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Paper 31
Date: July 11, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

UMBRA TECHNOLOGIES LTD.,
Patent Owner.

IPR2024-00344
Patent 11,146,632 B2

Before ST. JOHN COURTENAY III, MICHAEL R. ZECHER, and GREGG I. ANDERSON, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

In this *inter partes* review, Petitioner, Cisco Systems, Inc. ("Petitioner") filed a Petition (Paper 1, "Pet."), along with the Declaration of A.L. Narasimha Reddy, Ph.D. (Ex. 1003), challenging the patentability of claims 1–7 ("the challenged claims") of U.S. Patent No. 11,146,632 B2 (Ex. 1001, "the '632 patent"), owned by Umbra Technologies Ltd., ("Patent Owner"). Patent Owner filed a Preliminary Response (Paper 6) and, with our authorization (Paper 9), Petitioner filed a Preliminary Reply (Paper 10) and Patent Owner filed a Preliminary Sur-reply (Paper 11, "Prelim. Sur-reply").

On July 16, 2024, taking into account the preliminary record, we instituted an *inter partes* review of the challenged claims 1–7 of the '632 patent pursuant to 35 U.S.C. § 314. Paper 14 ("Dec. on Inst.").

After institution, Patent Owner filed a Patent Owner Response to oppose the Petition (Paper 24 ("PO Resp.")), along with the Declaration of Micah Beck, Ph.D. (Ex. 2011). Petitioner filed a Reply to the Patent Owner Response. Paper 25 ("Pet. Reply"). Patent Owner filed a Sur-reply to the Reply. Paper 26 ("Sur-reply"). The parties presented oral arguments at a hearing on Tuesday, April 22, 2025, and a transcript of the hearing has been entered into the record (Paper 30, "Tr.").

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–7 of the '632 patent. On the complete record, we determine that Petitioner has shown by a preponderance of the evidence that all claims 1–7 are unpatentable.

A. Real Parties in Interest

Petitioner identifies itself, Cisco Systems, Inc., as the real party-in-interest. Pet. 63. Patent Owner identifies itself, Umbra Technologies Ltd., as the real party-in-interest. Paper 19, 2 ("Patent Owner's Updated Mandatory Notice Information under 37 C.F.R. § 42.8(a)(3)").

B. Related Matters

The parties identify the following related district court cases involving the '632 patent: *Umbra Technologies Ltd. (UK) v. Cisco Systems, Inc.*, No. 1:23-cv-00903-DII (W.D. Tex.); *Umbra Technologies Ltd. (UK) v. VMware, Inc.*, No. 1:23-cv-00904-DII (W. D. Tex.). Pet. 63; Paper 19, 2.

C. The '632 patent

The '632 patent is entitled "Data Beacon Pulser(s) Powered by Information Slingshot," and "relates generally to networks, and more particularly, to the topology, configuration and operation of a data beacon pulser (DBP)." Ex. 1001, code (54), 1:29–31 (capitalization omitted). According to the '632 patent, a "DBP offers fast, efficient, and dependable one-way casting/multi-casting of information globally." *Id.* at 1:31–33.

The '632 patent describes drawbacks associated with prior art technologies, such as that "Internet Protocol (IP) over Ethernet becomes extremely inefficient over long distances and its utility decreases when there is congestion, poor routing, slower speeds, peering between different markets, or the presence of other events." Ex. 1001, 3:40–44. However, the '632 patent discloses that its purported invention "overcomes the distance issues associated with [Transmission Control Protocol/Internet Protocol ("TCP/IP")] and [User Datagram Protocol/Internet Protocol ("UDP/IP")] because the underlying protocol of Slingshot powering DBP does not have the same congestion and inefficiencies problems over distance." *Id.* at 5:21–

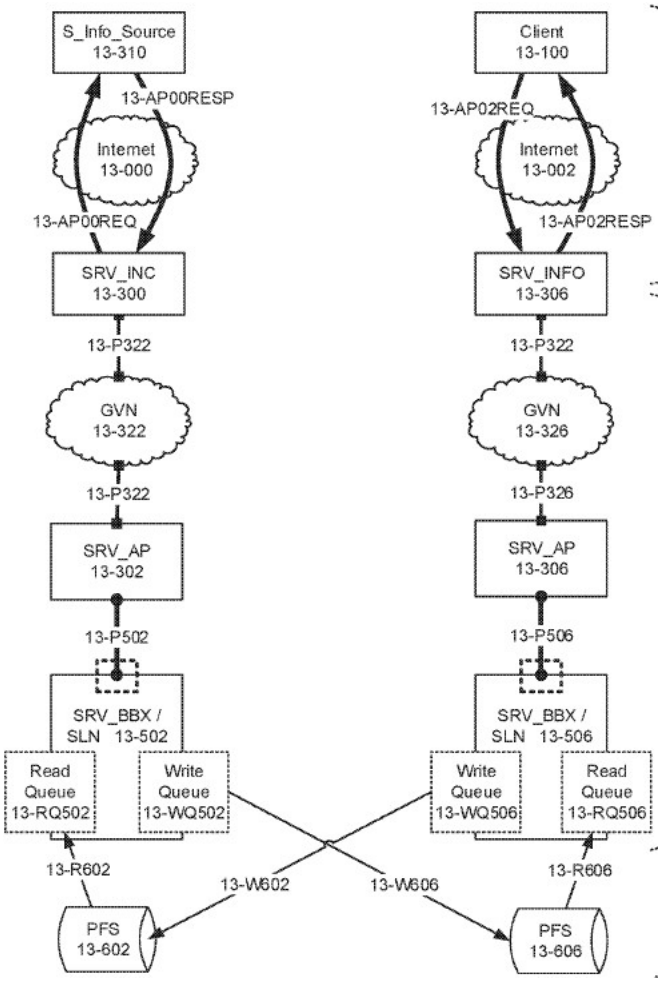
24. The '632 patent describes the prior art problem of UDP/IP dropping packets without the receiver or sender "being aware of this loss," while the "Data Beacon Pulser addresses this by offering reliability and speed superior to UDP/IP and TCP/IP over distance." *Id.* at 5:28–32. More specifically, the '632 patent discloses that "DBP provides one-way Beacon transfer from source to target as regular, constant flashes/pulses [which] address the limitations of client-server (C-S) or peer-to-peer (P2P) round-trip times." *Id.* at 6:1–4.

The '632 patent discloses that "the system can include a first node and a second node." Ex. 1001, 7:30–32.

> Each node includes a read queue, a write queue and a parallel file system. Data is written from the write queue on the first node to the parallel file system on the second node and from the write queue on the second node to the parallel file system on the first node. The read queue on each node receives data from the parallel file system on the node itself.

Id. at 7:32–39.

Figure 13 of the '632 patent, reproduced below, illustrates an example of the DBP mechanism framework and flow, which shows "how DBP can utilize Slingshot to make information from a source region 13-310 available to a client 13-100 in another region in as timely a fashion as possible." Ex. 1001, 16:8–12.



An exemplary embodiment of the Data Beacon Pulser (DBP) is depicted above in Figure 13 of the '632 patent.

We understand Figure 13 and the associated description in column 16 as providing written description support for the '632 patent claim [1.1] "first node" at S_info_Source 13-310 (upper left), the [1.1] "first read queue" at Read Queue 13-RQ502 (lower left), the [1.1] "first write queue" at 13-WQ502 (lower left), and the [1.1] "first parallel file system" at PFS 13-602 (bottom left).

Similarly, Figure 13 and the associated description in column 16 provide written description support for the '632 patent claim [1.2] "second

node" at Client 13-100 (upper right), the [1.2] "second read queue" at Read Queue 13-RQ506 (lower right), the [1.2] "second write queue" at Write Queue 13-WQ506 (lower right), and the [1.2] "second parallel file system" at PFS 13-606 (bottom right). Lower-left-to-lower-right diagonal dataflow arrow 13-W606 of Figure 13 provides written description support for "wherein" clause [1.3] "wherein the first node writes first data from the first write queue to the second parallel file system"; and lower-right diagonal (up) dataflow arrow 13-R606 of Figure 13 provides written description support for "wherein" clause [1.4] "wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue."

The '632 patent states that the "technology powering a data beacon pulser (DBP) is based on slingshot technology as described in U.S. Provisional Application Nos. 62/296,257 and 62/266,060 and in PCT US/16/65856 entitled 'SYSTEM AND METHOD FOR INFORMATION SLINGSHOT OVER A NETWORK TAPESTRY AND GRANULARITY OF A TICK.'" Ex. 1001, 1:41–46.

D. Challenged Claims

Petitioner challenges claims 1–7 of the '632 patent. Pet. 1, 17. Claim 1, the sole independent claim, is illustrative of the challenged claims, and recites the following (Petitioner's bracketing and identifiers added):

> [1.0] A network system for providing data beacons, comprising:
>
> [1.1] a first node comprising a first read queue, a first write queue, and a first parallel file system;

> [1.2] a second node comprising a second read queue, a second write queue, and a second parallel file system;
>
> [1.3] wherein the first node writes first data from the first write queue to the second parallel file system; and
>
> [1.4] wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue.

Ex. 1001, 23:2–12.

Claims 2, 3, and 7 depend directly from claim 1. Claim 4 depends directly from claim 3, and each of claims 5 and 6 depends directly from claim 4.

E. Asserted Prior Art Reference

Petitioner relies upon the following prior art reference:

Name[1]	Reference	Filing, Issue, and/or Publication Date	Exhibit
Agarwala	US 9,582,421 B1 ("the '421 patent")	filed Dec. 19, 2013, issued Feb. 28, 2017	1005

F. Asserted Sole Ground of Unpatentability

Claims Challenged	35 U.S.C. §	Reference
1–7	103[2]	Agarwala

[1] For clarity and ease of reference, we only list the first named inventor.

[2] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Consistent with our analysis *infra*, we have determined Agarwala qualifies as prior art to the '632 patent under AIA 35 U.S.C. § 102(a)(2), and

II. ANALYSIS

A. Claim Construction

In interpreting the claims of the '632 patent, we "us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b)." *See* 37 C.F.R. § 42.100(b) (2023). Accordingly, our claim construction standard is the same as that of a district court. *See id.* Under the standard applied by district courts, claim terms are generally given their plain and ordinary meaning, as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). "There are only two exceptions to this general rule: (1) when a patentee sets out a definition and acts as his own lexicographer, or (2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

1. Claim 1 Preamble Term "data beacons"

Regarding claim 1 of the '632 patent, Patent Owner contends "[t]he intrinsic evidence shows that the term 'data beacon' refers to a signal

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Agarwala incorporates by reference the entirety of its '685 provisional application (US Prov. Appl. 61/739,685, filed Dec. 19, 2012, Ex. 1004), as persuasively argued by Petitioner in its Petition and Reply. *See* Pet. Reply 5 ("[T]he Petition does not assert that the '685 Provisional Application is **itself** prior art. Instead, its disclosure is part of the '421 Patent, which is prior art under §102(a)(2)(AIA), as expressly stated in the Petition (Pet. 18) and confirmed in MPEP [§] 2127 (I).").

delivered via one-way casting or one-way multi-casting (the latter of which is simply one-way casting to multiple recipients, as explained in Ex. 2002[3]).” PO Resp. 20.

Petitioner disagrees with Patent Owner’s proposed construction, and contends “[t]he term ‘*data beacons*’ recited in the preamble is an intended use and not limiting.” Pet. Reply 10.

We construe claim terms only as relevant to the parties’ contentions and only to the extent necessary to resolve the issues in dispute. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Here, given the dispute between the parties, we find it necessary to do claim construction for the claim 1 preamble language “for providing ***data beacons***” (emphasis added).

Our reviewing court provides applicable guidance: “whether to treat a preamble as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006) (quoting *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003)).

2. The Intrinsic Evidence

“In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.”

[3] Yi Qin, et al. “Mobility Weakens the Distinction Between Multicast and Unicast,” IEEE/ACM Transaction on Networking, Vol. 24, No. 3 (June 2016).

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17); *see also David Netzer Consulting Eng'r LLC v. Shell Oil Co*., 824 F.3d 989, 993–94 (Fed. Cir. 2016); *Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973, 977 (Fed. Cir. 2014). We apply this legal guidance to the claim construction dispute between the parties, *infra*.

a. The'632 Patent Claim Language

Beginning with the claim language itself, and as noted in our Decision on Institution, the plural term "data beacons" is only recited only in the preamble of claim 1. Ex. 1001, 23: 2–3. Remaining dependent claims 2–7 are silent regarding any mention of the term "data beacons" or "data beacon." *See* Dec. on Inst. 13. Nor does any dependent claim further limit the scope of the preamble term "data beacons" to inform the artisan of its intended scope under the doctrine of claim differentiation.[4]

As noted above, Patent Owner contends "[t]he intrinsic evidence shows that the term 'data beacon' refers to ***a signal*** delivered via one-way casting or one-way multi-casting (the latter of which is simply one-way casting to multiple recipients, as explained in Ex. 2002)." PO Resp. 20 (emphasis added).

[4] *Cf. RF Del., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1264 (Fed. Cir. 2003) ("An independent claim usually covers a scope broader than the preferred embodiment, especially if the dependent claims recite the precise scope of the preferred embodiment."); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) ("[W]here the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest.").

Petitioner notes the "term '*data beacons*' is recited in the preamble, but [is] not defined in the specification." Pet. Reply 10. Petitioner further notes the "term '*data beacon'* appears in the '632 [p]atent apart from the term 'pulse(r)', only twice outside of claim 1: (1) in the Abstract: "Systems and methods for providing data beacons are disclosed," and "as identically described, (2) in the Summary of the Disclosure: 'Systems and methods for providing data beacons are disclosed.'" *Id.* (citing Ex. 1001, code (57), 7:30–31)).

Petitioner contends the "body of [c]laim 1 fully and intrinsically sets forth all of the limitations of the claimed invention. In other words, the limitations in the body of [c]laim 1 do not rely upon and derive antecedent basis from the 'data beacons' language recited in the preamble of claim 1." Pet. Reply 10. Petitioner thus concludes the claim 1 "term '***data beacons***' recited in the preamble ***is not a necessary component***," because "it does not provide '***essential structure*** or steps' and it is not 'necessary to give life, meaning, and vitality to the claim.'" *Id.* (emphases added) (quoting *Catalina Mktg. Int'l Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)).

