

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FEDEX CORPORATION, and FEDEX OFFICE
AND PRINT SERVICES, INC.
Petitioners

v.

VALTRUS INNOVATIONS LTD.,
Patent Owner

Case No. IPR2025-01491
Patent No. 7,904,686

PATENT OWNER'S PRELIMINARY RESPONSE TO THE PETITION

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PATENT OWNER’S EXHIBIT LIST

No.	Exhibit Description
2001	Memorandum titled “ <i>Director Institution of AIA Trial Proceedings</i> ,” dated October 17, 2025 (“the Director Institution Memo”)
2002	Memorandum titled “Interim Processes for PTAB Workload Management,” dated March 26, 2025 (“the Interim Processes Memo”)
2003	PTAB Proposed Rule 2025-0025
2004	<i>Ex parte</i> Reexamination request filed by NetApp, Inc. in <i>Ex Parte</i> Reexamination No. 90/015,602
2005	Complaint in <i>Valtrus Innovations Ltd. et al v. The Home Depot, Inc. et al.</i> , Case No. 2:25-cv-00081-JRG (E.D. Tex. January 27, 2025)
2006	Second Amended Docket Control Order in <i>Valtrus Innovations Ltd. et al v. The Home Depot, Inc. et al.</i> , Case No. 2:25-cv-00081-JRG (E.D. Tex. January 27, 2025)
2007	First Amended Docket Control Order in <i>Valtrus Innovations Ltd. et al v. FedEx Corporation et al.</i> , Case No. 2:25-cv-00516-JRG (E.D. Tex. May 9, 2025)
2008	Complaint in <i>Valtrus Innovations Ltd. et al v. NetApp, Inc.</i> , Case No. 2:25-cv-00517-JRG (E.D. Tex. May 9, 2025)
2009	Complaint in <i>NetApp, Inc. v. Valtrus Innovations Ltd. et al.</i> , Case No. 1:25-cv-06138 (S.D.N.Y. July 25, 2025)
2010	<i>Reserved</i>
2011	Complaint in <i>Valtrus Innovations Ltd. et al v. Lenovo Group Limited et al.</i> , Case No. 2:25-cv-00080-JRG (E.D. Tex. January 27, 2025)
2012	Complaint in <i>Starbucks Corporation v. Valtrus Innovations Ltd. et al.</i> , Case No. 2:25-cv-01859 (W.D. Wash. September 25, 2025)
2013	Docket Navigator Statistics for Judge Gilstrap
2014	Docket Navigator Statistics for EDTX Patent Cases

No.	Exhibit Description
2015	Invalidity Contentions (cover pleading) in <i>Valtrus Innovations Ltd. et al v. The Home Depot, Inc. et al.</i> , Case No. 2:25-cv-00081-JRG (E.D. Tex. January 27, 2025)
2016	Invalidity Contentions ('832 patent Wolf Chart) in <i>Valtrus Innovations Ltd. et al v. The Home Depot, Inc. et al.</i> , Case No. 2:25-cv-00081-JRG (E.D. Tex. January 27, 2025)
2017	Declaration of Angela Quinlan
2018	R. Mansinghani, et al., “A Data-Based Look at Ex Parte Reexaminations,” American Bar Association (March 26, 2025)
2019	Invalidity Contentions (cover pleading) in <i>Valtrus Innovations Ltd. et al v. FedEx Corporation et al.</i> , Case No. 2:25-cv-00516-JRG (E.D. Tex. May 9, 2025)

I. INTRODUCTION

Patent Owner’s Brief in Support of Discretionary Denial (Paper 16, “Discretionary Denial Brief”) laid out a host of reasons why institution of the Petition for *Inter Partes* Review (Paper 1) of U.S. Pat. No. 7,904,686 (“the ’686 Patent”) filed by Fedex Corporation and FedEx Office and Print Services, Inc. (collectively, “FedEx” or “Petitioners”) would be an inappropriate use of Office resources and why discretionary denial of the Petition is accordingly appropriate. In this Patent Owner Preliminary Response (“POPR”) Patent Owner provides yet more reason to deny the Petition—because it fails to establish a reasonable likelihood of success as to any challenged claim, for multiple reasons.

