper 7, 7-9. But, *Sotera* explains that, even after *Markman* is complete, "much other work remains in the parallel proceeding as it relates to invalidity," including "fact discovery," "expert reports," and "substantive motion practice." *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 16 (PTAB Dec. 1, 2020) (precedential as to § II.A). Here, each of these will take place at least *five months* after the institution decision. Ex.1020, 3-4. Patent Owner's reliance on *Motorola Sols.* (IPR2024-01205, Paper 19 (PTAB Mar. 28, 2025)) is defective at least because "opening and rebuttal expert reports" are yet to be served and "several depositions" are yet to be conducted, in contrast to *Motorola Sols.* where all of those have occurred "by the time Patent Owner filed its Preliminary Response." Paper 7, 11; *Motorola Sols.*, 3. Accordingly, this factor weighs against denial.

4. <u>Factor 4 weighs against denial: IPR is "true alternative" to parallel litigations.</u>

Patent Owner's assertions regarding factor 4 are meritless. Paper 7, 11-21. First, Petitioners have filed *Sotera* stipulations in district court prior to filing the

IPR. *See* Ex.1042; Ex.1046. Petitioners' *Sotera* stipulations render the IPR a "true alternative" to the parallel litigations because the stipulations disclaim "grounds that were raised or reasonably could have been raised during the IPR (i.e., any ground that could have been raised under 35 U.S.C. §§ 102 or 103 on the basis of prior art patents or printed publications)." *Id*. These "grounds are the theories of invalidity available to challenge a claim under 35 U.S.C. §§ 102 and 103, which are limited in an IPR to asserting that the claimed invention was patented or described in a printed publication (or would have been obvious only on the basis of prior art patents or printed publications)." *Ingenico Inc. v. IOENGINE, LLC*, 136 F.4th 1354, 1366 (Fed. Cir. 2025).

Second, the petition challenges claims 1-30 of the '621 patent, but only claims 1, 3, 4, 6-11, 13, 15-17, and 20-30 and claims 1, 3, 4, 6-9, 11, 13, 15-17, 21, 23, 24, and 26-30 are currently asserted against Intel and AMD, respectively. Paper 3, 13; Ex.1022, 2; Ex.1045, 2. Petitioners' invalidity contentions in the parallel litigations are limited to only the asserted claims. *See* Ex.2013, 4; Ex.2015, 4. These challenged (but unasserted) claims mean that issues in the petition will not be resolved by the district court, further reducing the degree of overlap under factor 4. *See Fintiv*, 13. Accordingly, factor 4 weighs against denial.

5. <u>Factor 5 is neutral: Petitioners are defendants in the parallel litigations.</u>

Petitioners are defendants in the parallel litigations. That is true of most IPR petitioners, making this factor neutral. *See HP Inc. v. Slingshot Printing LLC*, IPR2020-01084, Paper 13, 9 (PTAB Jan. 14, 2021); *see also NVIDIA Corp. v. Invensas Corp*., IPR2020-00603, Paper 11, 23 (PTAB Sept. 3, 2020) (this factor weighs against discretionary denial where the district court trial and IPR Final Written Decision are expected "around the same time").

6. Factor 6 weighs against denial: The merits of the petition remain strong because Patent Owner's arguments are deficient on their face.

Factor 6 weighs against denial because the petition plainly shows that the '621 patent claims no more than well-known subject matter. As shown in Section II.B above, a Cornell research team published papers teaching the computer cluster recited in the claims of the '621 patent, i.e., a parallel computing system with at least three processors, where each processor has a MATLAB (*kernel*) and a set of components to provide interconnection (*cluster node module*) residing in an address space in memory (*computer-readable medium*) and performing the same operations recited in the limitations of the '621 patent claims, as well as the relied-upon prior art references include express teachings suggesting their combination. Paper 3, 16-65, 72; Ex.1003, ¶¶59-64, 69-107, 111-120, 124-126, 169-281, 300. **Reflecting the strength of the merits of the Petition, Patent Owner does not address any of Petitioners' technical arguments, including the Cornell**

research team's solution that teaches the computer cluster of the '621 patent. Rather, Patent Owner's arguments are focused solely on whether the prior art references qualify as printed publications. *See* Paper 8, 22-38.