As noted in our Decision on Institution, we find no explicit antecedent basis reference from any language in the body of claim 1 to the preamble term "data beacons" (e.g., "said data beacons" or "the data beacons"). Dec. on Inst. 14–15. Nor do we find any antecedent basis reference from any language in dependent claims 2–7 to the claim 1 preamble language "data beacons." [5]

[5] *Cf. Bicon*, 441 F.3d at 952 ("[W]hen the limitations in the body of the claim 'rely upon and derive antecedent basis from the preamble, then the

Because the limitations in the body of claim 1 do not rely upon and derive antecedent basis from the "data beacons" language recited in the preamble of claim 1, we find Patent Owner has not established that the preamble term "data beacons" is a ***necessary component*** of the claimed invention. Thus, the U.S. Court of Appeals for the Federal Circuit's "antecedent basis" preamble case law weighs strongly in favor of Petitioner (i.e., "[t]he term 'data beacons' recited in the preamble is an intended use and not limiting"). *See, e.g.*, *Bicon*, 441 F.3d at 952.

Nor do we conclude the "data beacons" intended to be provided by the preamble [1.0] "network system" are ***essential structure*** that is necessary to give life, meaning, and vitality to the claim.[6] As noted above, Patent Owner reaffirms that "the proper interpretation of 'data beacon' is a ***signal*** delivered via one-way casting or one-way multi-casting. It is fundamental to the claimed systems that the delivery be of such one-way ***signals***." PO Resp. 21 (emphases added).

Patent Owner's admission (*id.*) that the "data beacons" preamble term refers to ***signals*** strongly favors Petitioner's claim construction, because a ***signal*** (comprised of *data* sent on a network) cannot be ***essential structure*** recited in the preamble, and the claims are silent regarding any mention of

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preamble may act as a *necessary component* of the claimed invention.'") (quoting *Eaton Corp. v. Rockwell Int'l Corp*., 323 F.3d 1332, 1339 (Fed. Cir. 2003) (emphasis added).

[6] *Cf. Catalina Mktg.*, 289 F.3d at 808 (If a preamble "recites ***essential structure*** or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim," then the preamble can limit the scope of a claim. (emphasis added)).

the "data beacon pulser" (structure) argued by Patent Owner that is described in the '632 patent specification. *See* PO Resp. 20 (emphases added).

b. The '632 Patent's Specification

Regarding the intrinsic evidence consisting of the '632 patent's written description, Patent Owner notes that the question of "[w]hether to treat a preamble as a limitation is a determination 'resolved only on review of the entire[] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.'" PO Resp. 23 (quoting *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)).

Patent Owner notes the "Background of the Invention section of the ['632] patent" describes a data beacon pulser (DBP):

> The present disclosure relates generally to networks, and more particularly, to the topology, configuration and operation of a data beacon pulser (DBP). A DBP offers fast, efficient, and dependable oneway casting/multi-casting of information globally. A DBP can be utilized for transmission of financial data, news feeds, seismic data, and many other applications where dependable and accurate near wire speed dissemination of rapidly changing information is time critical.

PO Resp. 20 (quoting Ex. 1001, 1:29–37). Patent Owner argues that "[o]ne of the key benefits of using a data beacon slingshot is that it does not require responses or acknowledgements, which are required for common communication protocols such as TCP over IP." *Id.* (citing Ex. 1001, 2:54–57; 4:6–19; 6:1–5). Patent Owner notes "[t]he specification explains that the elimination of the overhead and latency associated with TCP/IP [acknowledgement] packets (or other responsive communications required in prior art two-way communication protocols) provides substantial

performance benefits over longer distances. *Id.* (citing Ex. 1001, 6:29–42).

But we note the "data beacon pulser" described in the'632 patent specification is not the same as the claim 1 preamble recitation of the term "data beacons." In the additional briefing we granted prior to our Decision on Institution (Dec. on Inst. 16, n.16), Patent Owner clarified that "the *pulser* is the apparatus and the *data beacon* is the signal sent by the apparatus." Prelim. Sur-reply 1. In the Patent Owner Response, Patent Owner again confirms that the "data beacons" recited in the preamble of claim 1 are signals: "the proper interpretation of 'data beacon' is a ***signal*** delivered via one-way casting or one-way multi-casting. It is fundamental to the claimed systems that the delivery be of such one-way ***signals***." PO Resp. 21 (emphasis added).

But, as emphasized by Petitioner above, the literal preamble term "data beacons" is not defined in the '632 patent's specification and is only mentioned twice in the '632 patent outside of claim 1—once in the Abstract and again in the "Summary of Disclosure" section. Ex. 1001, code (57), 7:30–31. We agree with Petitioner that these are the only two mentions of the preamble term "data beacons" in the '632 patent specification, and they provide little, if any, guidance regarding this term's scope and meaning.

We find the intrinsic evidence consisting of the '632 patent's written description weighs in favor of Petitioner: i.e., "[t]he term 'data beacons' recited in the preamble is an intended use and not limiting."

c. The '632 Patent Prosecution History

Regarding the prosecution history, Petitioner notes that "[t]he '632 [p]atent issued from U.S. Application No. 16/095,908 (the '908 Application), filed on October 23, 2018 as a U.S. national stage application

of International Application No. PCT/IB2017/000580, filed April 26, 2017." Pet. 9. Petitioner notes "[t]he '908 Application included claims 1–7 at filing, including one independent claim." *Id.* (citing Ex. 1002, 2[7]).

Petitioner emphasizes that the "application [that issued as the '632 patent] was allowed in a first action allowance, with the Examiner acknowledging the claimed 'non-complex subject matter' but nonetheless focusing on the unclaimed—but disclosed in the specification—concept of 'data beacon ***pulser***' as lacking in the art considered by the Examiner." Pet. 9–10. Petitioner further block quotes the Examiner's Statement of Reasons for Allowance. *Id.* at 10 (citing Ex. 1002, 9–10) (which we have reproduced from Patent Owner's Response at page 26 below).

In its Patent Owner Response, Patent Owner notes that, "[d]uring prosecution, the Examiner cited several references which relate generally to data beacons. In the notice of allowance, the Examiner stated that

> [a] broader search for 'data beacon' in the same paragraph as variations of the term 'pulse' yielded the reference, Crinon et al. (US 20120196646 A1) and related references by the same inventors.

PO Resp. 21 (citing Ex. 1002, 10). Patent Owner further notes "[t]he 'beacon' described in Crinon is a one-way broadcast." *Id.* (citing Ex. 2003 ¶ 56). Patent Owner additionally notes that "[t]wo other references cited by the Examiner disclose beacons, and each of those references describe one-way information broadcasts." *Id.* (citing Exs. 2004, 2005).

Patent Owner contends that "[t]he prosecution history is consistent with the specification's focus on the data beacons recited in the preamble as

[7] All references to the page numbers in the '632 patent's prosecution history refer to the page numbers inserted by Petitioner in the bottom, right-hand corner on each page of Exhibit 1002.

being the disclosed invention." PO Resp. 24. Patent Owner notes that, "[f]or example, in a first action notice of allowance, the Examiner explained that '[a]lthough independent claim 1 appears at first to be somewhat non-complex subject matter, it was found to be novel in the art.'" *Id.* (citing Ex. 1002, 9).

Patent Owner concludes that, "like the specification, the prosecution highlights the fact that the data beacons recited in the preamble are the basis of the invention." PO Resp. 25. Patent Owner argues that, "[t]o that end, the Examiner was exactly correct in allowing the claims on the basis of the preamble's recitation of data beacons. Indeed, reliance on the preamble in the notice of allowance is of particular importance." *Id.* (citing Manual of Patent Examination Procedure ("MPEP") § 1302.14 ("The examiner's statement of reasons for allowance is an important source of prosecution history.")). Patent Owner notes that, "[w]hen there is an allowance in the first action, the notice of allowance may embody the entirety of the 'back-and-forth' between the applicant and the examiner." *Id.*

Patent Owner reproduces the "Examiner's Statement of Reasons for Allowance" in its Patent Owner Response:

> Although independent [c]laim 1 appears at first to be somewhat non-complex subject matter, it was found to be novel in the art. Examiner was unable to find any prior art references that teach the subject matter, which recites as follows: [entire claim including preamble].

PO Resp. 26 (quoting Ex. 1002, 9–10).

Patent Owner further refers to the Examiner's Statement of Reasons for Allowance:

> In addition, a search for the term "data beacon pulser," which is disclosed in the specification as the technology upon which the invention is based, was not found in any prior art other

> than that of the inventor. A broader search for "data beacon" in the same paragraph as variations of the term "pulse" yielded the reference, Crinon et al. (US 20120196646 A1) and related references by the same inventors. *However, those references deal with mobile networks, and do not disclose any information about read queues, write queues, or parallel file systems.* Examiner also reviewed the prior art references provided as being relevant in the PCT International Search Report, but did not find that the references teach the claimed subject matter with the required level of specificity.

PO Resp. 26 (quoting Ex. 1002, 10) (emphasis added).

Petitioner does not further address Patent Owner's arguments regarding the prosecution history of the '632 patent in its Reply. *See generally* Pet. Reply.

We note that the Federal Circuit has held that the unilateral remarks by the Patent Examiner when stating the reasons for allowance of a claim do not create a clear and unambiguous disavowal of claim scope such as would give rise to prosecution history estoppel, i.e., a narrowing of claim scope by the Examiner prior to allowance:

> This court has recognized that an Examiner's Statement of Reasons for Allowance "***will not necessarily limit a claim***." *ACCO Brands, Inc. v. Micro Sec. Devices, Inc.,* 346 F.3d 1075, 1079 (Fed. Cir. 2003). Consequently, an applicant's silence regarding statements made by the examiner during prosecution, without more, cannot amount to a "clear and unmistakable disavowal" of claim scope. *See* [*3M Innovative Props. Co. v. Avery Dennison Corp.,* 350 F.3d 1365, 1373–74 (Fed. Cir. 2003)] ("Prosecution history ... cannot be used to limit the scope of a claim unless the *applicant* took a position before the [Patent and Trademark Office.") citing] *Schwing GmbH v. Putzmeister Aktiengesellschaft,* 305 F.3d 1318, 1324–25 (Fed. Cir. 2002) (emphasis added). An applicant's silence in response to an examiner's characterization of a claim does not reflect the *applicant's clear and unmistakable acquiescence* to that characterization if the claim is eventually allowed on grounds

> unrelated to the examiner's unrebutted characterization."). After all, the applicant has disavowed nothing.

Salazar v. Procter & Gamble Co., 414 F.3d 1342, 1345 (Fed. Cir. 2005) (emphasis added).

But compare with Biogen Idec, Inc. v. GlaxoSmithKline LLC, 713 F.3d 1090, 1097 (Fed. Cir. 2013):

> We are mindful that "it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.,* 381 F.3d 1111, 1124 (Fed. Cir. 2004). This case, however, differs markedly from those frequently raising this admonition. Those cases typically involve an *applicant standing silent when confronted by statements made by the examiner during prosecution*, most often in the examiner's Statement of Reasons for Allowance. *See, e.g., Salazar v. Procter & Gamble Co.,* 414 F.3d 1342, 1345–47 (Fed.Cir.2005); *ACCO Brands, Inc. v. Micro Sec. Devices, Inc.,* 346 F.3d 1075, 1079 (Fed.Cir.2003). This case deals not only with *applicants letting stand an examiner's narrow characterization* of a claim term, but also *their adoption of that characterization* to overcome the examiner's enablement rejection. *Thus, the acquiescence cases are inapposite*. *See* [*TorPharm, Inc. v. RanBaxy Pharms., Inc.,* 336 F.3d 1322, 1330 (Fed. Circ. 2003)] ("[T]he public is entitled to equate an inventor's acquiescence to the examiner's narrow view of patentable subject matter with abandonment of the rest.").

The former *Salazar* case is applicable here. Because the '632 patent issued as a ***first action allowance***, there were no back and forth communications with the Examiner and applicant. Ex. 1002, 9–10. Therefore, we accord little weight to the Examiner's stated reasons for allowance because there is no clear and unmistakable acquiescence by the applicant that indicates acceptance of the Examiner's characterization in the stated reasons for allowance.

Moreover, Patent Owner could have amended claim 1 during prosecution to include an antecedent basis reference from the body of claim 1 (e.g., *said data beacons*) back to the preamble term "data beacons," but Patent Owner did not do so. And Petitioner correctly notes above that the literal preamble term "data beacons" is not defined in the '632 patent's specification and is only mentioned twice in the '632 patent outside of claim 1.

Therefore, we accord less weight to Patent Owner's argument that "[t]he prosecution history is consistent with the specification's focus on the data beacons recited in the preamble as being the disclosed invention." PO Resp. 24. Accordingly, we find the prosecution history also favors Petitioner regarding whether "[t]he term 'data beacons' recited in the preamble is an intended use and not limiting."

3. The Extrinsic Evidence

"For the sake of completeness" Patent Owner notes that "the Microsoft Computer Dictionary defines beacon in the context of one network as 'a special frame generated and passed along when a node detects a problem.'" PO Resp. 21 (quoting Ex. 2006). Patent Owner also notes that "PC Magazine defines beacon as '[a] device that transmits a continuous signal, typically via Bluetooth.'" *Id.* (quoting Ex. 2007, definition 3; *see also* definition of "beaconing"). Patent Owner summarizes: "[c]onsidering the foregoing, the proper interpretation of 'data beacon' is a signal delivered via one-way casting or one-way multi-casting. It is fundamental to the claimed systems that the delivery be of such one-way signals." *Id.*

We note that our reviewing court has determined that extrinsic evidence is unlikely to result in a reliable interpretation of patent claim

scope, unless considered in the context of the intrinsic evidence. *Phillips v. AWH Corp*., 415 F.3d 1303, 1319 (Fed. Cir. 2005) (en banc). The court in *Phillips* stated: "different dictionaries may contain somewhat different sets of definitions for the same words. A claim should not rise or fall based upon the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification, to rely on one dictionary rather than another." *Id.* at 1322.

