

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,

Petitioner,

v.

ADVANCED CLUSTER SYSTEMS, INC.,

Patent Owner.

Case IPR2025-00914

U.S. Patent No. 12,021,679

PATENT OWNER'S SUR-REPLY

TABLE OF CONTENTS

I.	PETITIONER’S OWN “PEER-TO-PEER ARCHITECTURE” CONSTRUCTION FORECLOSES RELIANCE ON TREFETHEN	1
A.	The Petition Adopted a Peer-to-Peer Construction and Cannot Now Retreat From It.....	1
B.	Trefethen’s “Master Process” Routing Is the Structural Opposite of the Adopted Construction — and Bajaj Himself Quotes the Dispositive Language.....	2
C.	The Petition’s Footnote 4 Hand-Wave Confirms Rather Than Cures the Problem	4
D.	Petitioner’s Litigation Cross-References Cannot Substitute for Petition-Stage Identifications	5
II.	THE BAJAJ SUPPLEMENTAL DECLARATION ADVANCES NEW THEORIES FIRST IDENTIFIED IN REPLY AND SHOULD BE REFUSED UNDER § 42.23(b)	6
A.	The §42.23(b) Framework: Reply May Respond, Not Substitute	6
B.	Ex. 1163 ¶¶10-16 Are the First Identification of the 1→2→3→1 Sequence at the Granular Level Intel Now Asserts	7
C.	Ex. 1163 ¶¶17-22 and ¶¶34-42 Advance New “Master-Is-Not-A- Distinction” and “Screen-Output-Is-Data” Theories Absent from the Petition.....	9
D.	Targeted Relief: Decline to Consider the Identified Paragraphs for First-Time Identifications	10
III.	PETITIONER DID NOT ESTABLISH MOTIVATION TO COMBINE MENON AND TREFETHEN	11
A.	Menon’s Redesign Rationale Identifies the Trefethen Architecture as Architecturally Limited.....	11
B.	Petitioner’s Common-Authorship and “MEX Routines” Arguments Do Not Cure the Motivation Failure	12
C.	Architectural Differences Defeat Reasonable Expectation of Success	14

IV.	PETITIONER DID NOT ESTABLISH THAT THE FIVE REFERENCES ARE PRINTED PUBLICATIONS	16
A.	<i>Hulu</i> Requires Petition-Stage Identification of Public-Access Evidence with Particularity	17
B.	The Petition Relied on Facial Indicia; Ex. 1086 Improperly Adds New Channels.....	17
C.	<i>VidStream</i> Permits Reply Corroboration of the Same Theory; It Does Not Permit Substitution	19
D.	Petitioner’s “Link Chain” Theory Rests on an Assumption That No Wayback Capture Establishes	19
E.	<i>Suffolk</i> Techs Required Contemporaneous Access Evidence; Petitioner Has None.....	23
V.	CONCLUSION.....	24

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Anacor Pharms., Inc. v. Iancu</i> , 889 F.3d 1372 (Fed. Cir. 2018)	2, 6
<i>Apple Inc. v. Andrea Elecs. Corp.</i> , 949 F.3d 697 (Fed. Cir. 2020)	6
<i>Axonics, Inc. v. Medtronic, Inc.</i> , 75 F.4th 1374 (Fed. Cir. 2023)	7, 8
<i>Blue Calypso, LLC v. Groupon, Inc.</i> , 815 F.3d 1331 (Fed. Cir. 2016)	17, 22, 24
<i>DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.</i> , 567 F.3d 1314 (Fed. Cir. 2009)	13, 14, 15
<i>Facebook, Inc. v. Windy City Innovations, LLC</i> , 973 F.3d 1321 (Fed. Cir. 2020)	10
<i>Henny Penny Corp. v. Frymaster LLC</i> , 938 F.3d 1324 (Fed. Cir. 2019)	2, 7, 8
<i>In re Hall</i> , 781 F.2d 897 (Fed. Cir. 1986)	17
<i>In re Lister</i> , 583 F.3d 1307 (Fed. Cir. 2009)	17, 20, 23, 24
<i>In re Magnum Oil Tools Int’l, Ltd.</i> , 829 F.3d 1364 (Fed. Cir. 2016)	19, 21
<i>Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.</i> , 821 F.3d 1359 (Fed. Cir. 2016)	6, 7, 8
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	15

<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) (en banc)	5, 6
<i>Rembrandt Diagnostics, LP v. Alere, Inc.</i> , 76 F.4th 1376 (Fed. Cir. 2023)	7, 10
<i>Southwall Techs., Inc. v. Cardinal IG Co.</i> , 54 F.3d 1570 (Fed. Cir. 1995)	5, 6
<i>VidStream LLC v. Twitter, Inc.</i> , 981 F.3d 1060 (Fed. Cir. 2020)	2, 17, 19