Patent Owner alleges that Petitioners failed to show Exhibits 1006, 1007, 1008, and 1017 were publicly accessible before the claimed priority date of the '621 patent. Paper 7, 22-38. Patent Owner's allegations are meritless. Petitioners have shown in detail that each of these references was distributed and made publicly available and that a diligent POSITA would have located them, qualifying each as a printed publication. Paper 3, 13-15; *see also* Ex.1003, ¶¶127-128, 130-131, 134-136, 140-142.

For example, regarding Ex.1007 and Ex.1008, Patent Owner alleges that "the Petition provides no evidence of library indexing or cataloging," despite the Petition having showed that both Ex.1007 and Ex.1008 were "catalogued and indexed in IBM's online document library" earlier than the priority date of the '621 patent. Paper 7, 24; Paper 3, 14-15; *see also* Ex.1003, ¶¶130, 134. Further, regarding Exhibits 1007, 1008, and 1017, Patent Owner alleges that "[t]he Petition also fails to demonstrate that" "Exhibits 1007 and 1008" as well as "Exhibit 1017 [were] publicly accessible by practical searchability." Paper 7, 25, 29. This is unfounded. "[A] printed publication need not be easily searchable after publication if it was sufficiently disseminated at the time of its publication." *Suffolk Techs.*,

LLC v. AOL Inc., 752 F.3d 1358, 1365 (Fed. Cir. 2014). As shown above, Ex.1007 and Ex.1008 were catalogued and indexed in IBM's online document library, and "[w]hen a reference is uploaded to a website or deposited in a library, the fact that the reference is indexed or cataloged in some way can indicate that it is publicly accessible." *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369 (Fed. Cir. 2019). In addition, statements in Ex.1017 indicate public dissemination of the document–that the document was "intended for [wide] use by all," and as such was "distribut[ed] and "made … available" publicly, therefore qualifying it as a printed publication. Ex.1017, ii, 2, vi; Paper 3, 15; Ex.1003, ¶¶140-142. Patent Owner also errs by failing to recognize that Menon's references to the IBM SP2, IBM RS6000 and IBM's Parallel Operating Environment also indicate public availability of the corresponding documentation. Ex.1005, 5, 6.

Regarding Ex.1006, Patent Owner alleges that "there is no evidence that Exhibit 1006 was reachable" from the webpage hosting Ex.1006. Paper 7, 34. This is not true as Ex.1023 shows that Ex.1006, corresponding to pages 24-39 of Ex.1023, was located at the webpage, and that Ex.1006 was publicly available. Ex.1023, 24-39; Paper 3, 14; Ex.1003, ¶¶127-128. Further, Petitioners showed that Ex.1005 was publicly available (Patent Owner does not dispute this), and a diligent POSITA would have located Ex.1005, and then would have accessed Ex.1006 from the webpage. Paper 3, 13-14, 23-24; Ex.1003, ¶¶150-151, 121-123, 127-128.

For example, Menon also included a reference to, and URL link of, Ex.1006, showing that a POSITA could have found Ex.1006. Ex.1005, 16; Paper 3, 13-14, 23; Ex.1003, ¶127.

III. Discretionary denial under *General Plastic* is not warranted.

The '621 patent has not been challenged in any prior IPR petition, so none of *General Plastic* discretionary institution factors apply to this Petition. *See General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 16 (PTAB Sept. 6, 2016) (Section II.B.4.i. precedential). Importantly, Patent Owner also agrees that *General Plastic* "does not apply to the circumstances of the present Petition." Paper 7, 45. Accordingly, Petitioners submit that discretionary denial under *General Plastic* is not warranted.

IV. The petition properly relies on evidence-supported expert testimony in accordance with Federal Circuit precedent.

Because attorney argument is not evidence, expert testimony is ***a requirement*** to properly support claim construction and obviousness positions in an IPR petition evaluated from the perspective of a POSITA. Here, Petitioner's expert provides that perspective with testimony supported by dozens of tertiary references in accordance with 37 CFR § 42.65 and *Xerox Corp. v. Bytemark, Inc*., IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential). Paper 3, 9-10, 12-71; Ex.1003, ¶4. The unpatentability grounds set forth in the Petition are fully

supported by the references themselves—Dr. Bajaj's testimony serves to confirm, support, and explain the disclosures of the references from the perspective of a POSITA. Accordingly, the Petition's proper reliance on evidence-backed expert testimony to support the unpatentability grounds weighs against denial.