Here, we accept Patent Owner's extrinsic evidence only to the extent that it corroborates the intrinsic evidence, i.e., that a data beacon is a signal consisting of data that is transmitted on a wired or wireless network. We find the extrinsic evidence: (1) otherwise does not overcome the intrinsic evidence, which indicates that the term "data beacons" recited in the preamble is an intended use and not limiting; and (2) fails to add specific or essential structure to the preamble of claim 1.

4. Claim Construction Conclusion for the Preamble Term "data beacons"

Based on the complete record, as discussed above, we find the evidence of record weighs strongly in favor of Petitioner's proposed claim construction: "[t]he term 'data beacons' recited in the preamble is an intended use and not limiting." Pet. 10; *accord* Pet. Reply 10.

After considering Petitioner's arguments (*id.*), we do not see how merely writing "first data" from the first write queue to the second parallel file system, as required by function [1.3], and merely reading the "first data" from the second parallel file system and placing the "first data" in the second read queue, as required by function [1.4], can *provide* data beacons, as required by preamble [1.0], because functions [1.3] and [1.4] merely transfer

and store the "first data." Ex. 1001, 23:8–12. Claim 1 is silent regarding how the "data beacons" are created or generated, so that they may be *provided* as required by preamble [1.0].

Therefore, we agree with Petitioner that the body of claim 1 defines a structurally complete invention and claim 1 uses the preamble only to state a purpose or intended use for the invention. Pet. Reply 10 (citing *Catalina Mktg.*, 289 F.3d at 808).

Accordingly, we agree with and adopt Petitioner's proposed claim construction as our own for the claim 1 preamble term "data beacons" throughout this Decision.

B. Obviousness Over Agarwala

Petitioner contends that claims 1–7 of the '632 patent are unpatentable under 35 U.S.C. § 103 as obvious over Agarwala in view of the knowledge of a person of ordinary skill in the art ("POSITA"). Pet. 28–59. We have also considered the Declaration by Dr. Reddy, as cited by Petitioner in support of its positions. *See* Ex. 1003.

1. Principles of Law

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics,*

Inc., 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A patent claim is unpatentable "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103; *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.[8] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). "[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR*, 550 U.S. at 416 (citing *United States v. Adams*, 383 U.S. 39, 50–51 (1966)). An obviousness inquiry is not limited to the prior art's preferred embodiment. *See, e.g.*, *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1370 (Fed. Cir. 2007). We also recognize that prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

[8] Patent Owner does not present arguments or evidence of secondary considerations (i.e., objective indicia of non-obviousness) in its Patent Owner Response or Sur-reply. *See generally* PO Resp., PO Sur-reply. Therefore, secondary considerations do not constitute part of our analysis herein.

2. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a POSITA. In assessing the level of ordinary skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). "[O]ne or more factors may predominate." *Id.*

Relying on the declaration testimony of Dr. Reddy, Petitioner contends that an ordinarily skilled artisan for the '632 patent "would have been familiar with network communications and distributed storage systems, including network file systems," and "would have a working knowledge of techniques for accessing data (reading and writing data) in distributed network storage systems, including parallel files systems." Pet. 11–12 (citing Ex. 1003 ¶ 37). Petitioner further asserts:

> A POSITA would have gained knowledge of these concepts through a mixture of training and work experience, such as by having a Bachelor's degree in computer science and four years of experience; or by obtaining a Master's degree in computer science, but having only one to two years of experience; or by having no formal education but experience in storage systems of at least eight years.

Id. at 12.

Patent Owner does not specifically address the level of skill of the ordinary artisan. *See generally* PO Resp., PO Sur-Reply.

Based on the complete record, we adopt Petitioner's definition of the level of ordinary skill in the art. We are satisfied that Petitioner's definition

comports with the level of skill necessary to understand and implement the teachings of the '632 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that the prior art itself can reflect appropriate level of ordinary skill in art).

3. Overview of Agarwala (Ex. 1005)

Agarwala is titled "Distributed Multi-Level Caching for Storage Appliances." Ex. 1005, code (54) (capitalization omitted). Agarwala relates "to a distributed multi-layer caching in a distributed storage system." *Id.* at 1:11–13.

Agarwala describes cost and performance drawbacks with prior art distributed multi-tier caches in proprietary computer storage appliances. Ex. 1005, 1:17–44. To address these drawbacks, Agarwala discloses a "distributed multi-layer cache in a distributed storage system . . . where the storage controller functions of the distributed storage system are separated from that of distributed storage system storage media." *Id.* at 1:48–51.

Agarwala discloses a storage system titled "StorFS," which "includes a Deduplicated Object Cache Layer (DOCL), where the DOCL is a multi-level de-duplicated cache that provides a simple and fast access to recently added and/or accessed objects." Ex. 1005, 3:4–8. "The DOCL uses a set of techniques to index the objects for fast lookup, track their hotness, read/write objects from/to SSDs [("solid state drives")] efficiently and without deteriorating their life significantly." *Id.* at 3:15–18.

> [T]he DOCL is a multi-layer cache that includes DRAM [("dynamic random access memory")] and fast storage devices (SSD, PCIe Flash); a small overhead for cache metadata, where metadata is in the cache with high probability if the associated data is in the cache; and does not require garbage cleaning

overhead for the fast storage devices.

Id. at 3:20–26. "In the StorFS system, the stored files are stripped across multiple caching vNodes." *Id.* at 3:45–46. Thus, "file I/O [("input/output")] requests are directed to the appropriate DOCL cache in the distributed system of cluster nodes, thereby presenting a view of a globally unified cache." *Id.* at 3:46–49.

Figure 1 of Agarwala, reproduced below, is an illustration of an embodiment of a high-level view of the StorFS system.

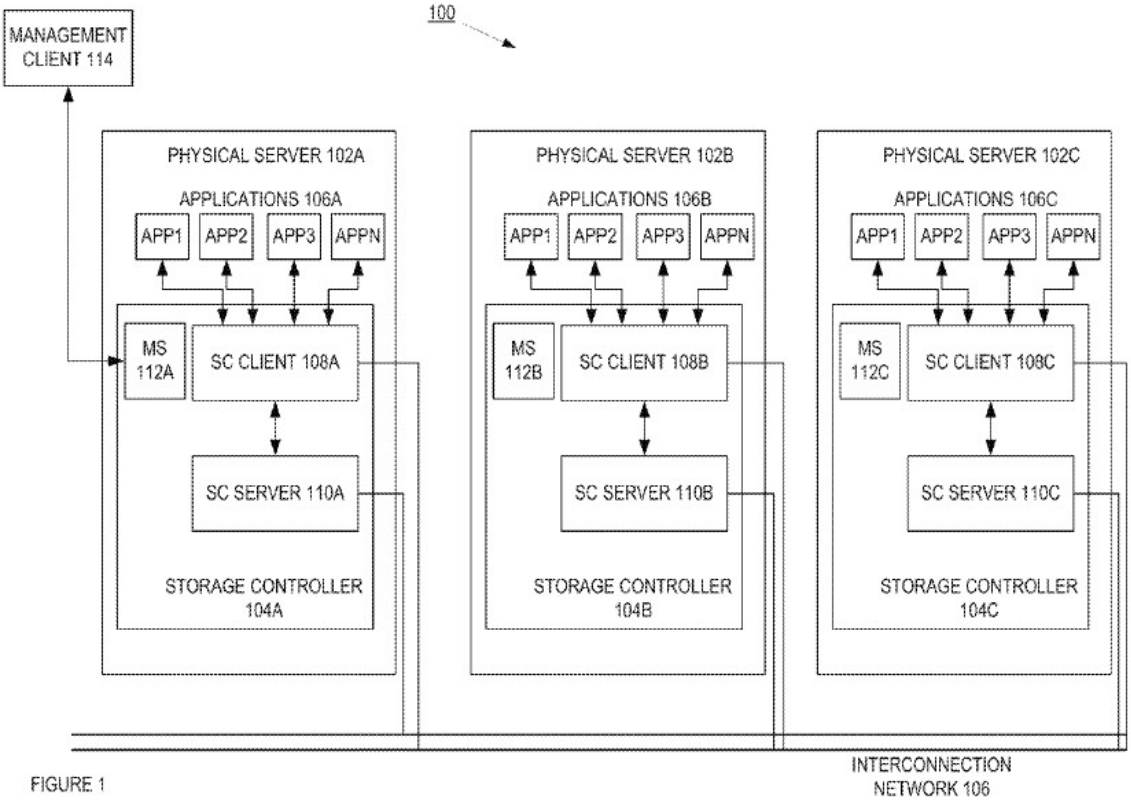

FIGURE 1

In Figure 1 of Agarwala (reproduced above), the StorFS system 100 includes storage nodes 102A–C coupled by an interconnection network 116, and includes a storage controller ("SC") client (also called dispatcher) 108A–C, a SC server 110A–C, or both. *Id.* at 3:60–4:3. "The SC client 108A–C processes input/output (I/O) requests from the applications that are

local to its physical storage node and routes them to the appropriate SC servers for processing." *Id.* at 4:6–9. Further, "[t]his allows the StorFS system to scale up and parallelize/distribute the workload to many different storage nodes," thus "providing higher combined performance." *Id.* at 5:39–45.

4. Relevant Timeline

We begin our analysis with a relevant timeline that depicts the temporal relationships between the '685 provisional application, the 14/135,489 patent application ("the '489 application"), the Agarwala patent (i.e., sometimes referred to as the '421 patent), and the '632 patent's critical date of April 26, 2016:

TIMELINE

Dec. 19, 2012	**Dec. 19, 2013**	**June 19, 2014**	**April 26, 2016**	**Feb. 28, 2017**
Agarwala's provisional application 61/739,685 was filed on Dec. 19, 2012.	Agarwala's patent application 14/135,489 was filed on Dec. 19, 2013, with a request not to publish at 18 months.	Agarwala's '489 application was not published at 18 months after its earliest effective filing date of Dec. 19, 2012.	Patent Owner's '632 patent has an undisputed earliest effective filing date of April 26, 2016.	Agarwala's U.S. Patent 9,582,421 B1 issued on Feb. 28, 2017.

Petitioner initially notes in its Petition: "[the '421 patent] to Agarwala et al. is titled 'Distributed Multi-Level Caching For Storage Appliances' and issued on February 28, 2017 from an application filed on December 19, 2013." Pet. 18 (citing Ex. 1005). Petitioner further notes that "[t]he '421 [p]atent claims priority to and incorporates by reference [the '685

provisional application]." *Id.* (citing Ex. 1004, filed December 19, 2012; Ex. 1005, 1:6–8).

From our timeline above, Agarwala issued on February 28, 2017, ***after*** the '632 patent's earliest effective filing date of April 26, 2016. However, the '489 application that issued as Agarwala was filed on December 19, 2013, ***before*** the '632 patent's critical date.

During the oral hearing conducted on April 22, 2025, the parties expressed that they are in agreement that the '632 patent is entitled to its earliest effective filing date of April 26, 2016 (referred to as the "critical date"). Tr. 16:21–24, 45:7–15. Patent Owner also agreed during the hearing that Agarwala qualifies as prior art at least based upon its December 19, 2013 filing date. *Id.* at 33:1–6. Patent Owner further agreed during the hearing that "there's not a dispute about whether that [Agarwala] non-provisional or this combined disclosure can obtain the December 2012 date" of the '685 provisional application. *Id.* at 33:15–18.

Instead, during the oral hearing Patent Owner clarified the issues in dispute from its perspective, as follows:

(1) Whether Agarwala properly incorporates by reference the '685 provisional application in its entirety under the doctrine of incorporation by reference (*see* Tr. 37:3–9), and

(2) Whether the '489 application that issued as Agarwala canceled subject matter from its '685 provisional application, by purportedly not including it in the '489 application. *See* Tr. 44:1–45:6.

More specifically, Patent Owner contends: "if the provisional disclosure is not itself, if that non-carried-forward subject matter that's essential to the analysis was ***not public before the critical date***, then that doesn't count, that subject matter." Tr. 45:2–5 (emphasis added).

We note that a request under 37 C.F.R. § 1.213(a) was made to the U.S. Patent and Trademark Office ("USPTO") by Agarwala's applicant not to publish the '489 application at 18 months[9] after Agarwala's earliest effective filing date (i.e., 18 months after the December 19, 2012 filing date of its '685 provisional application). *See* MPEP § 1122 ("Requests for Nonpublication" [R–07.2022]).

We further note that provisional applications are not examined and are not published by the USPTO, but will become publicly available (via Public PAIR or by a request for a copy) when the nonprovisional patent application is either: (1) published, or (2) granted as a patent. The latter scenario is applicable here, because the Agarwala patent issued on February 28, 2017. Ex. 1001, code (45).

It is undisputed between the parties that the subject matter of Agarwala (including its '685 provisional application) did not become publicly available until the issue date of Agarwala on February 28, 2017, this date being ***after*** Patent Owner's undisputed critical date of April 26, 2016. *See* Tr. 16:21–24.

Based on the complete record, including the clarification of what issues are in dispute (from the oral hearing), we find the question of whether Agarwala is entitled to the benefit of the filing date of its '685 provisional application is not dispositive, because if Petitioner establishes that Agarwala properly incorporated by reference the '685 provisional application in its

[9] *See* Application Data Sheet (ADS) filed under 37 C.F.R. § 1.76 on December 19, 2013, in the file of the '489 application, page 4: "Request Not to Publish" under 35 U.S.C. § 122(b). At the bottom of this same page 4 of the ADS, Agarwala's applicant claims under 35 U.S.C. § 119(e) that it is entitled to the benefit of the filing date of the '685 provisional application, filed on December 19, 2012.

entirety (addressed further *infra*), then Petitioner need only rely upon the December 19, 2013, filing date of the '489 application that issued as Agarwala (qualifying as prior art under AIA § 102(a)(2), as discussed *infra*) to antedate Patent Owner's undisputed critical date of April 26, 2016. As noted above, Patent Owner agreed during the oral hearing that Agarwala at least qualifies as prior art based upon the December 19, 2013 filing date of the '489 application that issued as Agarwala. Tr. 33:1–6.