First, the Petition fails because Petitioners have proffered unexplained and irreconcilably contrary claim construction positions before this tribunal and the parallel district court, and thus failed to comply with their responsibility to clearly articulate in the petition “[h]ow the challenged claim is to be construed.” Specifically, in parallel district court litigation, Petitioners have taken the position that numerous challenged terms—including multiple claim terms in all challenged independent claims—are indefinite for “fail[ing] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” EX2019 at 95-96. Yet, in the Petition, Petitioners purport to be capable of reasonably interpreting the claims under the *Philips* standard and applying the prior art based on those

interpretations, without any explanation, expert or otherwise, to address the litigation alleged interpretation issues. This is plainly improper and grounds for denial under Office precedent.

Second, the Petition should be denied because it hinges on hindsight-driven, conclusory motivations to combine that find no support in the prior art references Petitioners rely upon. In particular, Petitioners' Madany-Locasto combination ignores Madany's central purpose and would result in a system that renders Madany unable to effectuate its principal claimed advance over the prior art—a result that, under well-settled Federal Circuit and PTAB authority—no POSITA would be motivated to achieve. Further, Petitioners' proposed combinations lack credible expert support, because Petitioners' expert provides conclusory testimony that on key points is identical or substantially identical to the attorney argument in the Petition. Such expert testimony that merely parrots the Petition cannot satisfy Petitioner's to establish a reasonable likelihood of success.

II. BACKGROUND

A. The Parallel Proceedings

As explained in the Discretionary Denial Brief, there are five pending district actions involving the '686 Patent. This multitude of district court proceedings is summarized below:

- *Valtrus Innovations Ltd. et al v. The Home Depot, Inc. et al.*, Case No. 2:25-cv-00081-JRG (E.D. Tex., filed January 27, 2025) (the “Home Depot Action”).
 - o Nature of action: Patent infringement action alleging infringement of five patents, including the ’686 patent.
 - o EX2005. Trial date: October 5, 2026. EX2006, 001.
- *Valtrus Innovations Ltd. et al v. FedEx Corporation et al.*, Case No. 2:25-cv-00516-JRG (E.D. Tex., filed May 9, 2025) (the “FedEx Action”).
 - o Nature of action: Patent infringement action alleging infringement of six patents, including the ’686 patent. EX1016.
 - o Trial date: March 1, 2027. EX2007, 001.
- *Valtrus Innovations Ltd. et al v. NetApp, Inc.*, Case No. 2:25-cv-00517-JRG (E.D. Tex., filed May 9, 2025) (the “NetApp Action”).
 - o Nature of action: Patent infringement action alleging infringement of six patents, including the ’686 patent. EX2008. Consolidated with Case No. 2:25-cv-00516 for discovery purposes.
 - o Trial date: March 1, 2027. EX2007, 001.
- *NetApp, Inc. v. Valtrus Innovations Ltd. et al.*, Case No. 1:25-cv-06138 (S.D.N.Y., filed July 25, 2025) (the “NetApp DJ Action”).
 - o Nature of action: Declaratory judgment action alleging non-infringement of six patents, including the ’686 patent. EX2009.
 - o Trial date: To be determined.
- *Starbucks Corporation v. Valtrus Innovations Ltd. et al.*, Case No. 2:25-cv-01859 (W.D. Wash., filed September 25, 2025) (the “Starbucks DJ Action”).
 - o Nature of Action: Declaratory judgment action alleging invalidity and non-infringement of 12 patents, including the ’686 Patent. EX2012.
 - o Trial date: To be determined.

In addition to the foregoing district court proceedings, as discussed in the Discretionary Denial Brief, a request for *ex parte* reexamination that addresses every challenged claim of the '686 patent is also pending before the Office. *See* Reexamination Control No. 90/015,539; EX2004.

B. Overview of the '686 Patent

The inventors of the '686 patent recognized a problem in prior art methods of providing data security. Traditional data security methods relied on encryption, but encryption had significant problems. For example, “access to the data is not permitted unless the user has the proper decryption code for the data.” EX1001, 1:14-16. Further, “encryption-decryption software applications are typically time consuming to use and have often caused confusion for the users.” *Id.*, 1:16-18.