V. The new Interim Procedure should not govern the decision to institute.

The various guidance in the Feb. 28, 2025 Recission webpage (Ex.1084), the Mar. 24, 2025 Memo (Ex.1073), the Mar. 26, 2025 Memo (Ex.1075), the PTO webcasts, the "FAQs for Interim Processes for PTAB Workload Management" (Ex.1074), and the "Interim Director Discretionary Process" (Ex.1076) should not govern here.[3]

First, the *Fintiv* and settled-expectations considerations have no basis in the AIA. Petitioners request that the PTO limit its institution analysis solely to the criteria permitted by Congress, including the merits under §314(a), statutory bars not applicable here, and considerations in §§ 315(d) and 325(d).

Second, collective guidance should have been issued via notice-and-comment rulemaking—especially given that the agency assured stakeholders that notice-and-comment rulemaking would be used for institution guidance going

[3] Petitioners nonetheless address this guidance above because of the PTO's current reliance on this guidance.

forward. *See* 5 U.S.C. 553; 35 U.S.C. 316(a)(2),(4); *Changes Under Consideration to Disc. Inst. Practices*, 88 Fed. Reg. 24,503, 24,505 (Apr. 21, 2023). In particular, changing the dispositive effect of a *Sotera* stipulation required notice-and-comment rulemaking, along with a contemporaneous explanation for the change that accounted for reliance interests. *See FDA v. Wages & White Lion Invs.*, 145 S. Ct. 898, 906 (2025); *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009).

Third, applying this guidance to this petition violates due process and the APA as impermissibly retroactive. *See Princess Cruises, Inc. v. U.S.*, 397 F.3d 1358, 1362-64 (Fed. Cir. 2005). Petitioners based their past conduct, e.g., litigation strategy and petition timing, on that guidance—including the effect of a *Sotera* stipulation. The agency had voluntarily restricted its own discretion (to the extent it has such discretion), and Petitioners were entitled to rely on that restriction. Thus, at a minimum, the PTO should apply the institution standards in place when Petitioners were served with an infringement complaint (the June 2022 Interim Proc. for Disc. Denials).

Fourth, if the PTO now expects Petitioners to surrender even *more* defenses to access an IPR (more than in *Sotera*), that further encroaches on Congress's authority and places an unconstitutional condition on Petitioners' access to IPRs.

VI. Conclusion

For the above reasons, Petitioners respectfully request that the Director refer

this petition to a merits panel.

Respectfully submitted,

Date: August 27, 2025

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PETITIONER'S EXHIBIT LIST

Ex.1001	U.S. Patent No. 11,563,621
Ex.1002	Prosecution History of U.S. Patent No. 11,563,621
Ex.1003	Declaration of Dr. Chandrajit L. Bajaj under 37 C.F.R. § 1.68
Ex.1004	*Curriculum Vitae* of Dr. Chandrajit L. Bajaj
Ex.1005	"MultiMATLAB: Integrating MATLAB with High-Performance Parallel Computing," Menon et al., SC '97: Proceedings of the 1997 ACM/IEEE Conference on Supercomputing 1997
Ex.1006	"MultiMATLAB: MATLAB on Multiple Processors," Trefethen et al., 1996 Computer Science Technical Report, Cornell University 1996
Ex.1007	"RS/6000 SP: Planning Vol. 1, Hardware and Physical Environment," IBM 2001
Ex.1008	"Operation and Use, Volume 1, Using the Parallel Operating Environment," IBM 2001
Ex.1009	"Single program multiple data" in Dictionary of Algorithms and Data Structures, P. E. Black, (accessible at https://www.nist.gov/dads/HTML/singleprogrm.html) December 2004
Ex.1010	The RS/6000 SP Inside Out" to Barrios et al., IBM 1999
Ex.1011	"High Performance Cluster Computing: Programming and Applications," Rajkumar Buyya, Vol. 2, 1999
Ex.1012	"Analysis of 100Mb/s Ethernet for the Whitney Commodity Computing Testbed," Fineberg et al., NAS Technical Report NAS-97-025 1997
Ex.1013	"A Parallel Linear Algebra Server for Matlab-like Environments," G. Morrow et al., SC '98: Proceedings of the 1998 ACM/IEEE Conference on Supercomputing 1998