5. Agarwala qualifies as prior art to the '632 patent under AIA 35 U.S.C. § 102(a)(2)

Petitioner notes that Agarwala "claims priority to and incorporates by reference U.S. Provisional Application 61/739,685 (*EX-1004*) filed December 19, 2012." Pet. 18 (citing Ex. 1005, 1:6–8). Petitioner contends: "[Agarwala] is prior art to the '632 [p]atent under §102(a)(2)(AIA). Together [Agarwala] and the incorporated '685 [p]rovisional [application] are referred to herein as 'Agarwala.'" *Id.* Petitioner additionally notes that "Agarwala was not cited or applied by the examiner during prosecution of the '632 [p]atent." *Id.*

But Patent Owner disagrees that Agarwala is prior art to the '632 patent under § 102(a)(2) (AIA). PO Resp. 30–32. Patent Owner asserts that Petitioner "knew that the alleged prior art [Agarwala] relied on a pre-AIA priority date," referring to Agarwala's priority claim, i.e., as being entitled to the benefit of the earlier filing date of its '685 provisional application. *Id.* at 31. Patent Owner thus argues that because Petitioner "knew that the alleged prior art [Agarwala] relied on a pre-AIA priority date[,] Petitioner was

required to perform a *Dynamic Drinkware*[10] analysis." *Id.* Patent Owner contends: "Petitioner should have further understood that the Board's guidance in *Penumbra*"[11] only applies "to a prior art reference relying on a priority date under the AIA," and is therefore "not applicable to this case." *Id.*

Petitioner disagrees in its Reply and argues: "*Dynamic Drinkware* is simply not relevant to the current Petition. The earliest priority date of the '632 Patent is April 26, 2016, which is after March 16, 2013," and thus

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[10] *See Dynamic Drinkware*, 800 F.3d 1375. *See also In re Riggs,* 131 F.4th 1377, 1384–85 (Fed. Cir. 2025) (extending *Dynamic Drinkware*), as follows:

> Even if one demonstrates that a provisional application provides written description support for one claim of the non-provisional application or patent, *the provisional application must also provide written description support for the specific portions of the patent specification identified and relied on in the prior art rejection*. In other words, to claim priority to the provisional filing date, the portion of the application relied on by the examiner as prior art must be supported by the provisional application. It makes no sense to suggest that if a single claim is supported by the provisional application, then everything in the later filed application gets the benefit of the provisional date whether supported or not.

(emphasis added).

[11] *See Penumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 34 at * 29, 33 (PTAB Mar. 10, 2023) (designated precedential Nov. 15, 2023) ("[U]nder AIA §§ 102(a)(2) and 102(d), there is no need to evaluate whether any claim of a reference patent document is actually entitled to priority when applying such a reference" and "Petitioner did not need to conduct a *Dynamic Drinkware* analysis under AIA § 102(d) based on statutory language, legislative history, USPTO Guidance on *Dynamic Drinkware*, and the MPEP"). *See also Riggs*, 131 F.4th at 1384–85 (extending *Dynamic Drinkware*).

Penumbra applies because Agarwala qualifies as prior art under the AIA. Pet. Reply 15.

Petitioner concludes: "[b]ecause the '632 Patent and the reference patent document, Agarwala, are evaluated under AIA, the *Dynamic Drinkware* analysis is not required for the Petitioner to meet its burden that the Challenged Claims are obvious over Agarwala." *Id.*

Of particular importance in resolving this dispute, Petitioner expressly indicates that it ***does not rely upon the filing date*** of the '685 provisional application: "although [Agarwala] complies with [§] 119(e) because it claims priority by making specific reference to the '685 [p]rovisional [a]pplication, *the Petition* ***does not rely on the filing date*** *of the '685 [p]rovisional [a]pplication*." Pet. Reply 7 n.3 (emphasis added).

As stated above in footnote 2, the AIA versions of §§ 102 and 103 took effect on March 16, 2013. Because all of the '632 patent's dates are after this date, AIA §§ 102 and 103 apply here. *See* Pet. Reply 2–3 ("Because the earliest priority date of the '632 Patent is April 26, 2016 which is after March 16, 2013, the '632 Patent is subject to the AIA."). For example, when a challenged patent is subject to AIA § 102, we would look at AIA § 102 to determine if a reference is prior art to the challenged patent, even if that reference is a pre-AIA patent.

Here, there appears to be no dispute that Agarwala is prior art based upon its own filing date, because Patent Owner agreed during the oral hearing that Agarwala qualifies as prior art based upon its December 19, 2013 filing date. Tr. at 33:1–6. *Cf.* Pet. Reply 3 ("[T]he Petition relies on the '685 Provisional Application as being part of the '421 Patent disclosure as of its December 19, 2013 filing date.). The parties are also in agreement that the '632 patent is entitled to its earliest effective filing date of April 26,

2016 (critical date). Tr. 16:21–24, 45:7–15.

However, Agarwala would not be prior art as of its provisional's filing date unless the '685 provisional application has everything that Petitioner needs to teach Patent Owner's claims 1–7. *See* 35 U.S.C. § 102(d)(2). But if Petitioner can show that Agarwala properly incorporated by reference its '685 provisional application in its entirety, then it is ***irrelevant*** whether Agarwala can claim priority to the December 19, 2012 filing date of its '685 provisional application (Ex. 1004).

If Petitioner can show that Agarwala properly incorporated by reference its '685 provisional application in its entirety, then "[Agarwala] is prior art to the Patent Owner's '632 [p]atent ***based on its own filing date*** without regard to the priority date of the '685 [p]rovisional [a]pplication." Pet. Reply 15 (emphasis added).

On the complete record, we find Petitioner need not rely upon the earlier filing date of the '685 provisional application to antedate the '632 patent's critical date of April 26, 2016, assuming that the '685 provisional application was properly incorporated by reference ***in its entirety*** into Agarwala as of the '489 application filing date of December 19, 2013.

We address this "incorporation by reference" issue *infra*.

6. Incorporation by Reference

We next address the question of whether Agarwala properly incorporated by reference its '685 provisional application ***in its entirety*** under the doctrine of incorporation by reference. We also address the question of whether the '489 application that issued as Agarwala ***canceled*** subject matter from its '685 provisional application, by purportedly not

including it in the '489 application. *See* Ex. 2014 (Patent Owner identifies the subject matter purportedly not carried forward from the '685 provisional application into the '489 Agarwala patent application by using red "strikeout" horizontal lines over the portions of text not carried forward).

Patent Owner contends the "cancelled matter of the '685 provisional application—which was never carried forward into [Agarwala]—did not become available to the public until the February 28, 2017, issuance of [Agarwala], the first publication event in its family." PO Resp. 6. Patent Owner thus contends the '685 provisional application is not available as prior art under section 35 U.S.C. § 102, because some of its subject matter was purportedly ***canceled*** by not being included in the '489 application that issued as Agarwala. *Id.*

In support, Patent Owner argues:

> Most of the paragraphs and the figures of the '685 provisional [application] were omitted from, and thus cancelled before, the filing of [Agarwala]. Only select portions of the '685 provisional application were copied over to [Agarwala]. The only common figures between the '685 provisional and [Agarwala] are Figures 1 and 2, neither of which is relied upon by Petitioner for anticipation. (See Ex. 2011 at ¶ 43.) Paragraphs 0037-0046 and 0053-00126 of the '685 provisional [application] are omitted from [Agarwala]. The specification of the '685 provisional [application] contains over 20,000 words, while the specification of [Agarwala] contains less than 10,000 words. Petitioner attempts to rely upon this ***cancelled*** material but, as explained below, such material does not become 'prior art' until it is publicly available. As noted above, the first publication event in the family of [Agarwala] was the February 28, 2017 issuance of [Agarwala].

Id. (emphasis added).

Patent Owner further explains that "[f]or a provisional patent application to constitute prior art under 35 U.S.C. § 102, the provisional

patent application must be cited as part of a non-provisional patent application 'deemed published under [35 U.S.C.] Section 122(b).'" PO Resp. 7 (citing AIA 35 U.S.C. § 102(a)(2)).

Petitioner disagrees, and contends:

> The Petition includes a ***single ground***—Claims 1-7 are unpatentable as obvious over Agarwala. Agarwala includes U.S. Pat No. 9,582,421 (the "'421 Patent")(EX-1005), and U.S. Provisional Application 61/739,685 (the "'685 Provisional Application") (EX-1004), ***which is expressly incorporated by reference in its entirety*** in [Agarwala]. The ['489 application that issued as Agarwala] was filed on December 19, 2013, and thus is prior art under 102(a)(2)(AIA), ***without regard to whether it claims priority to the filing date*** *of the '685 [p]rovisional [a]pplication*. The Petition's citations to Agarwala include citations to EX-1004, EX-1005 or both.

Pet. Reply 1 (emphases added).

> [Agarwala] specifically identifies the '685 [p]rovisional [a]pplication and states "*the entirety of which is incorporated by reference*." The legal significance of this is that *the entirety of the '685 [p]rovisional [a]pplication is included in [Agarwala] as if fully written therein as of the December 19, 2013 filing date of the ['489 application]*, (which is 3 years before the priority date of the '632 [p]atent). Thus, the entire contents of the '685 [p]rovisional [a]pplication is part of the disclosure of [Agarwala] and can be relied on as prior art under 102(a)(2)(AIA). All of the case law cited by the [Patent Owner] is directed to cases in which a provisional application is **not** incorporated by reference.

Pet. Reply 1–2 (emphases in italics added, bold in original).

Petitioner thus emphasizes that, because "the Petition relies on the '685 [provisional application] as being part of [Agarwala's] disclosure as of

its December 19, 2013 filing date[,] [whether Agarwala] can claim priority to the '685 [provisional application] is not relevant." Pet. Reply 3.

Petitioner argues:

> Under the relevant law, the ***entire disclosure*** of the '685 [p]rovisional [a]pplication is included in [Agarwala] for all purposes as if explicitly contained therein. MPEP (8th Ed) §2163.07(b) ("information incorporated is as much a part of the application as filed as if the text was repeated in the application, and should be treated as part of the text of the application as filed."); *Ultradent Prods., Inc. v. Life-Like Cosmetics, Inc*., 127 F.3d 1065, 1069 (Fed. Cir. 1997) (rejecting argument that anticipatory reference "sa[id] nothing" about pertinent portions of an incorporated reference because "the entire contents" were incorporated);

Pet. Reply 4 (emphasis added).[12]

Petitioner clarifies that "the Petition does not assert that the '685 [p]rovisional [a]pplication is **itself** prior art. Instead, its disclosure is part of [Agarwala] which is prior art under §102(a)(2)(AIA), as expressly stated in the Petition (Pet. 18) and confirmed in MPEP 2127(I)." Pet. Reply 5.

Petitioner clarifies:

> To be clear, Agarwala is a single reference that includes the combined disclosure of the '421 [p]atent and the '685 [p]rovisional [a]pplication, and the Petition's use of two different exhibit[] numbers (EX-1004 and EX-1005) is a necessary mechanism since there is no document that physically embodies the combined disclosure of the '421 [p]atent and the '685

[12] *See Ultradent*, 127 F.3d at 1069 ("The error in the district court's summary judgment order related to the nature of the disclosure in the prior art. The Munro patent ***incorporates by reference*** the ***entire contents*** of the Rosenthal disclosure. Ultradent's assertion that Munro 'says nothing' about the Rosenthal compositions and merely discloses using the commercial embodiment of the Rosenthal patent is contrary to the rules of practice, which permit incorporation of prior art by reference," referring to the relevant MPEP sections).

[p]rovisional [a]pplication.

Pet. Reply 8.

We have found *supra* that Agarwala qualifies as prior art under §102(a)(2) (AIA). We thus agree with Petitioner that Agarwala can be considered as a ***standalone*** prior art reference under AIA 35 U.S.C. 102(a)(2).

However, Patent Owner further asserts: "the non-provisional patent application must make a '***specific reference***' to the matter within the provisional application sought to be included in the non-provisional application." PO Resp. 7 (citing 35 U.S.C. § 119([e])).[13]

We note the actual pertinent language from 35 U.S.C. § 119(e)(1) is broader than that argued by Patent Owner:

> An application for patent filed under section 111(a) or section 363 for an invention disclosed in the manner provided by section 112(a) (other than the requirement to disclose the best mode) *in a provisional application* filed undersection 111(b), by an inventor or inventors named in the *provisional application*, *shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under section 111(b)*, if the application for patent filed under section 111(a) or section 363 is filed not later than 12 months after the date on which the provisional application was filed and if it contains or is amended to contain ***a specific reference to the provisional application***.

[13] Petitioner notes: "The [Patent Owner Response] cited 35 U.S.C. § 119(c), but because that section deals with foreign priority, an issue not relevant here, we assume the [Patent Owner Response] meant to cite to 35 U.S.C. § 119(e)." Pet. Reply 6 n.2. We agree with Petitioner that it appears Patent Owner intended to cited to § 119(e), and not § 119(c), so we have corrected what appears to be a typographical error above. *See* PO Resp. 7 (citing "35 U.S.C. § 119(c)").

35 U.S.C. § 119(e)(1) (Dec. 18, 2012, Public Law 11–211, sec. 202(b)(2), 126 Stat. 1536) (emphases added).

Patent Owner further contends that "[w]here matter contained in a provisional application is, however, intentionally ***omitted*** from the non-provisional application, the omitted matter is not entitled to the priority date of the provisional application and is considered 'cancelled matter.'" PO Resp. 7 (citing MPEP § 2127(II)(A); *see also* MPEP § 901.01). Patent Owner thus contends that "'[c]ancelled matter' is not prior art under 35 U.S.C. § 102(a)(2) or Pre-AIA 35 U.S.C. 102(e)." *Id.* at 7–8. Patent Owner further notes that "[t]he ***canceled*** matter only becomes available as prior art as of the date the application file history becomes available to the public." *Id.* at 7. (emphasis added).