PTAB Decisions

<i>Hulu, LLC v. Sound View Innovations, LLC</i> , IPR2018-01039, Paper 29 (PTAB Dec. 20, 2019) (precedential)	17, 20
<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential)	10, 13

Statutes

35 U.S.C. § 312(a)(3)	14
-----------------------------	----

Regulations

37 C.F.R. § 42.23(b)	6, 8, 9, 10, 14
37 C.F.R. § 42.65(a)	10, 13
37 C.F.R. § 42.104(b)(2)	17
37 C.F.R. § 42.104(b)(4)	14
37 C.F.R. § 42.104(b)(5)	17

Other Authorities

Office Patent Trial Practice Guide,
84 Fed. Reg. 64,280 (Nov. 21, 2019) 6

I. PETITIONER'S OWN "PEER-TO-PEER ARCHITECTURE" CONSTRUCTION FORECLOSES RELIANCE ON TREFETHEN

Claim 1 of the '679 Patent expressly requires "a communications network interface for the nodes to communicate results of mathematical expression evaluation with each other using a peer-to-peer architecture." Ex. 1001, claim 1, 29:59-61. The dependent claims preserve that requirement. Petitioner is bound by the construction of "peer-to-peer architecture" that the Petition adopted, and Trefethen's master-process routing is the structural opposite of what that construction requires. The point is dispositive: under Petitioner's own construction, applied to Trefethen as Petitioner's own expert characterizes it, the claimed peer-to-peer limitation is not disclosed.

A. The Petition Adopted a Peer-to-Peer Construction and Cannot Now Retreat From It

The Petition adopted, as its single express claim construction for "peer-to-peer architecture," the requirement that the architecture be one "in which each node can communicate tasks and data with other nodes without the tasks and data being required to go through a central server or master node." Pet. 13; Ex. 1003, ¶¶54-55.¹ Petitioner expressly informed the Board that "Petitioners and its expert used this construction" for purposes of this proceeding. Pet. 13. The construction Petitioner adopted was originally proposed by Patent Owner ("PO") in a prior IPR proceeding

¹ This is consistent with the District Court's adopted construction. Ex. 1085, 14.

involving the parent patent. IPR2021-00019, Ex. 1040, 1. Petitioner’s affirmative adoption of an opponent-favorable construction is precisely the kind of strategic commitment that the *Anacor/Henny Penny* line of authority makes binding for the duration of the proceeding. Petitioner cannot now retreat from that construction in Reply. *VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1067 (Fed. Cir. 2020); *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1331 (Fed. Cir. 2019) (“[a]n IPR petitioner may not raise in reply an entirely new rationale for its challenge”); *Anacor Pharms., Inc. v. Iancu*, 889 F.3d 1372, 1380-81 (Fed. Cir. 2018) (petitioner is bound by the theory presented in its Petition).

The construction does the substantive work. It requires the absence of any required routing through a master node. Routing through a master node defeats the construction. Whether the system additionally supports any point-to-point primitive is beside the point: if the architecture requires tasks or data to traverse a master node, the architecture is not peer-to-peer under the Petition’s adopted construction.

B. Trefethen’s “Master Process” Routing Is the Structural Opposite of the Adopted Construction — and Bajaj Himself Quotes the Dispositive Language

Trefethen describes the MultiMATLAB system as a master/slave architecture in which a single “master process” launches and controls the other MATLAB processes, each MATLAB process “transmits its output to the master process . . . as soon as it is ready,” and the master collects and serializes that output to the user

terminal. Ex. 1006, 3-4. That is exactly what the Petition's adopted construction excludes.

The point is conceded by Petitioner's own expert. Bajaj's Supplemental Declaration walks the Board through Trefethen's "cycle.m" example and at paragraph 13 quotes Trefethen verbatim: "Trefethen further describes that each MATLAB process transmits its output 'to the master process' (i.e., the first node) 'as soon as it is ready.' Ex.1006, 4; Ex.1003, ¶215." Ex. 1163, ¶13. The cited proposition is dispositive. Under the Petition's own adopted construction, an architecture in which each process is required to transmit its output to a master process — "as soon as it is ready" — is the architecture the construction excludes. Bajaj has supplied the very record admission that defeats Petitioner's reliance on Trefethen.

The Reply confirms the same picture from a different angle. The Reply argues that Trefethen's cycle.m example shows the claimed $1 \rightarrow 2 \rightarrow 3 \rightarrow 1$ sequence. Reply 5-6 (citing Ex. 1163 ¶¶10-16). But the example Bajaj relies on (Ex. 1006, 6) is itself executed in the MultiMATLAB environment that Trefethen and Bajaj both describe as routing every node's output through the master process. Ex. 1006, 4; Ex. 1163, ¶13. Routing every output through a central master is the architectural feature the Petition's construction excludes. The cycle.m example does not transform a master-controlled architecture into a peer-to-peer architecture; it operates inside one.