Alternatives to encryption, such as online licensing checks, also had drawbacks. For example, an online licensing check “requires the software developer to embed the licensing code in each software file and requires the purchaser to access a public network (e.g., Internet) for the online licensing check.” *Id.*, 1:19-24. Further, such licensing checks are ineffective to prevent individuals from “retrieving the data blocks that make up the file (or set of files)” and using them to “reconstruct a file.” *Id.*, 1:25-32. The alternative to encryption and licensing checks however—an absence of data security—was also highly undesirable. *Id.*, 1:33-36.

The inventor of the '686 patent devised an elegant solution to this problem by providing data security without the complexity and encumbrances of prior art methods. As described and claimed in the '686 patent, this solution requires the use of a mapping function that is applied to data block numbers associated with a file. The mapping function, which is described in the specification (*see, e.g.*, EX1001, 3:50-4:24) provides “mapped data block numbers” that are “addresses of data of the file in a storage device.” EX1001, Cl. 1. Importantly, “[a] user who does not have the block distribution engine 140 and mapping 145 installed in his/her computer will not be able to read the data blocks $f(X1)$ - $f(X4)$ for the file 205 by simply accessing the inode 210 in the storage device 125 due to the mapping function $f(x)$.” *Id.*, 4:25-29. Consequently, “[a]n unauthorized user will not be able to obtain the data for a file 205 by simply accessing the inode 210 of the file 205 and copying the data blocks 212, because the actual data of the file 205 are stored in the mapped data blocks 215.” *Id.*, 4:34-38. The method of the '686 patent thus provides data security without the drawbacks of prior art methods such as traditional encryption or licensing.

1. The Claims of the '686 Patent

The four challenged independent claims of the '686 Patent are set forth below. For convenience, Patent Owner uses the same claim limitation identification convention used by Petitioners in the Petition.

Independent Claim 1

[1.pre] A method of providing data security for use with a file system, the method comprising:

[1.1.1] applying a mapping function to data block numbers that are associated with a file;

[1.1.2] wherein the data block numbers are contained in an index node associated with said file; and

[1.2.1] obtaining mapped data block numbers after applying the mapping Function,

[1.2.2] wherein the mapped data block numbers are addresses of data of the file in a storage device.

Independent Claim 9

[9.pre] An apparatus for providing data security for use with a file system, the apparatus comprising:

[9.1.1] a block distribution engine configured to apply a mapping function to data block numbers that are associated with a file;

[9.1.2] wherein the data block numbers are contained in an index node associated with said file, and;

[9.1.3] obtain mapped data block numbers after applying the mapping function;

[9.2] wherein the mapped data block numbers are addresses of data of the file in a storage device.

Independent Claim 17

[17.pre] An apparatus for providing data security for use with a file system, the apparatus comprising:

[17.1.1] means for applying a mapping function to data block numbers that are associated with a file;

[17.1.2] wherein the data block numbers are contained in an index node associated with said file; and

[17.2.1] means for obtaining mapped data block numbers after applying the mapping function,

[17.2.2] wherein the mapped data block numbers are addresses of data of the file in a storage device.

Independent Claim 18

[18.1] a machine-readable medium having stored thereon instructions to:

[18.2.1] apply a mapping function to data block numbers that are associated with a file,

[18.2.2] wherein the data block numbers are contained in an index node associated with said file; and

[18.3.1] obtain mapped data block numbers after applying the mapping

function,

[18.3.2] wherein the mapped data block numbers are addresses of data of the file in a storage device.

C. Overview of the Prior Art

1. Madany (EX1004)¹

Madany, by its own terms, is directed to “[a] method, apparatus, and computer-usable medium for compressing data in a file system utilizing the concept of ‘holes.’” EX1004, Abstract; *see also id.* at 1:6-8 (“[T]he present invention relates to on-line data compression at the file system level utilizing the concept of files with ‘holes.’”). As explained in Madany, “some applications write data randomly to any offset in the file” and as a result generate block addresses that contain no data. EX1004, 2:52-59. As Madany further explains, “[s]ince it is wasteful to store a physical block for a corresponding logical block that has never been written (i.e. full of zeros), one common technique employed by some file systems is to avoid the actual allocation for such blocks.” *Id.*, 2:60-63. Instead, “[t]he file system designates a special physical block address, usually 0, that represents the address of a special, but non-existent, physical block that is full of zeroes.” *Id.*, 2:63-66. “This special physical block is called a ‘hole.’” *Id.*, 2:66-67.

¹ “Madany” refers to U.S. Pat. No. 5,774,715.