We note MPEP § 2127(II)(A), as cited by Patent Owner (*id.*) states in relevant part:

> Canceled matter in the application file of a U.S. patent or application publication cannot be relied upon in a rejection under 35 U.S.C. 102(a)(2) or pre-AIA 35 U.S.C. 102(e). *Ex Parte Stalego,* 154 USPQ 52, 53 (Bd. App. 1966). The canceled matter only becomes available as prior art as of the date the application file history becomes available to the public. *In re Lund,* 376 F.2d 982, 153 USPQ 625 (CCPA 1967). However, as discussed below, such matter may be available as prior art under 35 U.S.C. 102(a)(1) or pre-AIA 35 U.S.C. 102(b).

Id.

Patent Owner notes that "the Federal Circuit recognizes *Lund* as good law." PO Resp. 10 (citing *Advanced Display Systems, Inc. v. Kent State University*, 212 F.3d 1272, 1283 (Fed. Cir. 2000) ("holding that [in *Lund*] a one sentence reference to an abandoned application is not sufficient to

incorporate material from the abandoned application into a new application" (citing *Lund*, 376 F.2d at 989)).

In *Lund,* "[i]n deciding what had been 'carried over,' the court held that merely designating an application as a continuation-in-part was not sufficient to incorporate by reference the disclosure of the abandoned application into the patent disclosure." *In re Wertheim*, 646 F.2d 527, 533–34 (CCPA 1981) (citing *In re Lung* 376 F.2d 982, 989 (CCPA 1967) ("There is little in the term 'continuation-in-part' which would suggest to the reader of the patent that a disclosure of the nature of Example 2 is present in the earlier application and that it should be considered a part of the patent specification. Thus[,] we cannot agree that the subject matter of claim 3 is tacitly 'described' in the Margerison patent within the meaning of 102(e).").

However, we find *Lund* is not analogous to the situation presented here in which Agarwala expressly incorporated the '685 provisional application ***in its entirety***. Ex. 1001, 1:6–8 ("Applicant claims the benefit of priority of prior, provisional application Ser. No. 61/739,685, filed Dec. 19, 2012, ***the entirety of which is incorporated by reference***." (emphasis added)). Moreover, Agarwala does not include a claim of priority to a continuation-in-part application, as was the case in *Lund*. *See id.* at codes (21), (22), (60).

Because we find *Lund* inapposite to the incorporation by reference priority context presented at the top of column 1 of Agarwala, we do not find Patent Owner's arguments regarding *Lund* persuasive. *See* Ex. 1005, 1:6–8.

We note MPEP § 901.01, as cited by Patent Owner on page 7 of its Response, refers to pre-AIA 35 U.S.C. § 102(e), which sets forth in relevant part:

> A person shall be entitled to a patent unless . . . (e) the invention was described in — (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent . . . . (emphases added).

See also Lynk Labs, Inc. v. Samsung Elecs. Co., 125 F.4th 1120, 1126 (Fed. Cir. 2025) ("[U]nder § 102(e)(1), even if a patent application was *published* after a claimed invention, it may serve as prior art to the invention if the application was *filed* before the invention.").

In reviewing Patent Owner's arguments, we do not see how material from the '685 provisional application can be ***canceled*** (or not carried forward or intentionally omitted) from the later filed '489 application that issued as Agarwala, when the Agarwala patent ***expressly incorporates by reference*** *the* ***entirety of its provisional application***, as argued by Petitioner: "Specifically, [Agarwala] incorporates by reference the 'entirety' of the '685 [p]rovisional [a]pplication: Applicant claims the benefit of priority of prior, Provisional Application Serial Number 61/739,685, filed Dec. 19, 2012, ***the entirety of which is incorporated by reference***." Pet. Reply 4 (quoting Ex. 1005, 1:5–7) (emphasis added).

As Petitioner explains: "no part of the '685 [p]rovisional [a]pplication was canceled. To the contrary, the **entirety** of the '685 [p]rovisional [a]pplication was included in [Agarwala]." Pet. Reply 5–6. Petitioner persuasively argues that "[Patent Owner's] citation to cases regarding 'canceled matter,' none of which involve a provisional application which was expressly incorporated by reference in its entirety, are simply not relevant to the facts in this case." *Id.* (citing PO Resp. 7–10).

Therefore, based on the complete record, we agree with Petitioner that "the entire contents of the '685 [p]rovisional [a]pplication is part of the disclosure of [Agarwala]," by virtue of its ***express incorporation by reference*** into [Agarwala] in its ***entirety***. Pet. Reply 1–2 (emphasis added). *See also* Ex. 1005, 1:6–8.

We also agree with Petitioner that "[Patent Owner's] arguments treating EX-1004 and EX-1005 as unrelated disclosures are not relevant to the only ground in the Petition." Pet. Reply 2; *see also id.* 4 (as reproduced above in block quote form).

As cited by Petitioner (*id.*), we reproduce the current version of MPEP § 2163.07(b) below in pertinent part:

> **2163.07(b) Incorporation by Reference [R-11.2013]**
>
> Instead of repeating some information contained in another document, an application may attempt to incorporate the content of another document or part thereof by reference to the document in the text of the specification. *The information incorporated is as much a part of the application as filed as if the text was repeated in the application, and should be treated as part of the text of the application as filed*. Replacing the identified material incorporated by reference with the actual text is *not new matter*. See 37 CFR 1.57 and MPEP § 608.01(p) for Office policy regarding incorporation by reference.

MPEP § 2163(b) (Rev. 01.2024, November 2024) (emphasis added).

See also 37 C.F.R. § 1.57 (cited above), as reproduced below:[14]

[14] 37 C.F.R. § 1.57 applies to Agarwala, which was filed under 35 U.S.C. § 111(a) on December 19, 2013.

37 C.F.R. § 1.57 Incorporation by reference.

(b) Subject to the conditions and requirements of this paragraph, if all or a portion of the specification or drawing(s) is inadvertently omitted from an application, but the application contains a claim under § 1.55 for priority of a prior-filed foreign application or a claim under § 1.78 for the benefit of a ***prior-filed provisional***, nonprovisional, international application, or international design application, that was present on the filing date of the application, and the inadvertently omitted portion of the specification or drawing(s) is completely contained in the prior-filed application, the claim under § 1.55 or 1.78 shall also be considered an incorporation by reference of the prior-filed application as to the inadvertently omitted portion of the specification or drawing(s)

37 C.F.R. § 1.57 (emphasis added).

See also 37 C.F.R. § 1.78 (Claiming benefit of earlier filing date and cross-references to other applications):

37 C.F.R. § 1.78 Incorporation by reference.

(a) Claims under 35 U.S.C. 119(e) for the benefit of a prior-filed provisional application. An applicant in a nonprovisional application, other than for a design patent, or an international application Rev. 01.2024, November 2024 R-108 § 1.77 MANUAL OF PATENT EXAMINING PROCEDURE designating the United States may claim the benefit of one or more prior-filed provisional applications under the conditions set forth in 35 U.S.C. 119(e) and this section.

. . . .

(a)(3) Any ***nonprovisional application*** or international application designating the United States that ***claims the benefit of one or more prior-filed provisional applications*** must contain, or be amended to contain, ***a reference to each such***

> ***prior-filed provisional application***, ***identifying it by the provisional application number (consisting of series code and serial number***). If the later-filed application is a nonprovisional application, ***the reference required by this paragraph must be included in an application data sheet*** (§ 1.76(b)(5)).

Shown below in part is page 4 of the Application Data Sheet (ADS) filed under 37 C.F.R. § 1.76 on December 19, 2013 in the '489 application file of Agarwala:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	009462.P002
	Application Number	
Title of Invention	DISTRIBUTED MULTI-LEVEL CACHING FOR STORAGE APPLIANCES	

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☒	**Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	08791		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the application number blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Claims benefit of provisional	61739685	2012-12-19

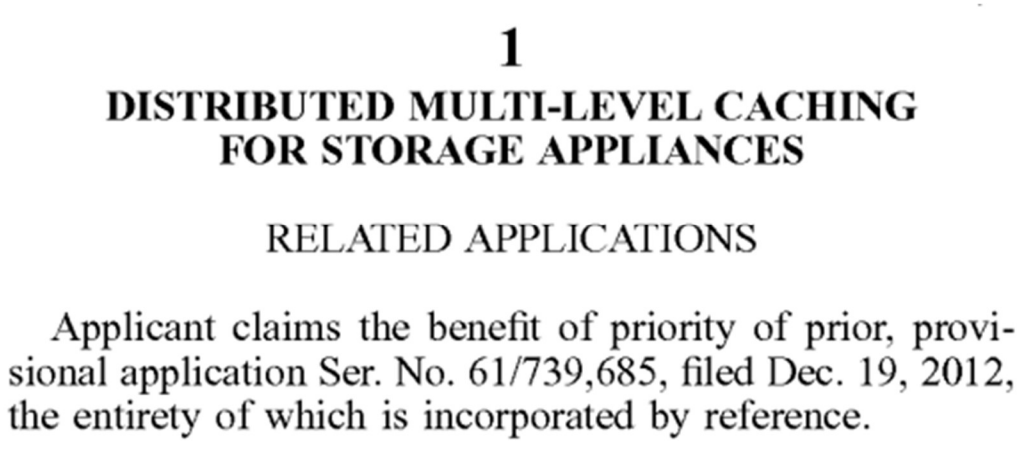
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

> *Shown above in part is page 4 in part of the Application Data Sheet (ADS) filed under 37 C.F.R. § 1.76 on December 19, 2013, in the Agarwala '489 application file that includes a request not to publish under 35 U.S.C. § 122(b), and a claim under 35 U.S.C. § 119(e) and 37 C.F.R. § 1.78 to the benefit of the earlier 61/739,685 provisional application's filing date of December 19, 2012.*

But Patent Owner argues that the Petition attempts to sidestep the cancellation issue by "asserting that '[Agarwala] claims priority to and incorporates by reference" the '685 provisional application. PO Resp. 8. Patent Owner contends that "[s]uch a broad and generic statement does not suffice to re-import the entire contents of the'685 [p]rovisional [application], particularly the *cancelled* material intentionally omitted from inclusion in [Agarwala]." *Id.* (emphasis added).

In support of this argument, Patent Owner argues that, in *Advanced Display Systems, Inc. v. Kent State University*, (212 F.3d 1272, 1283 (Fed. Cir. 2000)), "the Federal Circuit found that incorporating material by reference requires more than a mere identification of the document sought to be incorporated." PO Resp. 8 (citing *Advanced Display*, 212 F.3d at 1282). Patent Owner urges that "the document citing the reference to be incorporated 'must identify *with detailed particularity* what specific material it incorporates and clearly indicate where that material is found in the various documents.'" *Id.* Patent Owner thus contends that "[w]here the material sought to be incorporated into the host document has not been so identified, the material is not actually incorporated." *Id.* at 1283 (citing with approval *Lund*, 376 F.2d 982).

But as noted above, we do not see how material from the '685 provisional application can be canceled (or not carried forward or intentionally omitted) from the later filed '489 application that issued as Agarwala, especially when Agarwala ***expressly incorporates by reference*** *the* ***entirety of the '685 provisional application***, as argued by Petitioner. Pet. Reply 4 (citing Ex. 1005, 1:5–7) (emphasis added). (Ex. 1005, 1:1–8), as shown below, as depicted at the top of column 1 of Agarwala:



1

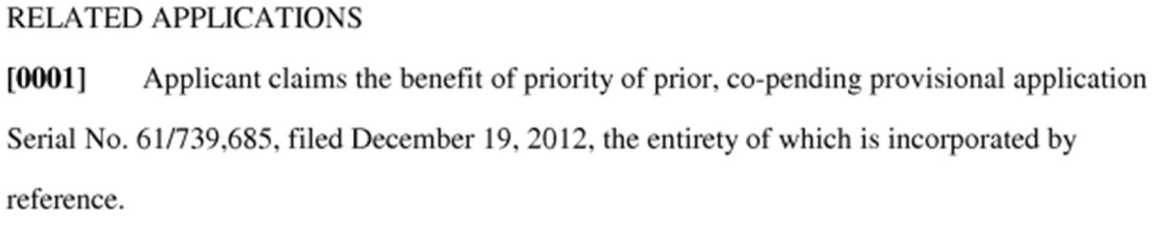
DISTRIBUTED MULTI-LEVEL CACHING FOR STORAGE APPLIANCES

RELATED APPLICATIONS

Applicant claims the benefit of priority of prior, provisional application Ser. No. 61/739,685, filed Dec. 19, 2012, the entirety of which is incorporated by reference.

Shown above, Agarwala's incorporation by reference of the '685 provisional application in its entirety. Ex. 1005, 1:1–8. *See* 37 C.F.R. § 1.57.

Shown below is the incorporation by reference of the '685 provisional application in its entirety into the '489 application filed on December 19, 2013, at paragraph 1:



RELATED APPLICATIONS

[0001] Applicant claims the benefit of priority of prior, co-pending provisional application Serial No. 61/739,685, filed December 19, 2012, the entirety of which is incorporated by reference.

We are of the view that there is at least one efficient way to incorporate a reference in its entirety, and that way is reproduced above from column 1 of Agarwala.[15] *Id.* We also recognize that *Advanced Display* guides that "the standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity." *Advanced Display*, 212 F.3d at 1283; In particular, "[i]ncorporation by reference provides a method for integrating material from various documents into a host document—a patent or printed publication in an anticipation determination—by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein." *id.* at 1282.

From the perspective of one reasonably skilled in the art, we are of the view that in a priority claim that incorporates by reference a provisional application in its ***entirety***, there is no need to identify *with detailed particularity* what specific material is incorporated, nor is there a need to clearly indicate where that material is found in the incorporated application, as was the case presented in *Advanced Display*.

[15] *See* 35 U.S.C. § 119(e) ("No application shall be entitled to the benefit of an earlier filed provisional application under this subsection unless an amendment containing the specific reference to the earlier filed provisional application is submitted at such time during the pendency of the application as required by the Director. The Director may consider the failure to submit such an amendment within that time period as a waiver of any benefit under this subsection.").