C. The Petition's Footnote 4 Hand-Wave Confirms Rather Than Cures the Problem

The Petition itself shows that Petitioner saw the master/peer-to-peer tension and could not resolve it. Footnote 4 at Pet. 47 reads: “While Trefethen uses the term ‘master’ process, the cycle.m example uses Send() and Recv(), which are the peer-to-peer paradigm and not the master/slave paradigm. Here, the ‘master’ process is the process with which the user is directly interacting. Ex.1003, ¶215.” Pet. 47 n.4.

Petitioner's attempt to resuscitate Trefethen's failures through this footnote fails. First, the construction Petitioner adopted does not turn on which command primitive is invoked at a given step. It turns on whether tasks and data are required to be routed through a master node. Pet. 13. A system that uses Send() and Recv() primitives but nonetheless requires every output to traverse a master process — as Trefethen itself describes and as Bajaj himself acknowledges — is not peer-to-peer under that construction. Ex. 1006, 4; Ex. 1163, ¶13. Second, the redefinition the footnote proposes — that “master” here just means “the process with which the user is directly interacting” — is at odds with Trefethen's own architecture description, which assigns to the master both interactive responsibilities and the collection/serialization of every other process's output. Ex. 1006, 3-4. Petitioner cannot rewrite Trefethen's architectural description to fit a construction Trefethen does not satisfy.

The footnote is therefore a tacit acknowledgment that Petitioner recognized the dispositive structural mismatch and tried to argue past it. The Board need not accept that argument. The structural mismatch is established by Trefethen's own text and by Bajaj's own quotation of it.

D. Petitioner's Litigation Cross-References Cannot Substitute for Petition-Stage Identifications

Petitioner cites PO's preliminary infringement contentions in the parallel district court litigation (Ex. 1022) and invokes *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995), to argue that PO conceded user-authored application code is within claim scope. Reply 19-20. Neither argument supports Petitioner's prior-art identification.

Ex. 1022 describes Intel's accused Habana AI accelerator products (Gaudi HLS-1, HLS-Gaudi2, Gaudi 3) and Xeon Scalable Processors, and uses Intel's HCCL Demo source code to provide notice how the hardware of those accused products implements the claim limitations. The contentions explain how the accused products, as Intel manufactures and markets them, satisfy the claim limitations. They do not describe what Trefethen discloses. The accused products implement modern hardware and a kernel-dispatch architecture; that does not transform Trefethen's 1996 hardcoded MATLAB script into the architecture the claims recite. Litigation contentions describing an accused product's architecture do not shift claim scope; they apply the construction the court adopted to particular accused features. *Phillips*

controls claim construction here, not the contents of an infringement contention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315-17 (Fed. Cir. 2005) (en banc). Additionally, *Southwall* is immaterial as Petitioner has not identified any prosecution history arguments that PO conceded the scope of its claims.

II. THE BAJAJ SUPPLEMENTAL DECLARATION ADVANCES NEW THEORIES FIRST IDENTIFIED IN REPLY AND SHOULD BE REFUSED UNDER § 42.23(b)

A. The §42.23(b) Framework: Reply May Respond, Not Substitute

A reply may respond to arguments raised in the POR or the Institution Decision, but it may not proceed in a new direction or present evidence that could have been submitted earlier to make out a prima facie case. 37 C.F.R. § 42.23(b); Office Patent Trial Practice Guide, 84 Fed. Reg. 64,280, 64,299 (Nov. 21, 2019). Federal Circuit precedent enforces the same boundary. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.* rejects reply arguments that raise new issues or rely on belated evidence needed to make out the petitioner's case. 821 F.3d 1359, 1369 (Fed. Cir. 2016). *Anacor* permits legitimate reply evidence; it does not allow a petitioner to introduce a new theory absent from the Petition. 889 F.3d at 1380-81. *Apple Inc. v. Andrea Elecs. Corp.* permits elaboration on the same identified reference and same legal argument; it does not permit substitution of a new identified prior-art structure. 949 F.3d 697, 706-07 (Fed. Cir. 2020).

Axonics, Inc. v. Medtronic, Inc. permits a petitioner to argue and present evidence under a patent owner's new claim construction, but only when the petitioner "relies on the same embodiments for each invalidity ground as were identified in the petition." 75 F.4th 1374, 1384 (Fed. Cir. 2023). The Federal Circuit expressly reserved "the question of whether, when presented with a new claim construction, a petitioner can rely in its reply on new embodiments from the prior art references that were relied on in the petition." *Id.* The post-*Axonics* decision in *Rembrandt* confirms that permissible Reply elaboration must rest on "the same legal ground" based on "the same prior art reference[s]" and the same embodiment. *Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1383-85 (Fed. Cir. 2023). *Rembrandt* also identified Intelligent Bio-Systems, *Henny Penny*, *Wasica*, and *Ariosa* as examples where reply arguments crossed the line. *Id.*

This framework controls three discrete portions of the Bajaj Supplemental Declaration.