Madany proposed a novel purpose for these otherwise unutilized holes—facilitation of data compression. EX1004, 3:46-48 (“An embodiment of the present invention relates to a method and apparatus for compressing data in a file system utilizing the concept of ‘holes’.”). Specifically, Madany utilizes holes to convey information about the particular type of compression method used. *See, e.g.*, EX1004, 3:54-57 (“In some embodiments, the holes are used to indicate not only that a cluster has been compressed, **but also to identify the compression algorithm used to compress that cluster.**”).² This use of holes to identify the compression method facilitates the use of multiple compression algorithms:

In one aspect of the invention, different clusters in a file may contain different types of holes. This allows different compression algorithms to be applied within a given file. Also, files in a file system may be compressed using different types of holes. This allows multiple compression algorithms to be used in the file system on a per file basis.

EX1004, 4:23-28; *see also id.*, 7:54-65 (“In this way, this special address may indicate not only that this cluster has been compressed, but also that a particular compression algorithm has been used to compress the cluster...[i]n this fashion, it is possible to compress clusters of one file using different compression algorithms.”).

² All emphasis added unless noted.

This use of holes to convey compression data is central to Madany's claimed advance over the prior art:

Various embodiments of the present invention thus extend the concept of files with "holes" to support file system level compression. Accordingly, both compressed and expanded files may co-exist, thus allowing users to take advantage of file system level compression without having to convert the data in an existing storage device all at once, nor having to change the on-disk file system format.

EX1004, 4:29-36.

Madany serves as the primary reference in three of the four references in the Petition. Remarkably, despite this extensive reliance on Madany, neither the Petition nor the accompanying expert declaration address the fact that Madany uses file holes to effectuate the advances in compression that are the central purpose of Madany's system and method. As discussed below, Petitioners' omission of this core aspect of Madany's disclosure is telling, and in some respects unsurprising, because Madany's reliance on holes to convey crucial information regarding compression algorithms renders Petitioners' proposed combination with Locasto untenable.

2. Locasto (EX1005)³

Locasto is a technical paper directed to cryptographic techniques that presents a method for “effectively extend[ing] the key length [of a cryptographic system] without imposing the concomitant processing overhead.” EX1005, 1. According to Locasto’s authors, “our scheme is to spread the ciphertext inside an artificially large file that is seemingly filled with random bits according to a key-driven spreading sequence.” *Id.*

Locasto explains that “[t]o achieve this blending” of real and random data, “camouflage data is generated by the operating system whenever a request is made on an index entry that points to unallocated disk space (essentially a file hole).” *Id.*, 5. According to Locasto, “[i]nstructing the operating system to return consistent random data instead of zero-filled blocks for file holes effectively camouflages the encrypted data.” *Id.*, 7 (Fig. 5 caption). In short, Locasto contemplates that ***calls to file holes will return spurious data*** designed to confuse an attacker and mask the genuine data. As discussed below, this is fundamentally different from and incompatible with the use of file holes to convey key compression data described in Madany.

³ Locasto is titled “ComouflageFS: Increasing the Effective Key Length in Cryptographic Filesystems on the Cheap.”

3. Leffler (EX1006)

Leffler is a 1989 textbook entitled “The Design and Implementation of the 4.3 BSD UNIX Operating System,” which provides information about the history and structure of the Unix operating system as it existed at the time.

D. The IPR Petition’s Alleged Unpatentability Grounds

Grounds	Claims	Statutory Basis	Prior Art
1A	1-2, 5-10, 13-18	§103	Madany, Locasto
1B	1-2, 5-10, 13-18	§103	Madany, Locasto
2	1-18	§103	Madany, Locasto, Leffler
3	1-8	§103	Leffler, Locasto

III. PETITIONERS HAVE NOT SHOWN A REASONABLE LIKELIHOOD OF PREVAILING ON ANY CHALLENGED CLAIMS

A. Petitioners’ Contrary Claim Construction Positions Before Different Tribunals Warrant Denial of the Petition

In the Petition, Petitioners take the position that they are capable of interpreting the challenged claims of the ’686 Patent under the *Phillips* standard. Specifically, while Petitioners do not propose any specific terms for construction, Petitioners only vaguely allege that “[t]he analysis below in §III [*i.e.*, Petitioners’ mapping of the prior art to the claims] proves the Challenged Claims obvious under any interpretation reasonably advanced according to the *Phillips* standard.” Pet. 4-5. And Petitioners’ expert attests to his understanding that “for purposes of my

analysis in this inter partes review proceeding, the terms appearing in the patent claims should be interpreted according to their ‘ordinary and customary meaning.’” EX1003 ¶ 33. In short, although no construction is provided, the Petition hinges on Petitioners’ position that Petitioners and their expert can interpret the claims under the *Phillips* standard and apply the prior art to the interpreted claims accordingly.