Ex.1014	"Parallel MATLAB: Doing It Right," R. Choy et al., Proceedings of the IEEE, Vol. 93, No. 2, 2005
Ex.1015	"Mathematica Parallel Computing Toolkit - Unleash the Power of Parallel Computing," R. Maeder, 2005
Ex.1016	"Mastering MATLAB® 5 – A Comprehensive Tutorial and Reference," D. Hanselman et al., 1998
Ex.1017	"MPI: A Message-Passing Interface Standard," Message Passing Interface Forum, 1994
Ex.1018	"Modern Operating Systems," A.S. Tanenbaum, 2001
Ex.1019	September 26, 2024 Complaint against Intel in Western District of Texas
Ex.1020	Order Granting Joint Motion for Entry of Amended Scheduling Order for *Advanced Cluster Systems, Inc. v. Intel Corporation*, 7:24-CV-00245 (W.D.TX.)
Ex.1021	Federal Court Statistics
Ex.1022	Advanced Cluster Systems, Inc.'s Preliminary Infringement Contentions, January 22, 2025, *Advanced Cluster Systems, Inc. v. Intel Corporation*, 7:24-cv-00245 (WDTX)
Ex.1023	Cornell Websites
Ex.1024	"pyMPI–An introduction to parallel Python using MPI," P. Miller 2002
Ex.1025	Amended Joint Claim Construction Chart for *Advanced Cluster Systems, Inc. v. NVIDIA Corporation*, 1:19-cv-02032 (DDE)
Ex.1026	SC97: High Performance Networking and Computing Conference Website
Ex.1027	Declaration of IEEE
Ex.1028	ACM Digital Library - Citations to Menon

Ex.1029	Affidavit of Archive.org
Ex.1030	HPC Wire Article about the SC97 High Performance Computing Conference
Ex.1031	Flyer about the SC97 High Performance Computing Conference
Ex.1032	IEEE Xplore Website
Ex.1033	Article about Cornell Theory Center
Ex.1034	ACM Digital Library
Ex.1035	ACM Digital Library - Citations to Trefethen
Ex.1036	A Beginner's Guide to the IBM SP
Ex.1037	ACM Digital Library - Citations to MPIref
Ex.1038	IBM Website for RS6000
Ex.1039	IBM Website for POE
Ex.1040	ACS Preliminary Response, IPR2021-00019
Ex.1041	Decision Denying Institution, IPR2021-00019
Ex.1042	Sotera Stipulation, *Advanced Cluster Systems, Inc. v. Intel Corporation*, 7:24-cv-00245 (WDTX)
Ex.1043	September 26, 2024 Complaint against AMD in Western District of Texas
Ex.1044	Scheduling Order for *Advanced Cluster Systems, Inc. v. Advanced Micro Devices, Inc.*, 7:24-CV-00244 (W.D.TX.)
Ex.1045	Advanced Cluster Systems, Inc.'s Preliminary Infringement Contentions, February 24, 2025, *Advanced Cluster Systems, Inc. v. Advanced Micro Devices, Inc.*, 7:24-cv-00244 (WDTX)
Ex.1046	Sotera Stipulation, *Advanced Cluster Systems, Inc. v. Advanced Micro Devices, Inc.*, 7:24-cv-00244 (WDTX)