B. Ex. 1163 ¶¶10-16 Are the First Identification of the 1→2→3→1 Sequence at the Granular Level Petitioner Now Asserts

Bajaj's Supplemental Declaration at paragraphs 10-16 sets out, for the first time, the granular numerical walk-through of Trefethen's cycle.m example as the disclosure of the claimed 1→2→3→1 chained result-passing order of operations. Ex. 1163, ¶¶10-16. The Petition's Menon/Trefethen analysis (Pet. 44-49) addressed the references at the level of "distribute calls" and "communicate results" without

identifying, with particularity, that the cycle.m example's process-0→process-1→process-2→process-0 trace is the asserted satisfaction of the first-node-to-second-node-to-third-node-to-first-node sequence the claims require.

Petitioner will likely characterize ¶¶10-16 as responsive elaboration. The label does not change the analysis. The question is whether Petitioner may use a Reply to identify, for the first time, the specific structural feature of Trefethen that maps to the claimed sequence. Section 42.23(b) does not allow that maneuver. *Intelligent Bio-Sys.*, 821 F.3d at 1369; *Henny Penny*, 938 F.3d at 1331. The Federal Circuit recognized in *Axonics* that a Reply may respond to a new claim construction; it did not authorize a Reply to introduce a new prior-art embodiment or a new structural mapping. 75 F.4th at 1384.

The merits backstop is no rescue. Even if Ex. 1163 ¶¶28-33 were considered, the claim language distinguishes the second node's act — “execute the matrix operations on the array of data elements” — from the third node's act — “execute at least a mathematical expression evaluation using the received result.” Ex. 1001, claim 1, 30:1-2, 30:6-8. The two recitations use different verbs' objects and depend on different inputs at different nodes. Bajaj's reading collapses the two by treating the same hardcoded send/recv operation in Trefethen's cycle.m as satisfying both. Ex. 1163 ¶¶29-32. The claim does not permit that conflation; the patentee's separate

identification of distinct evaluation acts at distinct nodes is a structural requirement, not stylistic redundancy.

C. Ex. 1163 ¶¶17-22 and ¶¶34-42 Advance New “Master-Is-Not-A-Distinction” and “Screen-Output-Is-Data” Theories Absent from the Petition

Paragraphs 17-22 of the Bajaj Supplemental Declaration advance a new theory that Petitioner labels “Master-controlled dispatch model is not a distinction.” Ex. 1163, §II.A.2 (¶¶17-22). The Petition’s mapping of Menon/Trefethen did not address Patent Owner’s anticipated peer-to-peer / master-routing distinction. The Petition’s only treatment of the “master” terminology was the conclusory footnote at Pet. 47 n.4. The Supplemental Declaration’s new theory that “master-controlled dispatch” “is not a distinction” was not identified in the Petition. It was first developed in Reply, after PO’s Response drew the distinction. Reply 14-23. Section 42.23(b) does not permit Petitioner to develop, for the first time in Reply, the substantive answer to the construction PO advanced.

Paragraphs 34-42 advance a separate new theory: that Trefethen’s “screen output” of the value “a = 4” satisfies the claimed return of the mathematical expression evaluation result to the first node and to the user interface. Ex. 1163, §II.A.3(b) (¶¶34-42). Again, the Petition did not identify Trefethen’s screen output of “a = 4” as the structural disclosure of the claimed return-of-result limitation; that

identification appears for the first time in the Bajaj Supplemental Declaration. The Reply now relies on those paragraphs. Reply 14-23. The same § 42.23(b) bar applies.

The Bajaj Supplemental Declaration's repackaged narrative is also subject to the no-parroting rule. Conclusory expert testimony that does no more than restate Petitioner's attorney argument is entitled to little weight. *Xerox Corp v. Bytemark, Inc.*, IPR2022-00624, Paper 9, 15 (Aug. 24, 2022) (precedential) (according "little weight" to declaration testimony that contains a verbatim restatement of a petition's conclusory assertions); 37 C.F.R. § 42.65(a); see also *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1351 (Fed. Cir. 2020).

D. Targeted Relief: Decline to Consider the Identified Paragraphs for First-Time Identifications

The relief PO requests is targeted. PO does not ask the Board to strike Ex. 1163 wholesale. The Board should decline to consider Ex. 1163 ¶¶10-16, ¶¶17-22, and ¶¶34-42 to the extent Petitioner relies on those paragraphs to supply first-time identifications of (i) the 1→2→3→1 chained result-passing sequence, (ii) the answer to PO's master/peer-to-peer construction distinction, and (iii) the screen-output-as-claimed-return-of-result mapping. *Rembrandt*, 76 F.4th at 1383-85 (recognizing that the Board may decline to consider a new theory first raised in Reply). That remedy preserves legitimate rebuttal while enforcing the Petition-stage particularity required by statute, regulation, and the Trial Practice Guide.