In the parallel district court litigation, however, Petitioners take a very different view of their ability to interpret the claims. Specifically, in invalidity contentions that Petitioners served on November 19, 2025, Petitioners allege that ***no fewer than nine terms of the ’686 patent are indefinite***, claiming that each term is “invalid under 35 U.S.C. § 112 because [the term] fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” EX2019, 99-100. These include four terms that appear in (or are substantially identical to terms in) all challenged independent claims. In other words, in this proceeding Petitioners purport to be able to interpret the claims based on the *Phillips* standard with reasonable certainty, and Petitioners in fact implicitly map the claims to the prior art based on those interpretations. At the same time, in the district court litigation, Petitioners argue that the very same claim terms “fail[] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.”

These positions are plainly inconsistent. “If a claim is indefinite, the claim, by definition, cannot be construed.” *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d

1325, 1332 (Fed. Cir. 2010). Consequently, as a general rule a claim cannot be both indefinite and invalidated by the prior art. *Id.* (“a claim cannot be both indefinite and anticipated”). And there is no indication whatsoever that one of the narrow exceptions to this general rule—such as the presence of *IPXL*-type⁴ indefiniteness (*i.e.*, ambiguity as to whether the claim recites a method or apparatus)—is applicable here. *See Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1355 n.5 (Fed. Cir. 2020) (recognizing *IPXL*-type indefiniteness as a limited exception to the general rule that indefiniteness precludes mapping of the claims to the prior art).

On these facts, the Director’s recent informative decision in *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00340, Paper 18 (Director Squires November 5, 2025) (“*Tesla*”) establishes that the Petition should be denied. In *Tesla*, the Director granted Director Review, vacated a grant of institution, and ordered that institution be denied—on the basis of Petitioners’ inconsistent positions regarding indefiniteness. *Tesla*, 2-4. As the Director explained in *Tesla*, “when a petitioner advances different positions before the Board and a district court, that petitioner is *required* to explain why those different positions are warranted.” *Id.*, 3 (emphasis in

⁴ “*IPXL*” refers to *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005).

original). Here the Petition contains no explanation for the contrary claim construction positions.⁵

Further, in *Tesla* “Petitioner argued indefiniteness in the district court and then adopted Patent Owner’s plain and ordinary meaning construction from the district court litigation in its Petition.” *Id.*, 4. The facts are materially similar here. In the Petition, Petitioners applied *Phillips* and effectively adopted plain meaning constructions for all terms, while in district court Petitioners argued that the same claim terms were indefinite. As the Director pointed out in *Tesla*, “[a]llowing a petitioner to advance a claim construction before the Board when that petitioner has made inconsistent indefiniteness arguments in district court fails to further, but instead detracts from, the Office’s goal of providing greater predictability and

⁵ That Petitioners’ invalidity contentions were served after the Petition was filed should not change the analysis. Petitioners presumably were aware of their indefiniteness position when they filed the Petition. Further, the invalidity contentions in which Petitioner FedEx Office and Print Services, Inc. alleged indefiniteness were filed on November 19, 2025—16 days after the Director issued the *Tesla* decision. Thus Petitioners knew or should have known of the implications of their decision to argue indefiniteness in district court.

certainty in the patent system.” *Id.* (citation omitted). Consequently, the Director concluded that “denial of institution is appropriate in this case.” *Id.*

So too here. Petitioners are required by rule to identify “[h]ow the challenged claim is to be construed.” 37 C.F.R. § 42.104(b)(3). Here, however, Petitioners have failed to meet that requirement by conditioning their Petition on a *Phillips* interpretation, while simultaneously arguing that the same claim terms fail to provide reasonable notice of their scope and thus are indefinite. The Petition should be denied on this basis alone.