Ex.1047	Declaration of International Business Machines Corp.
Ex.1048	Affidavit of Tanya Zeif, Internet Archive
Ex.1049	MPIref at Argonne National Laboratory
Ex.1050	U.S. Patent No. 7,568,115
Ex.1051	U.S. Patent No. 8,924,690
Ex.1052 (New)	"Nvidia, AMD CEOs Rally Behind President Trump's AI 'Action Plan'," B. Lin, Wall Street Journal, July 24, 2025.
Ex.1053 (New)	"Microsoft offers cloud customers AMD alternative to Nvidia AI processors," M. Cherney, Reuters, May 17, 2024.
Ex.1054 (New)	"What milestone advancements in computer chips mean for the military," Breaking Defense
Ex.1055 (New)	"Lawrence Livermore National Laboratory's El Capitan verified as world's fastest supercomputer," LLNL
Ex.1056 (New)	"Economic Contributions of Data Centers in the United States, 2017-2023," PWC, Feb. 2025
Ex.1057 (New)	Senate hearing on "Winning the AI Race: Strengthening U.S. Capabilities in Computing and Innovation," May 8, 2025
Ex.1058 (New)	"DoD Extends Contract for ORAN-based Private 5G Networks through 2025," Echostar, March 18, 2024
Ex.1059 (New)	"HPE selected to deliver supercomputers for DoD computing modernization program," M. Iriarte, Military Embedded Systems, February 20, 2018
Ex.1060 (New)	"ZMicro to Provide Rugged Computers for US Sky Warden Aircraft," R. Manuel, The Defense Post, Oct. 6, 2022
Ex.1061 (New)	"Argonne National Laboratory's Aurora 2+ ExaFLOPS System Will Enable New Science and Engineering," Intel
Ex.1062 (New)	"Intel battles AMD with new data center chips," Cherney et al, Reuters, June 4, 2024

Ex.1063 (New)	"X86 vs. ARM: A Deep Device into the Architecture," Semicon Electronics, October 28, 2024
Ex.1064 (New)	U.S. Patent No. 8,601,101
Ex.1065 (New)	Amended Order Assigning the Business of the Court (Judge Moses, Jan. 31, 2025)
Ex.1066 (New)	LexMachina docket report
Ex.1067 (New)	LexMachina docket report
Ex.1068 (New)	LexMachina docket report
Ex.1069 (New)	LexMachina docket report
Ex.1070 (New)	"TensorWave just deployed the largest AMD GPU training cluster in North America — features 8,192 MI325X AI accelerators tamed by direct liquid-cooling," Tom's Hardware, July 14, 2025
Ex.1071 (New)	"Intel and Trump Administration Reach Historic Agreement to Accelerate American Technology and Manufacturing Leadership," Aug. 22, 2025
Ex.1072 (New)	LexMachina docket report
Ex.1073 (New)	March 24, 2025 Memorandum titled "Guidance on USPTO's recission of 'Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation'" (Chief Administrative Patent Judge Boalick)
Ex.1074 (New)	"FAQs for Interim Processes for PTAB Workload Management" (USPTO)
Ex.1075 (New)	March 26, 2025 Memorandum titled "Interim Processes for PTAB Workload Management" (Acting Director Stewart)

Ex.1076 (New)	Aug. 13, 2025 Memo "Interim Director Discretionary Process" (USPTO)
Ex.1077 (New)	"Oracle and AMD Collaborate to Help Customers Deliver Breakthrough Performance for Large-Scale AI and Agentic Workloads," Oracle, June 12, 2025.
Ex.1078 (New)	"How AMD is Intensifying AI Chip Focus Amid Global Tech Race," Technology Magazine, Nov. 17, 2024.
Ex.1079 (New)	"AMD's AI Chips Gain Ground in Data Centers: A Sign for More Upside?," Zacks Equity Research, July 16, 2025.
Ex.1080 (New)	"Transcript: Sam Altman Testifies At US Senate Hearing On AI Competitiveness," TechPolicy.Press, May 8, 2025.
Ex.1081 (New)	"Meta's Obsession With AI Is Great News For AMD," Seeking Alpha, July 9, 2025.
Ex.1082 (New)	U.S. Patent Publication No. 2005/0021751
Ex.1083 (New)	U.S. Patent No. 6,074,427
Ex.1084 (New)	"USPTO rescinds memorandum addressing discretionary denial procedures," USPTO, Feb. 28, 2025

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioners hereby certify, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Petition, that the number of words in this paper is 6,717. Pursuant to 37 C.F.R. § 42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

/Andrew S. Ehmke/
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CERTIFICATE OF SERVICE

The undersigned certifies, under 37 C.F.R. § 42.6, that service was made on the Patent Owner as detailed below.

Date of service August 27, 2025

Manner of service Electronic Email: dlindner@crowell.com; jgurka@crowell.com; rey@bhiplaw.com

Documents served **Petitioner's Opposition to Patent Owner's Request for Discretionary Denial; Exhibits 1052-1084.**

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