Moreover, there are cases in which the Federal Circuit has found incorporation by reference ***in its entirety***, even when the literal term "entirety" was not used. *See, e.g.*, *Paice LLC v. Ford Motor Company*, 881 F.3d 894, 907 (Fed. Cir. 2018):

> The first sentence of this passage is broad and unambiguous. It states that Severinsky "is," without qualification, incorporated into the '817 application "by this reference"—i.e., the reference contained in the sentence. The sentence identifies with detailed particularity the specific material subject to incorporation (Severinsky, and not just particular portions thereof) and where that material can be found (U.S. Patent No. 5,343,970). Such language is plainly sufficient to incorporate Severinsky ***in its entirety.***

(emphasis added) (citing *Harari v. Lee*, 656 F.3d 1331, 1335–36 (Fed. Cir. 2011) (finding that prior art applications were incorporated in their entirety based on the following "broad and unequivocal language": "'The disclosures of the two applications are hereby incorporate[d] by reference'"); *Cf. Arbutus Biopharma Corporation v. ModernaTX, Inc.*, 65 F.4th 656, 664 (Fed. Cir. 2023) ("'[T]he DDM are described in detail in [the '031 publication], the disclosure of which is herein incorporated by reference ***in its entirety*** for all purposes.' . . . The Board's finding that the references disclose and describe DDM the same way is thus supported by substantial evidence."). (emphasis added).

We similarly find unavailing Patent Owner's reliance on *Samsung Electronics Co., Ltd., et al., v. Black Hills Media, LLC*, IPR2014-00740, 2014 WL 5788570 (PTAB, Nov. 4, 2014). PO Resp. 9–10. First, *Samsung* is not a precedential Board decision that has any binding authority in this case. Second, the issue in *Samsung* involved an obviousness ground that relied upon Logan and Lau, where Lau was a provisional application. The

Board in *Samsung* found that because "Lau is not 'an application for patent, published under section 122(b), [it] therefore, does not qualify as prior art under § 102(e)." *Id.* at * 23.

In contrast here, Petitioner asserts that "[Agarwala] standing alone **includes** the disclosure of the '685 [p]rovisional [a]pplication," by virtue of Agarwala incorporating the entirety of the '685 provisional [a]pplication into the '489 application. Pet. Reply 2. Petitioner notes "[t]he Petition makes this clear by asserting a single ground of obviousness over Agarwala which is defined as the combined disclosure of EX-1005 (the '421 [p]atent) and EX-1004 (the '685 [p]rovisional [a]pplication)." *Id.*

Given that the applicant in Agarwala appears to have complied with the provisions of 37 C.F.R. §§1.57;1.78(a); 1.78(a)(3); and 1.76(b)(5), we find a preponderance of the evidence indicates that the applicant in Agarwala deliberately (i.e., intentionally) incorporated its '685 provisional application in its ***entirety*** into the Agarwala '489 application, as of its filing date of December 19, 2013, which antedates Patent Owner's critical date of April 26, 2016.

Accordingly, based on the complete record, we agree with Petitioner that "[Patent Owner's] arguments treating EX-1004 and EX-1005 as unrelated disclosures are not relevant to the only ground in the Petition." Pet. Reply 2.

7. The Issue of "Secret" Prior Art

Patent Owner argues that, because there was a request not to publish at 18 months from the earliest effective filing date of Agarwala, the subject matter which was not carried over from the '685 provisional application to Agarwala "was therefore considered to be available only when the child

application's file history became available to the public," which first occurred on the February 28, 2017 date of issuance of Agarwal. PO Resp. 10 (citing *Lund*, 376 F.2d at 991).

However, as noted above, we find *Lund* is not analogous to the situation presented here in which Agarwala expressly incorporated its '685 provisional application in its entirety. Ex. 1001, 1:6–8. Moreover, Agarwala does not include any priority claim to a continuation-in-part application, as was the case in *Lund*. *See id.* at codes (21), (22), (60).

In its PO Sur-reply, Patent Owner argues that "Petitioner's position, as explicitly stated in the Reply, is that '***the Petition does not assert that the '685 [p]rovisional [a]pplication is itself prior art***.'" PO Sur-reply 1 (citing Pet. Reply at 5). Patent Owner contends "[t]his is precisely the problem that Petitioner cannot overcome and that the Reply fails to rebut: ***the '685 provisional application is not prior art to the '632 patent under 35 USC § 102***. Its earliest date of public availability is simply too late." *Id.*

In its PO Sur-reply, Patent Owner argues:

> With [the '489 application's] filing, Applicant included a request for non-publication of the application. (**Ex. 2013, at 11**.) The non-publication request prevented publication of [the '489 application]. Publication would have otherwise occurred as required under 35 U.S.C. § 122(b), the statute mandating formal publication of all non-provisional applications ***within 18 months of the earliest filing date*** from which a benefit is sought. But for the non-publication request, [the '489 application] would have published on June 19, 2014, which would have made the '685 provisional [application] accessible to the public on this date.

PO Sur-reply 2 (emphasis added).[16]

Thus, we understand Patent Owner's arguments as asserting that until Agarwala issued on February 28, 2017 (after the '632 patent's critical date of April 26, 2016), the subject matter of Agarwala and its '685 provisional application were "secret prior art" that cannot be relied upon to antedate the '632 patent's critical date. *See* PO Sur-reply 1–2.

However, as noted by Petitioner, the earlier filing date of the '685 provisional application is not needed because the December 19, 2013 filing date of the '489 application that issued as Agarwala antedates the '632 patent's critical date of April 26, 2016. Pet. Reply 5.

Because we have found Agarwala qualifies as prior art under AIA 35 U.S.C. 102(a)(2), and because Agarwala incorporates the '685 provisional application ***in its entirety*** (Ex. 1005, 1:6–8.), we agree with Petitioner that Patent Owner's arguments fail to appreciate that "[Agarwala] standing alone **includes** the disclosure of the '685 [p]rovisional [a]pplication." Pet. Reply 2.

Although Patent Owner is correct that the respective disclosures of the '685 provisional application (Ex. 1004) and the Agarwala '421 patent (Ex. 1005) did not become publicly available (excluding foreign patent

[16] As noted herein *infra* under Section III ("ADDITIONAL ISSUE"), Exhibit 2013 (page 7), filed by Patent Owner in this IPR2024-00344 proceeding is incorrectly identified by Patent Owner in its Sur-reply "Table of Exhibits" (p. iv), as being from Agarwala application No. 14/135,489. We find Exhibit 2013 includes a different ADS for a different (but related) patent application 14/135,48**5** to Agarwala (also filed on December 19, 2013, and also claiming the entitlement to the benefit of the earlier filing date of the '685 provisional application). *See* Ex. 2013, 4 (showing Application Number "1413548**5**"). Therefore, Exhibit 2013 does not appear to be relevant to this IPR proceeding.

offices) until the grant of the Agarwala patent on February 28, 2017 (and thus were arguably "secret" prior art), we find Agarwala (which we find properly incorporated the '685 provisional application **in its entirety**) qualifies as prior art pursuant to AIA 35 U.S.C. §§ 102(a)(2); 102(d)(1), as of its December 19, 2013 filing date.

Therefore, Agarwala's December 19, 2013 filing date antedates Patent Owner's undisputed effective filing date of April 26, 2016 (critical date).

Accordingly, based upon the complete record, and the AIA (or pre-AIA) statutory language, we find Patent Owner's arguments regarding "secret" prior art are not persuasive.

8. Sole Independent Claim 1

a. Preamble [1.0]

The preamble of claim 1 recites: "[a] network system for providing ***data beacons***, comprising." Ex. 1001, 23:2–3 (emphasis added).

Petitioner contends Agarwala teaches the "network system" recited in preamble [1.0]. Pet. 28–29 (citing Ex. 1004 ¶ 39; Ex. 1005, 3:59–62).

Petitioner notes that, to the extent that the preamble is limiting, and with respect to "*providing data beacons*," as recited in preamble [1.0], "the body of claim 1 does not refer to 'data beacons' and instead only recites that 'first data' is written (e.g., [1.3] *from the first write queue to the second parallel file system)* and read (e.g., [1.4] *from the second parallel file system to the second read queue*)." Pet. 29. As such, Petitioner argues that "'data' that is written or read across nodes is an example of a 'data beacon', and Agarwala discloses that its StorFS system writes and read data across nodes (*providing data beacons*)." *Id.* (citing Ex. 1004 ¶ 53; Ex. 1005, 4:50–53). Petitioner also argues that "[d]ata is mirrored from the write log in the write

cache of one node across the network to other nodes for storage in persistent storage." *Id.* (citing Ex. 1004 ¶ 43) (describing asynchronous replication across nodes)).

Petitioner further argues that a POSITA would have "understood that data of different types can be stored in Agarwala's StorFS system based on the applications." Pet. 29. Petitioner provides an example: "[Haghighi] discloses that 'information can be structured, stored, and accessed in the storage system via files, blocks, logical block address (LBA), logical unit number (LUN), key-value pairs, objects, or the like.'" *Id.* (citing Ex. 1007 (Haghighi, US 2016/0100027 A1, filed Jan. 20, 2015, published Apr. 7, 2016) ¶¶ 24, 27; Ex. 1003 ¶ 65).

Petitioner thus contends "data that is written or read across nodes is an example of a 'data beacon' [which] is also consistent with Plaintiff's [Patent Owner's] assertions in the Related Litigation." Pet. 30 (citing Ex. 1006, 3). Therefore, Petitioner concludes that a POSITA would have "understood that Agarwala's StorFS system is *a network system for providing data beacons.*" *Id.*

Patent Owner disagrees and contends: "[t]he term 'data beacon' refers to a signal delivered via one-way casting or one-way multi-casting. The term 'data beacon' should therefore be construed to mean a signal delivered via one-way casting or multi-casting." PO Resp. 19. Patent Owner asserts that, "[b]ecause neither the alleged prior art [Agarwala] nor the '685 provisional application, in isolation, disclose such a data beacon, the Petition does not demonstrate that the challenged claims are unpatentable." *Id.*

Patent Owner further argues that the "Petition does not attempt to interpret the term 'data beacon.' Rather, it assumes that the term 'data beacon' is met if the recitations in the body of the claim are met." PO Resp.

27. Patent Owner notes that "Petitioner argues that any system that writes or reads data across nodes provides a data beacon." *Id.* (citing *e.g.*, Pet. 29–30). Patent Owner asserts that, "[a]s noted above, this position cannot be squared with the [Examiner's] Notice of Allowance" entered during prosecution of the '632 patent. *Id.*

Patent Owner further asserts that "[n]either the Petition nor the supporting declaration asserts that [Agarwala] or any of the other cited prior art uses one-way casting or multi-casting (*i.e.*, one-way casting to multiple recipients)." Pet. 27. Patent Owner contends that, "[b]ecause the Petition provides no explanation as to how the cited art might meet the 'data beacon' limitation, property interpreted, Petitioner's Grounds alleging unpatentability of the Challenged Claims of the '632 patent should be rejected." *Id.*

We note our claim construction analysis as discussed above in section II(A) for the preamble term "data beacons." Regarding Patent Owner's argument that the term "data beacons" "mean[s] a signal delivered via one-way casting or multi-casting" (PO Resp. 19), we agree with Petitioner that "the inventor's 'intent' is not a recognized legal basis for importing limitations into the claims. Instead, Patent Owner had the opportunity to effectuate the intent of the inventors by proposing claim amendments to the present claims in this proceeding, and chose not to do so." Pet. Reply 14. We decline Patent Owner's invitation to read limitations from the '632 patent's specification into the claims.[17]

[17] "It is the claims that measure the invention." *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc) (emphasis omitted). A basic canon of claim construction is that one may not read a

As noted above in our claim construction analysis in section II(A)(4), we do not see how merely writing "first data" from the first write queue to the second parallel file system, as required by function [1.3], and merely reading the "first data" from the second parallel file system and placing the "first data" in the second read queue, as required by function [1.4], can *provide* data beacons, as recited by preamble [1.0], because functions [1.3] and [1.4] merely transfer and store the "first data." Ex. 1001, 23:8–12. As noted by Petitioner, "[w]ith respect to *providing data beacons*, the body of claim 1 does not refer to 'data beacons.'" Pet. 29.

We emphasize that claim 1 is silent regarding *how* the "data beacons" are *created or generated*, so that they may be *provided* as required by preamble [1.0]. *See* Ex. 1001, 23:2–12. Therefore, we agree with Petitioner that the body of claim 1 defines a ***structurally complete invention*** and this claim uses the preamble only to state a purpose or intended use for the invention. Pet. Reply 10 (citing *Catalina Mktg.*, 289 F.3d at 808).

For the reasons we have noted above, we adopt Petitioner's proposed claim construction: "[t]he term "data beacons" recited in the preamble is an intended use and not limiting." Pet. 10; *accord* Pet. Reply 10. Given this claim construction that we have adopted as our own, and based upon our review of the complete record, we find Petitioner has shown that Agarwala teaches preamble limitation [1.0] of claim 1.

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limitation into a claim from the written description. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998).

b. Limitation [1.1]

Limitation [1.1] of claim 1 recites: "a first node comprising a first read queue, a first write queue, and a first parallel file system." Ex. 1001, 23:4–5.

Petitioner argues that "Agarwala discloses that its storage system—the 'StorFS system'—includes storage nodes 102A–C coupled by an interconnection network 116 (a first storage node of which is a *first node*)." Pet. 30–31 (citing Ex. 1005, 3:59–62; Fig. 1). Petitioner further argues that each storage node 102A–C contains a storage controller server 110A–C, which, in turn, contains a write cache and a read cache. *Id.* at 31–32. Lastly, Petitioner argues that Agarwala's StorFS system implements a parallel file system by including a file system and persistent storage. *Id.* at 37–43; *see also* Ex. 1003 ¶¶ 68–92.

Patent Owner does not substantively rebut Petitioner's arguments regarding limitation [1.1] of claim 1 in its Patent Owner Response or Sur-Reply. *See generally* PO Resp, PO Sur-reply.

Based upon our review of the complete record, we find Petitioner has shown that Agarwala teaches limitation [1.1] of claim 1.

c. Limitation [1.2]

Limitation [1.2] of claim 1 recites: "a second node comprising a second read queue, a second write queue, and a second parallel file system." Ex. 1001, 23:6–7.