III. PETITIONER DID NOT ESTABLISH MOTIVATION TO COMBINE MENON AND TREFETHEN

Even if Menon and Trefethen, in combination, were treated as disclosing the claimed $1 \rightarrow 2 \rightarrow 3 \rightarrow 1$ sequence, Petitioner did not establish that a person of ordinary skill in the art would combine the references in the way the claims require. The Petition's motivation showing rests on three assertions that do not establish the required combination: (i) common authorship, (ii) Menon's citation to Trefethen, and (iii) Menon's "MEX routines" extension as evidence of compatibility. None supplies the motivation the claims require.

A. Menon's Redesign Rationale Identifies the Trefethen Architecture as Architecturally Limited

Menon describes the Trefethen MultiMATLAB architecture and identifies limitations: tight coupling to MPICH, lack of extensibility, and performance constraints. Ex. 1005, 2-3. Menon then describes a redesigned architecture using vendor-specific MPI implementations and parallel MEX routines, with the explicit purpose of overcoming those fundamental limitations. Ex. 1005, 2-3, 14. A person of ordinary skill in the art reading Menon would adopt the redesigned architecture — not return to the Trefethen architecture Menon redesigned away from. The Reply's framing that "Menon builds on Trefethen" (Reply 24-25) describes the conceptual lineage but does not address Menon's specific architectural changes. The Bajaj Supplemental Declaration's reiteration of the same motivation theory, without

addressing these architectural deficiencies, does not establish that a POSITA would be motivated to make the combination. Ex. 1163, ¶¶43-46.

B. Petitioner's Common-Authorship and "MEX Routines" Arguments Do Not Cure the Motivation Failure

The Reply argues that Menon and Trefethen share two authors, both papers describe "aspects of the same system," and "Menon explicitly cites Trefethen and explains that Menon builds on the teachings of Trefethen." Reply 24-26 (citing Ex. 1005, 1-2; Ex. 1003, ¶80). The Bajaj Supplemental Declaration repeats the same points. Ex. 1163, ¶¶47-53. None of those facts supplies the motivation the claims require.

Common authorship is not a substitute for motivation evidence. Two authors writing two papers about the same general system does not establish that a POSITA reading either paper would be motivated to combine the references in the specific way Petitioner now proposes — a chained result-passing architecture in which the first node's call yields a second-node evaluation, the second-node result yields a third-node evaluation, and the third-node result returns to the first node for delivery to the user interface, all over a peer-to-peer architecture. Ex. 1001, claim 1.

Petitioner's invocation of "MEX routines" proves the opposite of what Petitioner claims. Reply 24-26; Ex. 1163, ¶49. Menon's MEX-routines extension was Menon's response to limitations Menon expressly identified in Trefethen's architecture: "tight coupling" to MPICH and lack of "extensibility." Ex. 1005, 2-3.

MEX routines are not the architectural change Petitioner needs to bridge the obviousness gap. Petitioner needs to show that a POSITA would substitute a different processor organization while preserving Menon's reported parallel-efficiency results. Adding software routines for extensibility is not the same as changing the underlying processor organization. Bajaj's testimony at ¶49 — that “the authors of the Menon paper actually implemented the modification” of adding MEX routines — does not address the architectural shift Petitioner now relies on. It addresses a different modification entirely. That kind of conclusory expert testimony, which substitutes a different modification for the architectural change Petitioner needs, is entitled to little weight. *Xerox*, IPR2022-00624, Paper 9, 15 (Aug. 24, 2022) (precedential); 37 C.F.R. § 42.65(a).

Menon does not supply motivation to preserve Trefethen's earlier architecture; it supplies the reason to move past it. Menon expressly presents a “new MultiMATLAB architecture redesigned” for performance and extensibility, then identifies the “first MultiMATLAB architecture” as more tightly coupled to MPICH/P4, unable to use vendor-specific MPI implementations, unable to support extensions via parallel MEX routines, and subject to performance limitations. Ex. 1005, 2, 14. That is a concrete redesign to avoid identified architectural limitations, not a mere preference among equivalent options. Under *DePuy Spine*, a reference that discourages the proposed path or undercuts the rationale for pursuing it defeats

motivation and reasonable expectation of success. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009). Menon therefore teaches away from reconstructing the Trefethen architecture that Menon redesigned to avoid.

Petitioner also relies on additional paragraphs of the Bajaj Supplemental Declaration to supply motivation evidence. Reply 24-26; Ex. 1163, ¶¶43-53. Those paragraphs are themselves Reply-stage additions not present in Bajaj's original declaration. They are subject to the same § 42.23(b) objection: a Petitioner cannot use a supplemental declaration to supply motivation evidence the Petition was required to identify with particularity. 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b)(4).