B. All Madany Grounds Fail Because Madany Teaches Away From the Combination with Locasto and Petitioners’ Have Failed To Articulate Any Credible, Non-Hindsight-Tainted Motivation to Combine

A prior art reference teaches away from a proposed obviousness combination that renders the primary reference “inoperable for its intended purpose” fails because “a person of ordinary skill would...not have been motivated to pursue the combination.” *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App’x 755, 760 (Fed. Cir. 2015); *see also In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (prior art “teaches away from [] proposed modification” when “it would be rendered inoperable for its intended purpose”); *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (affirming teaching away finding if under the proposed combination the primary reference “would be inoperable for its intended

purpose”); *Deere & Co. v. David’s Dozer V-Loc Sys., Inc.*, IPR2024-01442, Paper 10 at 28-30 (PTAB Mar. 18, 2025) (denying institution because primary reference’s operation was “antithetical” to the proposed combination and thus “teaches away from the...proposed combination”).

Here, Petitioners’ proposed Madany-Locasto combination suffers from precisely that defect—the combination would frustrate Madany’s intended purpose of using holes to facilitate data compression. This is because, as discussed above, Madany’s central advance over the prior art was its use of data associated with holes to provide crucial information regarding the type of compression algorithm used. *Supra* § II.C.1. In other words, Madany’s system relies on the data provided in response to system calls to holes being genuine, because that data provides critical information regarding compression algorithms.

Locasto, in contrast, uses holes in a different and completely contrary way. As Petitioners state in the Petition, it uses its spreading function to “randomly distribute the real file data throughout a large address space.” Pet. 17 (ellipses and brackets removed; quoting EX1005, 4). This “large address space” contains numerous file holes that—rather than returning genuine data—“return consistent **random data** instead of zero-filled blocks” to “effectively camouflage[] the

encrypted data.”⁶ EX1005, 7. In short, Locasto’s mapping function’s principle of operation is to fill file holes with spurious data in order to mask the genuine data.

This principle of operation is plainly incompatible with Madany’s reliance on file holes to provide genuine data regarding compression algorithms to facilitate compression at the file level. Yet Locasto’s mapping function is precisely what Petitioners’ combination proposes to graft on to Madany’s system. *See* Pet. 17 (“As shown in the visual aid above, ***the Madany-Locasto Combination applies Locasto’s mapping function*** (map) to the logical block numbers (lbn) in Madany’s mapping table and the bits of a spreading seed to create an index from which the physical block number (pbn) is obtained.”). In short, application of Locasto’s mapping function to Madany’s system would destroy Madany’s ability to use file holes to provide information regarding compression algorithms—the very mechanism that Madany uses to provide its claimed advance of prior art compression techniques. Madany thus plainly teaches away from Petitioners’ proposed combination since no POSITA would be motivated to alter Madany in a way that destroys its core utility. *See Gordon*, 733 F.2d 900 at 902 (prior art “teaches away from [] proposed modification” when “it would be rendered inoperable for its intended purpose”); *Tec*

⁶ All emphasis added unless otherwise noted.

Air, 192 F.3d at 1360 (citing *Gordon* for same proposition); *Deere*, IPR2024-01442, Paper 10 at 28-30.

Nothing in the Petition even attempts to explain away this glaring defect in Petitioners’ core combination. Instead, Petitioners and their expert studiously ignore Madany’s purpose and the way in which it uses file holes to facilitate compression. Never once do Petitioners or their expert address—much less articulate any credible explanation for—how Madany’s system could possibly work as intended in conjunction with Locasto’s mapping function, which relies on providing false file hole data to camouflage genuine data.

Instead, Petitioners offer conclusory, boilerplate, and hindsight-tainted motivations to combine. For example, Petitioners assert that “the POSITA would have understood the compatibility of Locasto’s teachings with Madany, such that Locasto’s technical improvements could be implemented while preserving the fundamental aspects of Madany’s disclosure.” Pet., 17. But Petitioners’ only justification for this assertion is that “Madany describes Unix file systems” and “Locasto describes the ‘Linux Ext2fs’ file system,” and “POSITA would have understood that Linux is a Unix-like operating system.” *Id.* (citing EX1004, 1:45-50, 3:14-18, 5:41-42; EX1005, 3, 8).