Petitioner contends "Agarwala discloses this limitation for the reasons discussed in limitation [1.1]. As illustrated in [Agarwala's] Figure 3, a *second storage node* (orange) contains a *write queue* (red), *read queue* (blue), and *parallel file system* (purple)." Pet. 43–44 (referring to Fig. 3 of

Agarwala (Ex. 1005) as reproduced on page 44 of the Petition); *see also* Ex. 1003 ¶ 93.

Patent Owner does not substantively rebut Petitioner's arguments regarding limitation [1.2] of claim 1 in its Patent Owner Response or Sur-Reply. *See generally* PO Resp, PO Sur-reply.

Based upon our review of the complete record, we find Petitioner has shown that Agarwala teaches limitation [1.2] of claim 1.

d. Limitation [1.3]

Limitation [1.3] of claim 1 recites: "wherein the first node writes first data from the first write queue to the second parallel file system." Ex. 1001, 23:8–9.

Petitioner argues that "Agarwala discloses a *first node*, as described above in [limitation] [1.1], that sends data from the write log (*writes first data from the first write queue*) of the first node to persistent storage in another storage controller server (*to the second parallel file system*)." Pet. 45. Petitioner notes that, "[f]or example, this write occurs at least as part of Agarwala's asynchronous replication of data to mirror nodes, where data is written from the write log of Agarwala's write cache in one storage node to other storage nodes to 'efficiently replicate data across the cluster.'" *Id.* (citing Ex. 1004 ¶¶ 41, 43, 59).

With reference to Figure 3 of the '685 provisional application, Petitioner cites to paragraphs 81 and 82. Pet. 46 (citing Ex. 1004 ¶¶ 81–82, Fig. 3). As further evidence, Petitioner refers to an annotated reproduction of Figure 3 of the '685 provisional application. *Id.* at 47 (Ex. 1004, Fig. 3).

Patent Owner argues that with respect to Agarwala, Petitioner "does not even attempt to cite this reference in its analysis of the '632 patent with

respect to element [1.3] of claim 1." PO Resp. 12 (citing Pet. 44–47). Patent Owner contends "the Petition cites only to the '685 provisional application as anticipating element [1.3] of claim 1." *Id.* at 13 (citing Pet. 44–47). Patent Owner notes that "[c]laim 1 is the only independent claim of the '632 patent, from which the remaining six claims of the '632 patent depend." *Id.* Patent Owner thus contends that, "[b]ecause Petitioner fails to show that at least element [1.3] of claim 1 is anticipated by [Agarwala], claim 1 and all dependent claims cannot be found unpatentable on the asserted grounds of the Petitioner and should be rejected." *Id.*

However, for the reasons discussed above, we have found persuasive Petitioner's argument that "[Agarwala] standing alone **includes** the disclosure of the '685 [p]rovisional [a]pplication," by virtue of Agarwala incorporating the ***entirety*** of the '685 provisional application by reference. Pet. Reply 2. As noted by Petitioner, "[t]he Petition makes this clear by asserting a single ground of obviousness over Agarwala which is defined as the combined disclosure of EX-1005 (the '421 Patent) and EX-1004 (the '685 Provisional Application)." *Id.*

Patent Owner does not substantively traverse Petitioner's specific arguments regarding paragraphs 41, 43, 59, 81, and 82 and Figure 3 of the '685 provisional application (Ex. 1004). *See generally* PO Resp, PO Sur-reply. Therefore, Patent Owner does not substantively rebut Petitioner's arguments regarding limitation [1.3] of claim 1 in its Patent Response or Sur-Reply.

We find a preponderance of the evidence supports Petitioner's annotations of Figure 3 of the '685 provisional application (Ex. 1004) indicating that storage node 302A (i.e., "first node" as recited in [1.3]) writes data (i.e., "first data" as recited in [1.3]) from high-speed storage 312A (i.e.,

"first queue" as recited in [1.3]) via elements 308A and 310A to persistent storage 314B (i.e., "second parallel file system as recited in [1.3]), as depicted within second storage node 302B. We also credit Dr. Reddy's testimony that "[a] POSITA also understood that Agarwala's storage system implements a *parallel file system*, including in its in its file system and persistent storage" because this is consistent with the teachings of Agarwala and the '685 provisional application. Pet. 37 (quoting Ex. 1003 ¶ 85); *see also* Ex. 1003 ¶¶ 86–90.

We particularly note paragraph 59 of the '685 provisional application describes: "[i]n one embodiment, the StorFS system logs the incoming updates and writes from the client to fast storage like SSD**,** flash or NVRAM and synchronously replicates them to a remote cluster node." Ex. 1004 ¶ 59 (as cited by Petitioner at Pet. 45). We thus find this description of ***synchronous replication of data*** from storage node 302A to storage node 302B (and 302C) weighs in favor of Petitioner's mapping of limitation [1.3] to Figure 3 of the '685 provisional application. *See* Pet. 37 (quoting Ex. 1003 ¶ 85).

We note paragraph 82 of the '685 provisional application also describes ***asynchronous replication of data*** to other nodes with reference to Figure 3:

> In one embodiment, the asynchronous replication module 310A stores the content to persistent storage 314A. In this embodiment, the asynchronous replication module 310A can additionally replicate this content to the other storage nodes 302B-C via the asynchronous replication modules 310B-C, respectively. These receiving asynchronous replication modules 310B-C, each store the content in the corresponding local [persistent] storage 314B-C, respectively.

Ex. 1004 ¶ 82 (as cited by Petitioner at Pet. 46 (citing Ex. 1004 ¶¶ 81–

82, Fig. 3)).

Based upon our review of the complete record, we find Petitioner has shown that Agarwala teaches limitation [1.3] of claim 1.

e. Limitation [1.4]

Limitation [1.4] of claim 1 recites: "wherein the second node reads the first data from the second parallel file system and places the first data in the second read queue." Ex. 1001, 23:10–12.

Petitioner argues "Agarwala discloses that after data is written into the persistent storage of a second storage node, it will be read from persistent storage and added to the read cache (*the second node reads the first data from the second parallel file system and places the first data in the second read queue*)." Pet. 48. Relying upon Dr. Reddy's testimony, Petitioner contends: "[a] POSITA understood that this read occurs following replication of the data from a first node to a second mirror node as part of an asynchronous replication." *Id.* (citing Ex. 1003 ¶ 98). Petitioner further contends: "[f]or example, Agarwala discloses that when there is a read cache miss for data object, the data object is read from the persistent storage (second *parallel file system*) into the read cache (*second read queue*)." *Id.* (citing Ex. 1005, 10:44–51; Ex. 1004 ¶¶ 61–62; Fig. 9).

Petitioner contends that "Agarwala's reading from persistent storage and placing the read data into a read cache corresponds to the *second node reads the first data from the second parallel file system and places the first data in the second read queue* is also consistent with Plaintiff's assertions in the [related district court case]." Pet. 48–49 (citing Ex. 1006, 11 (reading data from "Cache Drive" or "Capacity Drive" to "read cache" is *reading the first data from the second parallel file system and placing the first data in*

the second read queue)). We note "Plaintiff" in the related district court litigation corresponds to "Patent Owner" here.

Patent Owner disagrees and argues that limitation [1.4] "requires "the first data" be placed into "the second read queue" from "the second parallel file[] system" of the "second node." PO Resp. 14 (citing Ex. 2011 ¶ 39 (Dr. Beck's Declaration)). Patent Owner notes this "*intra-node* movement of data" finds support in the '632 patent. PO Resp. 14 (citing Ex. 1001, Abstr., 7:38–39).

Patent Owner asserts that Petitioner's arguments for limitation [1.4] set forth in the Petition are conclusory. PO Resp. 14–15. Patent Owner argues "[t]he '685 provisional application simply does not teach 'placing the first data in the second read queue' as required by [limitation] [1.4] of claim 1 of the '632 patent." PO Resp. 15 (citing Ex. 2011 ¶ 33).

Patent Owner contends: "[t]he Petition never attempts to correlate 'the first data' that is to be placed in 'the second read queue' with what it calls the 'first data' that was written from the first write queue to the second parallel file system (as recited in element [1.3]) per the '685 provisional application." PO Resp. 15 (citing Ex. 2011 ¶ 33). Patent Owner asserts that "[t]his is an important and fatal omission." *Id.*

Patent Owner further contends that "[t]he 'first data' of [limitation] [1.4] has an antecedent in [limitation] [1.3]." PO Resp. 15 (citing Ex. 2011 ¶ 33). Patent Owner thus argues that "the data being placed in the second read queue must be the same data that was written from the first write queue." *Id.* at 15–16 (citing Ex. 2011 ¶ 33). Patent Owner contends "[t]he Petition makes no effort to show this sameness other than the impermissibly conclusory and unsupported statement of what a POSITA understood." *Id.*

at 16 (citing Ex. 2011 ¶ 33). Patent Owner concludes: "[f]or this reason alone, the Petition fails to render the challenged claims unpatentable." *Id.*

In its Reply, Petitioner disagrees with Patent Owner: "the Petition describes how [Agarwala] discloses that objects are initially read from persistent storage (e.g., SSD 412 or the HDD 410 of FIG. 4) and added to the [Figure 4, L1] read cache [402] where they are held for reading." Pet. Reply 9 (citing Pet. 21 (citing Ex. 1005, 8:27–28, 8:27–55)). *See* Ex. 1005, 8:27–28 ("In one embodiment, an object is initially read from the SSD 412 or the HDD 410 [(i.e., "[1.4] second parallel file system")] and added to the L1 cache 402." i.e., "[1.4] "second read queue").

According to Petitioner, "[t]his describes the normal interaction between a cache and persistent memory storage and would be deemed to be an '[intra]-nodal' movement of data, which [Patent Owner] asserts is not disclosed in Agarwala." *Id.* (citing PO Resp. 14).

Petitioner further notes that "the Petition identifies an example in Agarwala that discloses that when there is a read cache miss for data object, the data object is read from the persistent storage (*second parallel file system*) into the read cache (*second read queue*)." Pet. Reply 9 (citing Pet. 48 (citing Ex. 1005, 10:44–51)). Petitioner thus argues that "whenever a read cache miss occurs at a second node for first data that was previously stored in the persistent storage at the second node, the first data is read from the persistent storage at the second node into the read cache of the second no[d]e." *Id.* at 9–10. Petitioner concludes "this example discloses limitation [1.4] and demonstrates 'an intra-node movement of data' that [Patent Owner] asserts is missing." *Id.* at 10 (citing PO Resp. 14).

Based upon the complete record, we agree with Petitioner that Agarwala teaches limitation [1.4]. Pet. 47–49. More specifically, we credit

Dr. Reddy's testimony which relies upon a teaching of a cache miss in Agarwala, as follows:

> In one embodiment [of Agarwala] s the StorFS system uses the L2 cache in tandem with the L1 cache for a multi-layer DOCL. In one embodiment, the L2 cache works as follows: On L1 cache miss, the object is looked in the L2 cache. If there is hit, the object is read and promoted to the MFU list in the L1 cache. **If there is a miss the object is read from StorFS persistent store and promoted to the MRU list in the L1 cache.**

Ex. 1003 ¶ 99 (quoting Ex. 1005, 10:44–51).

In further support, Dr. Reddy also refers to Figure 9B of the '685 provisional application, and testifies: "The read process is also disclosed in FIG. 9B, where at block 950 content is read from persistent storage upon a ***cache miss*** and placed in the cache storage at block 966." *Id.* (citing Ex. 1004 ¶¶ 61–62; Fig. 9) (emphasis added).

When considered with Figure 9B of the '685 provisional application (including the '685 provisional application's Figure 3 as relied upon above for teaching limitation [1.3]), we find Agarwala (incorporating the '685 provisional application in its entirety) suggests that in the event of a cache miss (Ex. 1005, 10:44–51), the same (i.e., "first data" written from limitation [1.3]) would be "promoted" (i.e., read) from the '685 provisional application's Figure 3 persistent storage 314B (i.e., "second parallel file system" as recited in [1.4], and also corresponding to Ex. 1005, Figure 4 HDD 410 and SSD 412), within second node 302B to high-speed storage 312B (i.e., "second read queue" also corresponding to Ex. 1005 Figure 4 L1 Cache 402). *See* Pet. 48 (citing Ex. 1005, 10:44–51; Ex. 1004 ¶¶ 61–62; Fig. 9); *see also* Ex. 1003 ¶ 99 (quoting Ex. 1005, 10:44–51; citing Ex. 1004 ¶¶ 61–62; Fig. 9).

Therefore, we find a preponderance of the evidence supports Petitioner's argument that "Agarwala discloses that when there is a read cache miss for data object, the data object is read from the persistent storage (second *parallel file system*) into the read cache (*second read queue*)." Pet. Reply 9 (citing Ex. 1005, 10:44–51; Ex. 1004 ¶¶ 61–62; Fig. 9).

Nevertheless, Patent Owner contends "the Petition fails as to [limitation] [1.4] for the separate, [second] independent reason that it does not disclose placement from the second parallel file system into the second read queue." PO Resp. 16. Patent Owner argues that "[limitation] [1.4] requires placement of 'first data' from 'the second parallel file system' of the second node into the 'second read[] queue' at the same 'second node.'" *Id.*

Patent Owner asserts that "the Petition incorrectly attempts to rely on the '685 provisional application's Figure 9B as illustrating a queue to which 'the first data' is copied to from persistent storage, (Pet. at 46–47), to allege a disclosure of [limitation [1.4]]." PO Resp. 17–18 (citing 2011 ¶ 34).

Patent Owner argues "[t]he illustrated elements of Figure 9B fail to disclose the concept of a 'read queue,' and neither block 966 nor paragraphs 0061 and 0062 say anything about cache miss data being placed in cache storage." PO Resp. 18 (citing Ex. 2011 ¶ 36). Patent Owner alleges, "[t]o the contrary, Figure 9B illustrates the process by which a response (either delivery of content or an error) is generated to a request initiated by a client." *Id.*

We have fully addressed these arguments *supra* regarding Patent Owner's first argued reason regarding limitation [1.4].[18]

Patent Owner additionally asserts that "[t]he Petition also attempts to tie, through mere attorney argument, the Figure 9B embodiment of the '685 provisional application to the Figure 5 embodiment of [Agarwala]." PO Resp. 18 (citing Pet. 48). Patent Owner contends "nothing in either document ties them together." *Id.* (citing Ex. 2011 ¶ 43). Patent Owner notes that "the disclosures of [Agarwala] differ greatly from the disclosures of the '685 provisional application. For example, with the exception of Figures 1 and 2, [Agarwala] contains completely different disclosures and drawings." *Id.* at 18–19 (citing Ex. 2011 ¶ 43).