C. Architectural Differences Defeat Reasonable Expectation of Success

Multi-process, distributed-memory MultiMATLAB systems present cache-coherency-equivalent coordination issues that depend on the specific architectural premises Menon and Trefethen describe. Those premises affect the same performance dimension Petitioner invokes from Menon (parallel efficiency). Petitioner's Reply rests its motivation theory on the same Menon/Trefethen combination, asserting it would produce the claimed peer-to-peer chained-evaluation architecture. With Menon's own architectural critique of the Trefethen design, and with Trefethen's master-controlled routing inconsistent with the claimed

peer-to-peer architecture, there is no cognizable basis on the Petition record for the combination Petitioner asserts.

KSR permits combining elements according to known methods to yield predictable results. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-21 (2007). It does not authorize the Board to fill an evidentiary gap with hindsight. *DePuy Spine* confirms that a reference teaches away when it suggests the path urged would not be productive of the claimed result. *DePuy Spine*, 567 F.3d at 1327. Menon's redesign rationale and reported performance results do not support Petitioner's proposed combination.

The textbook hindsight problem *KSR* forbids is also present here. The Petition relied on Menon's specific architectural arrangement to support the motivation and reasonable-expectation-of-success showing for combining Menon and Trefethen. Pet. 22-25; Ex. 1003, ¶71; Ex. 1005, 1-2. Petitioner cannot retroactively substitute a different architectural arrangement and rely on Menon's performance results to bridge the obviousness gap. The architectural substitution itself raises motivation and reasonable-expectation-of-success questions Petitioner has not addressed, and *KSR* does not permit a tribunal to bridge that gap with hindsight. *KSR*, 550 U.S. at 421; *DePuy*, 567 F.3d at 1327.

IV. PETITIONER DID NOT ESTABLISH THAT THE FIVE REFERENCES ARE PRINTED PUBLICATIONS

The issue is not whether Menon, Trefethen, RS6000, POEref, and MPIref could in some abstract sense qualify as prior art. The issue is whether the Petition — not theories added in Reply — meets the preponderance-of-the-evidence standard on public accessibility. It does not. The Petition's printed-publication showing relied on facial indicia of the references (cover pages, conference designations, IBM library listings) and a small set of Petition-stage exhibits. Pet. 14-16. The Reply now relies on Ex. 1086 (Hsieh-Yee declaration) and dozens of supporting exhibits to establish public accessibility through library cataloging records, MARC records, WorldCat records, Academia Sinica records, and Internet Archive captures. Reply 14-21. Petitioner has not disputed the insufficiency of the Petition's original showing; instead, Petitioner has added new theories. That confirms the Board must evaluate whether the Reply's new evidence merely corroborates the Petition-stage theories or supplies missing public-access channels. Ex. 1086 may corroborate public-access theories the Petition identified; it should not supply new theories as substitutes for theories the Petition omitted. And on the link-chain theory Petitioner does carry forward from the Petition, the record contains no evidence — only assumption — that the hyperlink chain Petitioner asks the Board to walk actually existed in the form Petitioner needs.

A. *Hulu* Requires Petition-Stage Identification of Public-Access Evidence with Particularity

Printed-publication status is not presumed. The petitioner must identify, with particularity, evidence sufficient to establish a reasonable likelihood that an asserted reference was publicly accessible before the critical date. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, at 13-16 (Dec. 20, 2019) (precedential). Reply evidence may corroborate that showing; it may not establish a public-access channel the Petition never identified. *VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1064-67 (Fed. Cir. 2020). The statutory and regulatory framework reinforces the same line. 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b)(2), (b)(5). Public accessibility is the touchstone. *In re Hall*, 781 F.2d 897, 898-99 (Fed. Cir. 1986); *In re Lister*, 583 F.3d 1307, 1311-17 (Fed. Cir. 2009); *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348-50 (Fed. Cir. 2016).

B. The Petition Relied on Facial Indicia; Ex. 1086 Improperly Adds New Channels

For each of the five references, the Petition relied on the references' facial indicia and a small set of ACM/Internet-Archive exhibits. Pet. 14-16. Ex. 1086 introduces library cataloging records and expands the public-accessibility theory beyond what the Petition presented.

The reference-by-reference picture is consistent. For Menon, the Petition cited Ex. 1005 (the reference itself), Exs. 1026 and 1027 (SC97 proceedings), Ex. 1028 (citation count), and Exs. 1023 and 1029 (Cornell webpages and Internet Archive affidavit). Pet. 14. Hsieh-Yee's declaration adds WorldCat records (Ex. 1090) and Academia Sinica MARC records (Ex. 1091) — library cataloging records the Petition did not cite. Ex. 1086, ¶¶28-70. Internet Archive captures of Menon (Ex. 1092) corroborate the same kind of evidence the Petition already relied on (Ex. 1029); the WorldCat and Sinica records, by contrast, supply a new evidentiary channel. For Trefethen, the Petition cited Ex. 1023 (Cornell), Ex. 1029 (Internet Archive affidavit), and Ex. 1035 (ACM citations). Pet. 14-15. Hsieh-Yee adds Washington State University MARC records (Ex. 1101) — again, library cataloging records the Petition did not cite. Ex. 1086, ¶¶71-104. The same pattern repeats for RS6000, POEref, and MPIref. Reply 14-21; Ex. 1086, ¶¶105-180. The targeted objection is to the new library-cataloging-records theory that the Petition never identified, not to corroboration of the Internet Archive evidence the Petition already presented.

The relevant question is reference-specific: for each reference, does Ex. 1086 corroborate a public-access channel the Petition identified, or does it supply a new channel? The Petition identified facial indicia and ACM citations. Ex. 1086

supplies library cataloging records and Internet Archive captures as the public-access basis. That is a new evidentiary theory, not corroboration.

C. *VidStream* Permits Reply Corroboration of the Same Theory; It Does Not Permit Substitution

VidStream addressed reply evidence that corroborated the publication date of the same asserted reference after the patent owner challenged the publication date. 981 F.3d at 1064-67. The Federal Circuit approved that use because the petition had identified the publication and the reply evidence supported the same publication theory. *VidStream* did not authorize a petitioner to use a reply declaration as the first identification of a distinct public-access channel.

The objection here is targeted. Patent Owner does not ask the Board to exclude Ex. 1086 wholesale. Ex. 1086 may corroborate Petition-stage identifications. It should not become the first source of theories that the Petition was required to identify with particularity. As applied to each reference, the Board should rely on Ex. 1086 only for corroboration of public-access channels the Petition presented.

D. Petitioner's "Link Chain" Theory Rests on an Assumption That No Wayback Capture Establishes

Petitioner's preponderance burden on public accessibility cannot be carried by assumption of a missing predicate fact. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (the Board "must base its decision on arguments .

. . advanced by a party,” and may not “fill in” the petition’s gaps); *Hulu*, IPR2018-01039, Paper 29 at 13 (petitioner must “identify with particularity” evidence of public accessibility, with no presumption in its favor); *In re Lister*, 583 F.3d at 1316-17 (mere existence of a record is not evidence that a POSITA could reach the underlying reference).

Petitioner’s printed-publication theory for Menon, Trefethen, RS6000, POEref, and MPIref rests on a chain of hyperlinks. Petitioner asks the Board to find that a POSITA, exercising reasonable diligence, could have started at a root webpage and clicked through one or more intermediate pages to arrive at the prior-art reference. *See* Pet. 14-16; Ex. 1086 ¶¶46-53 (Menon), ¶¶76-77 (Trefethen), ¶¶112-118 (RS6000), ¶¶128-136 (POEref), ¶¶153-180 (MPIref). Each step in the chain is authenticated only by a separate Wayback Machine capture — and each capture bears its own archival date.

A hyperlink does not traverse time. A Wayback Machine capture proves only what content existed at one URL on one date. That a 2003 capture of a Cornell index page (Ex. 1023, capture 20031118185911) contains a string formatted as a link to Trefethen says nothing about what content sat at the linked URL in 2001 or in 1996 — the dates on which Petitioner asserts public accessibility. The same gap pervades the RS6000 chain: the entry-point Product Documentation Library was archived April 10, 2001 (capture 20010410025356);

the Volume 1 landing page was not archived until June 17, 2001 (20010617011337); the section pages Petitioner actually offers as RS6000 (Ex. 1007) were not archived until July 26, 2001 (20010726184202; 20010726183314) and August 2001 (Ex. 1038, 1-5); and the parallel pSeries entry path runs from October 24, 2001 (20011024235023) to December 4, 2001 (20011204190353). The chain spans ten months. For POEref the chain is worse: Petitioner's own expert concedes "Internet Archive . . . has not archived POE-2001." Ex. 1086 ¶128. The chain never reaches the document at any date.

The Board cannot supply the missing link. To prove a POSITA could have actually navigated the chain on the asserted critical date, Petitioner needed to tie the separately dated captures together into a navigable public-access path at the relevant date — either through contemporaneous evidence or testimony establishing that each intermediate page existed and contained the same link in the relevant state. Petitioner has neither. Asking the Board to assume that all linked pages existed identically on a single date is precisely the gap-filling *Magnum Oil* forbids. 829 F.3d at 1380. The preponderance burden on each reference's public accessibility is therefore unmet.

Additionally, with respect to RS6000, the Hsieh-Yee links the Reply relies on for accessibility of RS6000 differ from the evidence presented in the Petition. And Bajaj's declarations do not state that he actually traversed any of these pages

in a reasonably diligent manner to locate the alleged RS6000 reference. Hsieh-Yee's declaration does not corroborate the pages relied upon in the Petition by Bajaj, but rather cites different pages accessed after the fact in 2026. Ex. 1086 ¶¶112-119. Neither Bajaj nor Hsieh-Yee provides evidence that RS6000 was viewed or downloaded from the IBM website prior to the critical date. *Blue Calypso*, 815 F.3d at 1349. It is Petitioner's burden to clearly and consistently present its evidence in the Petition that a POSITA could have located the documents exercising reasonable diligence. The record lacks sufficient evidence from Bajaj that this was the case, and Hsieh-Yee's declaration cannot fill that gap: Hsieh-Yee may authenticate cataloging and archival records, but her expertise does not extend to the technical-diligence inference about how a cluster-computing POSITA would have located IBM/Cornell materials through the asserted path at the relevant time. Compare Pet. 12 with Ex. 1086 ¶7. The Board should not condone Petitioner's hindsight do-over analysis.

Finally, the Hsieh-Yee usage-record case for RS6000, Ex. 1086 ¶¶120-123, is also unavailing. The URL contained in the bibliography of Ex. 1112 (<http://publibfp.boulder.ibm.com/epubs/pdf/da70bmst.pdf>) is a "dead link." The contents of that link, at a URL entirely different from what Bajaj identified, are unknown, and it is speculative to assume the link's contents are the same as

RS6000 solely based on the title, especially given the ease with which web pages could be edited in the relevant time period.

E. *Suffolk Techs* Required Contemporaneous Access Evidence; Petitioner Has None

Petitioner's reliance on *Suffolk Techs. v. AOL, Inc.*, 752 F.3d 1358, 1365 (Fed. Cir. 2014), for the proposition that subsequent citation establishes accessibility (Reply 16-21), misreads the case. *Suffolk Techs* addressed a Usenet post where access was established by replies posted to the same Usenet group during the critical period; the court relied on contemporaneous evidence that interested researchers actually accessed the post in the forum where it was published. *Id.* at 1361, 1365. Here, Petitioner offers no contemporaneous evidence that any skilled person actually accessed Menon, Trefethen, RS6000, POEref, or MPIref through the cataloging records or citation chains the Reply now invokes. Citations in later publications by other authors prove only that those authors had heard of the references, not that the references were publicly accessible to a POSITA on the priority date. Mere proof of subsequent awareness is the very "mere existence" theory *In re Lister* rejected. 583 F.3d at 1316-17.

The Reply's citation-counts theory — that Menon, Trefethen, RS6000, and MPIref are publicly accessible because they were later cited by other publications (Reply 16-21, citing Exs. 1028, 1035, and the Hsieh-Yee declaration) — fails on

the same logic. Citation counts establish that some authors knew of the references after the priority date; they do not establish that the references were publicly accessible to a POSITA on the priority date. The Reply identifies no contemporaneous evidence — testimony, library records dated before the priority date, or cataloging entries timestamped before the critical date — connecting the later-cited references to a publicly navigable channel on the priority date. *Blue Calypso*, 815 F.3d at 1350 (public accessibility “must be assessed on a case-by-case basis”); *In re Lister*, 583 F.3d at 1314 (“mere existence” is insufficient).

V. CONCLUSION

Petitioner has not proven by a preponderance of the evidence that claims 1-19 are unpatentable. PO respectfully requests that the Board confirm the patentability of all challenged claims.

Dated: May 29, 2026

Respectfully submitted,

/David P. Lindner/
David P. Lindner, Reg. No. 53,222
Counsel for Patent Owner
Advanced Cluster Systems, Inc.

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that this Sur-Reply complies with the type-volume limits of 37 C.F.R. § 42.24 because, according to the word count provided by the word-processing system used to prepare this paper, it contains 5,070 words, excluding the parts of the document exempted by 37 C.F.R. § 42.24.

Dated: May 29, 2026

Respectfully submitted,

/David P. Lindner/
David P. Lindner, Reg. No. 53,222
Counsel for Patent Owner
Advanced Cluster Systems, Inc.

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that a true and correct copy of the foregoing Patent Owner's Sur-Reply was served in its entirety on May 29, 2026 by filing this document through the Patent Trial and Appeal Board End to End (PTACTS) System, and by causing true and correct copies to be served by electronic mail on Petitioner's lead and back-up counsel of record at the following email addresses:

Andrew S. Ehmke
David L. McCombs
Dan Smith
Dagim Tilahun

HAYNES AND BOONE LLP

andy.ehmke.ipr@haynesboone.com
david.mccombs.ipr@haynesboone.com
dan.smith.ipr@haynesboone.com
dagim.tilahun.ipr@haynesboone.com

Dated: May 29, 2026

Respectfully submitted,

/David P. Lindner/
David P. Lindner, Reg. No. 53,222
Counsel for Patent Owner
Advanced Cluster Systems, Inc.