This misses the point entirely. The mere fact that both references may contemplate use of a “Unix-like operating system” does not support Petitioners’

assertion that “Locasto’s technical improvements could be implemented while preserving the fundamental aspects of Madany’s disclosure.” Nothing in Petitioners’ conclusory analysis even begins to explain how Madany’s reliance on ***genuine*** hole-generated data can be reconciled with Locasto’s reliance on populating holes with ***false*** data.

Petitioners’ citations to paragraph 68 the Declaration of Dr. Nenad Medvidovic (EX1003, “Medvidovic Declaration”) do not move the needle even slightly. Instead, the corresponding paragraph of the Medvidovic Declaration begins by repeating the attorney argument in the Petition verbatim. EX1003, ¶68. Then Dr. Medvidovic simply adds a few citations to patents that characterize Linux as “Unix-like”—a point that is effectively irrelevant to the crucial question of whether the proposed Madany-Locasto combination would retain Madany’s core technical characteristics. Neither the Medvidovic Declaration nor the Petition ever engage with the dispositive issue of how Madany’s use of file holes could be “preserved” when combined with Locasto’s mapping function—because it cannot.

All the Petition and Medvidovic Declaration do offer are generic, hindsight-based motivations to combine that almost uniformly relate to the desirability of data security ***generally*** rather than the desirability of the specific algorithm in Locasto that Petitioners apply to Madany. See Pet. 18-21; EX1003 ¶¶72-78. These generalized motivations to use some type of security or encryption provide no basis

for concluding that a POSITA would be motivated to use the ***specific, purportedly novel encryption method disclosed in Locasto***, as opposed to one of the many other alternatives available. This is insufficient as a matter of law. *See TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1360 (Fed. Cir. 2019) (“We rejected [the expert’s] testimony because it failed to explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does*. We explained that knowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references.” (citation modified, emphasis in original)).

The only portion of Petitioners’ purported motivation to combine that focuses on Locasto’s specific approach to encryption touts the benefits of “Locasto’s balance of security and performance” (Pet., 19) but wholly ignores its glaring drawback—that Locasto’s mapping function would render Madany unfit for its intended purpose of facilitating compression. Further, Petitioners ignore that Locasto itself repeatedly refers to its system as a “prototype implementation” (EX1005, 1 11) and identifies substantial “Future Work” that remained to be done. EX1005, 14. For example, Locasto identifies “two primary issues to be addressed: preventing both collisions in the spreading schedule and an attacker’s discernment of camouflage data.” *Id.* Locasto does not identify a clear solution to either of these issues.

Regarding the former, Locasto suggests the use of a “variable length block cipher” and notes the need for longer length ciphers, but acknowledges that “length of 28 bits in our implementation is an architecture and operating system limitation.” *Id.* As to the latter, Locasto acknowledges a need to “to create some mechanism whereby the i_camouflaged field is updated at some rate to ‘stir’ the entropy source of the camouflage data” in order to “prevent an attacker from knowing which data was actually camouflage[d]”—but provides no such mechanism. *Id.* Petitioners present no evidence that this critical operational flaw was resolved as of the priority date of the ’686 patent, or that Locasto’s system was otherwise adopted in the art.

Consequently, even if Locasto did not already affirmatively teach away from the combination with Madany for the reasons stated above (it does), the combination would still fail because Petitioners have not shown a reasonable likelihood of establishing that POSITA would be motivated to use—and would have a reasonable expectation of success in doing so—Locasto’s unfinished “prototype implementation.” Petitioners’ contention that the combination merely involves “application of a known technique (Locasto’s data encryption)” (Pet. 20) is thus contradicted by Locasto itself.

Accordingly, for all foregoing reasons, the Petition fails to provide a legally sufficient basis for concluding that a POSITA would have a motivation to combine Madany and Locasto with a reasonable expectation of success. All grounds that rely

on that combination (Grounds 1A, 1B, and 2) fail for that reason. Further, given that grounds that rely on the Madany-Locasto combination dominate the Petition (and are the only grounds that reach all challenged claims) the failure of that combination is sufficient reason to deny the Petition in its entirety. *See Salem Fabrication Techs. Grp., Inc. v. Uniglass Eng'g Oy*, IPR2022-01517, Paper 9 at 24-25 (PTAB, March 22, 2023) (discretionarily denying petition in entirety because Petitioner had failed to show reasonable likelihood of success as to majority of grounds).

C. Ground Three Similarly Lacks Any Credible Motivation to Combine With a Reasonable Expectation of Success

Ground 3, in which Petitioners drop Madany as a primary reference and substitute Leffler—a general textbook regarding the Unix operating system—in combination with Locasto, likewise lacks any credible motivation to combine. Instead, Petitioners and Dr. Medvidovic repeat the same, conclusory motivations to combine that focus on encryption and data security generally, rather than the specific method disclosed in Locasto. *See* Pet. 79-81; EX1003 ¶¶ 233-238. This is insufficient as a matter of law. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (“The mere fact that the prior art may be modified in the manner suggested . . . does not make the modification obvious unless the prior art suggested the desirability of the modification.”). Indeed, there is no apparent reason to cherry pick the mapping function from Locasto—as opposed one of the numerous, less complicated

encryption methods available—beyond the fact that the claims of the '686 patent require a “mapping function.” Such transparent hindsight bias merits denial. See *American Airlines, Inc. and Southwest Airlines Co., v. Intellectual Ventures II LLC*, IPR2025-00931, Paper 11 at 47 (PTAB November 21, 2025) (denying institution in part because “[w]ithout the challenged claims as a guide, we are not persuaded an ordinarily skill artisan at the critical time would have combined the prior art as suggested by Petitioner”); *Fritch*, 972 F.2 at 1266 (“It is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.”).

As to reasonable expectation of success, the Petition’s contentions (Pet., 82) are even more conclusory and—as discussed above—are contradicted by Locasto’s acknowledgment that its disclosed system was a mere “prototype” with multiple significant technical issues remaining unresolved.

D. The Petition Should Be Denied Because it Relies on Unreliable Expert Testimony

The example cited above of Dr. Medvidovic’s declaration being substantially identical to the Petition is not an isolated instance. To the contrary, Dr. Medvidovic parrots the Petition repeatedly. To cite but a few highly material examples, his summaries of Madany and Locasto are effectively indistinguishable from the Petition, and his summary of the Madany-Locasto Combination repeats huge

swathes of the Petition verbatim with minimal additional citations. *Compare* Pet. 5-12 *with* EX1003 ¶¶ 51-65 and Pet. 14-18 *with* EX1003 ¶¶ 66-71. The PTAB has harshly criticized such brazen parroting of the Petition by expert declarants, and has denied institution on that basis. *See Xerox Corp. v. Bytemark Inc.*, IPR2022-00624, Paper 12, at 2 (PTAB Feb. 10, 2023) (designated precedential) (denying institution when expert declaration merely parroted petition and “was conclusory and added little to the assertions the testimony was offered to support); *TikTok Inc. v. NTech Properties, Inc.*, IPR2024-01339, Paper 9 (PTAB Feb. 25, 2025) (giving “little or no weight” to the testimony of the petitioner’s expert as the declaration was wholly “conclusory,” “repeat[ing], almost verbatim, the language in the Petition without any further explanation or supporting reasoning or evidence”); *American Airlines, Inc. et al. v. Intellectual Ventures I LLC*, IPR2025-01055, Paper 11 at 18 (PTAB November 21, 2025) (“Petitioner’s only cited support for this conclusory statement is testimony of its own declarant, Dr. Easttom, which merely repeats the conclusory statement verbatim, without any explanation or additional citations to evidence. We give such conclusory, unsupported assertions by Petitioner’s declarant little or no weight.”). The Director should do the same here.

IV. CONCLUSION

For all of the reasons explained in the Discretionary Denial Brief and this POPR, Patent Owner respectfully submits that the Director deny institution of the Petition.

Dated: December 5, 2025

Respectfully submitted,

/Richard J. Botos/

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Counsel for Patent Owner

CERTIFICATE OF SERVICE

I hereby certify that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE TO THE PETITION and Exhibit 2019 were served on December 5, 2025, via electronic mail upon counsel of record for Petitioner at the following email addresses:

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Kenneth W. Darby, Jr.
David Hoffman

Dated: December 5, 2025

/Richard J. Botos /

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Counsel for Patent Owner

CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE TO THE PETITION consists of 5317 words, excluding the table of contents, certificate of service, this certificate of compliance, or table of exhibits. The POPR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare this paper (Microsoft Word).

Dated: December 5, 2025

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