Patent Owner also asserts that "Figure 3 and Figure 9B of the '685 provisional do not even appear in [Agarwala]." PO Resp. 19 (citing Ex. 2011 ¶ 43). Patent Owner further contends that "the '685 provisional application says nothing about L1 and L2 caches and multi-layer DOCL systems and MFU lists." *Id.* Patent Owner notes that, "[a]s another

[18] As we have found above, when considered with Figure 9B of the '685 provisional application (including the '685 provisional application's Figure 3 as relied upon above for teaching limitation [1.3]), ***we find*** Agarwala (incorporating the '685 provisional application in its entirety) suggests that in the event of a cache miss (Ex. 1005, 10:44–51), the same (i.e., "first data" written from limitation [1.3]) would be "promoted" (i.e., read) from the '685 provisional Figure 3 persistent storage 314B (i.e., "second parallel file system" as recited in [1.4], and also corresponding to Ex. 1005, Figure 4 HDD 410 and SSD 412), within second node 302B to high-speed storage 312B (i.e., "second read queue" also corresponding to Exhibit 1005, Figure 4 L1 Cache 402). *See* Pet. 48 (citing Ex. 1005, 10:44–51; Ex. 1004 ¶¶ 61–62; Fig. 9); *see also* Ex. 1003 ¶ 99 (quoting Ex. 1005, 10:44–51; citing Ex. 1004 ¶¶ 61–62; Fig. 9).

example, [Agarwala] says nothing about reading from a combination of writelogs and persistent storage." *Id.*

Patent Owner's arguments in this regard miss the mark. Notably, as we explained above, we agree with Petitioner's assertion:

> To be clear, Agarwala is a single reference that includes the combined disclosure of the '421 [p]atent and the '685 [p]rovisional [a]pplication, and the Petition's use of two different exhibits numbers (EX-1004 and EX-1005) is a necessary mechanism since there is no document that physically embodies the combined disclosure of the '421 [p]atent and the '685 [p]rovisional [a]pplication.

Pet. Reply 8.

We thus agree with Petitioner that it is "improper for [Patent Owner] to treat [Agarwala] and '685 [p]rovisional [a]pplication as separate unrelated disclosures." Pet. Reply 8.

Moreover, given that Patent Owner does not substantively rebut[19] Petitioner's arguments regarding the ***structural*** "network system" portion of preamble [1.0], nor the ***structural elements*** recited in limitations [1.1] and [1.2],[20] our reviewing court guides that "[a] patent applicant is free to recite features of an apparatus either structurally or functionally." *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) (citing *In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971)). Although features of an apparatus or system may be recited either structurally or functionally, claims directed to an apparatus

[19] *See generally* PO Resp, PO Sur-reply.
[20] *See* claimed structural elements: "[1.1] *a first node* comprising *a first read queue, a first write queue*, and a *first parallel file system*; [1.2] *a second node* comprising *a second read queue, a second write queue*, and *a second parallel file system*;" Ex. 1001, 23:4–7 (emphases added).

must be distinguished from the prior art in terms of *structure* rather than *function*. *See Schreiber*, 128 F.3d at 1477–78. Thus, the patentability of an apparatus claim "depends on the claimed structure, ***not on the use or purpose of that structure***," (*Catalina Marketing Int'l*, 289 F.3d at 809 (emphasis added)), because "apparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990) (emphases omitted). To hold otherwise is to find that a new use for an old device is patentable, but such a finding is directly contrary to holding of *Roberts v. Ryer*, 91 U.S. 150, 157 (1875) ("The inventor of a machine is entitled to the benefit of *all the uses* to which it can be put, no matter whether he had conceived the idea of the use or not.") (emphasis added).

These controlling case authorities buttress our finding that Petitioner has established on the complete record that Agarwala teaches limitation [1.4], given that we also agree with Petitioner's mapping of the ***structural elements*** recited in Patent Owner's [1.0] "network system" (i.e., apparatus) to the corresponding features found in Agarwala. *See* Pet. 23–44 (regarding [1.1] "***a first node*** comprising ***a first read queue***, ***a first write queue***, and a ***first parallel file system***;" and [1.2] "***a second node*** comprising ***a second read queue, a second write queue, and a second parallel file system***;") (emphasis added).

f. Remaining Arguments

We have reviewed all of Patent Owner's remaining arguments in the Sur-reply regarding claim 1, but find each of the arguments advanced are premised upon erroneous assumptions that we have previously addressed *supra*. *See generally* PO Sur-reply.

Specifically, for the reasons discussed above, we do not agree with Patent Owner's section (A), i.e., that Petitioner misinterprets the law of incorporation by reference in light of *Advanced Display*, 212 F.3d at 1283. PO Sur-reply 3–11. For the reasons also discussed above, we do not agree with Patent Owner's section (B), i.e., that the MPEP guidance on cancellation is applicable, because as we have emphasized above, Agarwala incorporates the '685 provisional application in its ***entirety***. PO Sur-reply 12–13.

Regarding Patent Owner's section C of its Sur-reply, we do not agree that Petitioner's Footnote Discussion of MPEP § 2127(I) (re: abandoned applications, including provisionals) is incomplete and flawed." PO Sur-reply 13–15. We understand Petitioner as just saying that abandoned provisional applications can be relied on if they are incorporated by reference into a patent. Reply 5 n.1.

Regarding Patent Owner's section D argument in its Sur-reply (i.e., Petitioner steadfastly avoids the fact that the '685 provisional application and Agarwala describe different inventions), we refer Patent Owner to our discussion *supra* noting that Agarwala incorporates the '685 provisional application in its ***entirety***. PO Sur-reply 15–16.

Regarding Patent Owner argument III ("III. PETITIONER'S REPLY DOES NOT DISPUTE THAT THE '685 PROVISIONAL APPLICATION OR [AGARWALA]—INDEPENDENTLY—DO NOT **ANTICIPATE** THE CHALLENGED CLAIMS"), we agree with Petitioner that "[i]n several places, [Patent Owner] asserts that the Petition fails to show that certain claim elements are ***anticipated*** by [Agarwala] or the '685 [p]rovisional [a]pplication." Pet. Reply 8 (emphasis added) (citing PO Resp. 6, 12).

Petitioner correctly notes that "the *Petition does not contain any* ***anticipation*** *analysis*. Instead, [the sole ground] is based on a single reference obviousness challenge based on a single reference, i.e., the combined disclosure of [Agarwala] and the '685 [provisional application]." *Id.* (emphasis added).

Accordingly, we find ***all*** of Patent Owner's references to ***anticipation*** throughout its briefing fail to address Petitioner's challenge of all claims 1–7 on the ***sole ground*** of obviousness over a ***single reference*** (i.e., Agarwala that we have found *supra* properly incorporates by reference its '685 provisional application in its entirety).

g. Conclusion for Claim 1

Having considered the arguments and evidence presented by both the Petitioner and Patent Owner, we find Petitioner has shown that Agarwala teaches or suggests all limitations of claim 1.

9. Dependent Claim 2

Claim 2 recites:

> The network system of claim 1, wherein the second node writes second data from the second write queue to the first parallel file system; and
>
> wherein the first node reads the second data from the first parallel file system and places the second data in the first read queue.

Ex. 1001, 23:13–18.

Petitioner first notes, "as set forth above (*see* [limitations] [1.3] and [1.4]), Agarwala discloses *the first node writes first data from the first write queue to the second parallel file system* and *the second node reads the first*

data from the second parallel file system and places the first data in the second read queue." Pet. 49. Petitioner secondly notes "Agarwala also discloses that any of the storage nodes can write to a different storage node within the network." *Id.* (citing Ex. 1004 ¶¶ 7–8 (mirroring across multiple nodes); Ex. 1005, 4:7:6–12; Fig. 2 (Fault Tolerance 204 (mirroring)).

Petitioner then contends:

> A POSITA understood that just as first data is written from the first write queue of the first node of Agarwala to the second parallel file system of the second node of Agarwala, and that first data is placed in the second read queue (*see* [limitations] [1.3] and [1.4]), other (second) data can also be written from the second write queue of the second node of Agarwala to the first parallel file system of the first node of Agarwala, and that second data is then placed in the second read queue. EX-1003 ¶ 104. Therefore, Agarwala discloses or renders obvious that the second node writes second data from the second write queue to the first parallel file system; and wherein the first node reads the second data from the first parallel file system and places the second data in the first read queue.

Pet. 50 (emphasis omitted).

Patent Owner advances no separate, substantive arguments for claim 2. *See generally* PO Resp., PO Sur-reply.

Having considered the arguments and evidence presented by Petitioner, we find Petitioner has shown that Agarwala teaches all limitations of claim 2.

10. Dependent Claim 3

Claim 3 recites: "[t]he network system of claim 1, wherein the first data is a carrier file comprising a header, a body, and a footer." Ex. 1001, 23:19–20.

Petitioner contends that "Agarwala's storage nodes are coupled together by interconnection network." Pet. 51 (citing Ex. 1004 ¶¶ 39, 116,

Fig. 1; Ex. 1004, 3:59–62, Fig. 1). Petitioner argues that "[a] POSITA understood that communications between storage nodes over Agarwala's interconnection network would use packets." *Id.* (citing Ex. 1003 ¶ 108). Petitioner thus concludes, as Patent Owner does in its infringement contentions filed in the related district court case, "it can be inferred that Agarwala discloses *wherein the first data is a carrier file comprising a header, a body, and a footer*." *Id.; see also* Ex. 1006, 28.

Petitioner argues that, "[t]o the extent that [Patent Owner] asserts that Agarwala does not expressly use the term carrier file, a POSITA understood that data of different types could be stored in Agarwala's StorFS system based on the applications." Pet. 52 (citing Ex. 1003 ¶ 111). Petitioner notes that a POSITA also "understood a common way to move data around is using carrier files, and thus it would be obvious to modify the teachings of Agarwala to use carrier files." *Id.*

Petitioner further argues that a "POSITA understood that a common structure of a carrier file included a header, footer and body." Pet. 52 (citing Ex. 1003 ¶ 113). Petitioner further notes that a "POSITA would be motivated to use carrier files for sending the first data from the cache of the first node to the second node for storage in persistent storage because it would have provided an efficient method of transferring data in bulk." *Id.* (citing Ex. 1003 ¶ 114). Petitioner contends that, indeed, "Agarwala discloses that in embodiments its systems transfer data as a large bulk transfer so that this data transfer is more efficient." *Id.* (citing Ex. 1004 ¶ 43).

Patent Owner advances no separate, substantive arguments for claim 3. *See generally* PO Resp., PO Sur-reply.

Having considered the arguments and evidence presented by Petitioner, we find Petitioner has shown that Agarwala teaches all limitations of claim 3.

11. Dependent Claim 4

Claim 4 recites: "[t]he network system of claim 3, wherein the first nodes subsequently writes additional data to the first parallel file system." Ex. 1001, 24:1–3.

Petitioner contends that "Agarwala discloses that the first node writes first data to the persistent storage of the first node (*first parallel file system)*. For example, Agarwala discloses that, 'when the write log is full, the SC server flushes the write log to persistent storage.'" Pet. 53 (citing Ex. 1004 ¶¶ 42; Ex. 1005, 11:64–67). Petitioner also argues that a "'flusher' moves the logged content asynchronously from the high-speed storage to its permanent location for persistence." *Id.* (citing Ex. 1004 ¶¶ 59, 69–70 (describing asynchronous flush of data to persistent storage of target node and mirror nodes); FIGS. 3, 11B).

Petitioner contends a POSITA would have understood:

> Agarwala discloses that there would be writes of data beyond the first data (i.e., *additional data*) after (*subsequently*) to the write of the first data during normal system operation in Agarwala, because that is the purpose of moving the first data from the write log to persistent storage, i.e., to allow additional data to be stored in the write log and then also be written from the write log to persistent storage.

Pet. 53 (citing Ex. 1003 ¶ 117). Petitioner thus concludes that "Agarwala discloses *wherein the first nodes subsequently writes additional data to the first parallel file system*." *Id.*

Patent Owner advances no separate, substantive arguments for claim 4. *See generally* PO Resp., PO Sur-reply.

Having considered the arguments and evidence presented by Petitioner, we find Petitioner has shown that Agarwala teaches all limitations of claim 4.

12. Dependent Claim 5

Claim 5 recites: "[t]he network system of claim 4, wherein the additional data is written at a set frequency." Ex. 1001, 24:4–5.

Petitioner argues: "[a]s discussed with respect to Claim 4, the 'flusher' of Agarwala moves data from the high speed cache storage to the persistent storage." Pet. 54. Petitioner argues that "Agarwala further discloses that the 'flusher' operates 'periodically' to move (*write*) the data to persistent storage: 'New incoming writes are logged and synchronously replicated in SSDs or other high-speed storage medium. **Periodically**, a "flusher" 308A-C moves the logged content asynchronously from the high-speed storage to its permanent location for persistence.'" *Id.* (citing Ex. 1004 ¶ 83).

Petitioner further argues that a POSITA would have understood that "Agarwala uses 'synchronous' to refer to writes from the client to the write log of fast storage and replication to its mirror nodes, and uses 'asynchronous' to refer to the operation where data is moved or 'flushed' from high-speed storage to persistent storage of the node and replicated to its mirror nodes." Pet. 54 (citing Ex. 1003 ¶ 121; Ex. 1004 ¶¶ 7, 8, 41, 43, 59, 69, 83). Petitioner argues "[t]hese 'asynchronous' operations occur[] on a scheduled basis, i.e., *at a set frequency,* as noted above." *Id.* (citing Ex. 1004 ¶ 83). Petitioner concludes: "[t]herefore, a POSITA understood that

that Agarwala discloses *wherein the additional data is written at a set frequency*." *Id.* at 54–55 (citing Ex. 1003 ¶ 123).

Patent Owner argues that with respect to Agarwala, