UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
ADVANCED MICRO DEVICES, INC.
Petitioners,

v.

ADVANCED CLUSTER SYSTEMS, INC.,
Patent Owner.

IPR2025-00913
U.S. Patent No. 11,570,034

PETITIONERS' RESPONSE TO PATENT OWNER'S REPLY IN SUPPORT OF DISCRETIONARY DENIAL

Table of Contents

I. The Office erred in a manner material to the patentability of the challenged claims. 3

II. 35 U.S.C. § 325(d) does not apply and references that impact patentability were buried under 600 references. 3

III. Merits panel review is in line with the U.S. Government's position that Intel semiconductors are critically important to national security. 5

IV. The Final Written Decision most likely will issue before the district court trial date. 6

V. Relatively minimal relevant investment would have occurred by time of institution. 7

Petitioners' Exhibit List 9

Certificate of Service 15

I. The Office erred in a manner material to the patentability of the challenged claims.

Petitioners' Opposition brief explains in detail (Paper 9, 4, 8-11) how "even though the asserted prior art," i.e., Menon and Trefethen, are "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 challenged claims. *Ecto World, LLC v. RAI Strategic Holdings, Inc.,* IPR2024-01280, Paper 13, 5-6 (May 19, 2025). Patent Owner's mischaracterization of Petitioners' reliance on *Shenzen* (Paper 11, 1) is nothing more than an attempt at deflecting from this inescapable conclusion. The Office's error "in a manner material to [] patentability" weighs against discretionary denial. IPR2025-00565, Paper 11, 2 (July 10, 2025).

II. 35 U.S.C. § 325(d) does not apply and references that impact patentability were buried under 600 references.

Patent Owner alleges that RS6000 is cumulative of Menon's embodiment of "a network of workstations connected by TCP/IP." Paper 9, 2. However, Patent Owner fails to address that Menon teaches an ***entirely different embodiment*** "design[ed] specifically for the IBM SP2" and that RS6000 discloses many additional details about the IBM SP2 system used in Menon. Ex.1005, 5-6; Paper 3, 25, 28. For example, RS6000 discloses a "Symmetric MultiProcessor (SMP)" having "four, eight, twelve, or sixteen 375 MHz 630FP 64-bit processors," "disk

drives or memory cards," and "five [] adapter slots" that can include "Ethernet," "Token Ring," "ATM", "Wide Area Network (WAN)," etc. Paper 3, 43, 33, 38, 54. Accordingly, Patent Owner fails to show that RS6000 is cumulative to Menon.

Regarding POEref, the petition states that "POEref further discloses the 'poe' command." Paper 3, 30. Patent Owner simply points to Menon's discussion of using "IBM's Parallel Operating Environment" without identifying what in Menon supposedly is cumulative of the details of the "poe" command as described in POEref. Accordingly, Patent Owner fails to show that POEref is cumulative to Menon.

Regarding *Becton, Dickinson* factor (e), Petitioners have shown, in Petitioners' Opposition brief (Paper 9, 4, 8-11) and Sec. I above, the Examiner erred in a manner material to the patentability of the '034 patent claims. Regarding factor (f), Patent Owner points to one reference (out of over 600) cited in an IDS as guidance it provided to the Examiner regarding Menon and Trefethen's relevance. Paper 11, 4. However, Patent Owner did not identify the reference as one "to which the examiner should [pay] particular attention." *Ecto World*, 7. Far from being "applicant information or assistance" to the Examiner, the reference if anything helped Patent Owner bury Menon and Trefethen, with the result that the Examiner overlooked the particular teachings of these two references that impact patentability of the '034 patent claims. *Ecto World*, 6-7.

III. Merits panel review is in line with the U.S. Government's position that Intel semiconductors are critically important to national security.

Despite Patent Owner's assertions (Paper 11, 4), Petitioners have explained why a review of the '034 patent is in the economic and national security interests of the United States. Paper 9, 5-7, 17-23. Petitioners' arguments, "narrowly-tailored towards particular products" used by U.S. government agencies—i.e., Intel's Xeon processors and AMD's Instinct chips/graphic cards—"explain in sufficient detail" how Patent Owner using the overly broad claims of the '034 patent to seek injunction threatens the agencies' continued access to these processors and chips/graphic cards that they use to safeguard and advance "the interest of national security." Paper 9, 5-6, 17-20; *TSMC v. AICP*, IPR2025-00828, Paper 17, 3; IPR2025-00862, Paper 14; IPR2025-00794, -00795, Paper 13.

Intel's Xeon processors are used by U.S. Government agencies to power i) "[standalone] 5G ORAN [Open Radio Access Network]" in support of the NSA, ii) supercomputers that "accelerate … advanced national security capabilities," and iii) reconnaissance and armed aircrafts that "operate in … combat environments." Ex.1056; Ex.1057, 2; Ex.1058, 2-4. AMD's Instinct chips/graphic cards are "truly the heart of" DoE's supercomputer that is "dedicated to national security" and to advancing the U.S. nuclear deterrent. Ex.1053, 2. *See also* Paper 9, 5-6, 17-20.

Thus, Patent Owner's use of the overly broad claims of the '034 patent to seek "injunction[s] enjoining" Intel and AMD from "manufactur[ing], …, testing,

[selling], offer[ing] for sale" their semiconductors threatens the U.S. Government's continued access to the Xeon processors and Instinct chips/graphic cards that it needs for safeguarding and advancing national security interests. Ex.1019, 28; Ex.1043, 29.

The importance of Intel's semiconductors to U.S. national security interests is underscored by the U.S. Government's recent investment in Intel to the tune of almost $9 billion, "reflecting the confidence the Trump Administration has in Intel to **advance key national priorities** and **the critically important role** the company plays in expanding the domestic semiconductor industry." Ex.1069, 1 (emphasis added). U.S. Commerce Secretary Howard Lutnick described Intel as "creat[ing] the most advanced chips in the world," and praised the investment for "**strengthening our national security**." *Id.* (emphasis added). These statements make the current position of the Trump Administration and the Dept. of Commerce clear: Intel semiconductors are important to the national security of the U.S. *See id.*

Accordingly, Petitioners respectfully submit that "national security ... interests warrant review of the" '034 patent, consistent with the current position of the Trump Administration and the Dept. of Commerce that stresses the importance of Intel semiconductors to U.S. national security. *TSMC*, 3.

IV. <u>The Final Written Decision most likely will issue before the district court trial date.</u>

Patent Owner mischaracterizes the recent *Markman* hearing held in the

parallel litigations as evidence that the parallel litigations are on schedule. Paper 11, 4-5. Patent Owner neglects to mention that the hearing had already been postponed twice, by almost six weeks. Ex.1020, 4; Paper 11, 5. Similarly, the trial date has already been postponed by more than a month. Ex.1020, 6. It is most likely the trial date will change again, given that trial dates at the court are far from fixed, as evidenced by the district court's scheduling of eleven jury trials on the parallel litigations' trial date. Paper 9, 25-26. With the court's recent massive increase in case workload (Paper 9, 24-25), it is most likely the trial date will be pushed far beyond the FWD deadline, likely to July 2027, in line with the WDTX median time-to-trial statistics (33.9 months). Ex.1021, 37.

V. Relatively minimal relevant investment would have occurred by time of institution.

Patent Owner provides no support for its assertion that "parties have begun extensive accelerated fact discovery." Paper 11, 5. In fact, fact discovery will not close for another *four months* after institution decision. Ex.1020, 3. Nor will expert discovery or substantive motions. *Id.*, 3-4. That is, "much [] work remains in the parallel proceeding as it relates to invalidity" after the institution deadline. IPR2020-01019, Paper 12, 16 (Dec. 1, 2020). With so much substantive work remaining after the institution decision, investment by the court and parties by the time of institution will have been relatively minimal as to the activities pertinent to *Fintiv* factor 3, weighing against discretionary denial.

Respectfully submitted,

Date: September 8, 2025

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PETITIONERS' EXHIBIT LIST

Ex.1001	U.S. Patent No. 10,333,768
Ex.1002	Prosecution History of U.S. Patent No. 10,333,768
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 in Western District of Texas against Intel
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, 2005, *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 Menon
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	"Nvidia, AMD CEOs Rally Behind President Trump's AI 'Action Plan'," B. Lin, Wall Street Journal, July 24, 2025.
Ex.1051	"Microsoft offers cloud customers AMD alternative to Nvidia AI processors," M. Cherney, Reuters, May 17, 2024.
Ex.1052	"What milestone advancements in computer chips mean for the military," Breaking Defense
Ex.1053	"Lawrence Livermore National Laboratory's El Capitan verified as world's fastest supercomputer," LLNL
Ex.1054	"Economic Contributions of Data Centers in the United States, 2017-2023," PWC, Feb. 2025
Ex.1055	Senate hearing on "Winning the AI Race: Strengthening U.S. Capabilities in Computing and Innovation," May 8, 2025
Ex.1056	"DoD Extends Contract for ORAN-based Private 5G Networks through 2025," Echostar, March 18, 2024
Ex.1057	"HPE selected to deliver supercomputers for DoD computing modernization program," M. Iriarte, Military Embedded Systems, February 20, 2018
Ex.1058	"ZMicro to Provide Rugged Computers for US Sky Warden Aircraft," R. Manuel, The Defense Post, Oct. 6, 2022
Ex.1059	"Argonne National Laboratory's Aurora 2+ ExaFLOPS System Will Enable New Science and Engineering," Intel
Ex.1060	"Intel battles AMD with new data center chips," Cherney et al, Reuters, June 4, 2024
Ex.1061	"X86 vs. ARM: A Deep Device into the Architecture," Semicon Electronics, October 28, 2024

Ex.1062	U.S. Patent No. 8,601,101
Ex.1063	Amended Order Assigning the Business of the Court (Judge Moses, Jan. 31, 2025)
Ex.1064	LexMachina docket report
Ex.1065	LexMachina docket report
Ex.1066	LexMachina docket report
Ex.1067	LexMachina docket report
Ex.1068	"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.1069	"Intel and Trump Administration Reach Historic Agreement to Accelerate American Technology and Manufacturing Leadership," Aug. 22, 2025
Ex.1070	LexMachina docket report
Ex.1071	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.1072	"FAQs for Interim Processes for PTAB Workload Management" (USPTO)
Ex.1073	March 26, 2025 Memorandum titled "Interim Processes for PTAB Workload Management" (Acting Director Stewart)
Ex.1074	Aug. 13, 2025 Memo "Interim Director Discretionary Process" (USPTO)
Ex.1075	"Oracle and AMD Collaborate to Help Customers Deliver Breakthrough Performance for Large-Scale AI and Agentic Workloads," Oracle, June 12, 2025.
Ex.1076	"How AMD is Intensifying AI Chip Focus Amid Global Tech Race," Technology Magazine, Nov. 17, 2024.
Ex.1077	"AMD's AI Chips Gain Ground in Data Centers: A Sign for More

	Upside?," Zacks Equity Research, July 16, 2025.
Ex.1078	"Transcript: Sam Altman Testifies At US Senate Hearing On AI Competitiveness," TechPolicy.Press, May 8, 2025.
Ex.1079	"Meta's Obsession With AI Is Great News For AMD," Seeking Alpha, July 9, 2025.
Ex.1080	U.S. Patent Publication No. 2005/0021751
Ex.1081	U.S. Patent No. 6,074,427
Ex.1082	"USPTO rescinds memorandum addressing discretionary denial procedures," USPTO, Feb. 28, 2025

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 September 8, 2025

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

Documents served **PETITIONERS' RESPONSE TO PATENT OWNER'S REPLY IN SUPPORT OF DISCRETIONARY DENIAL**

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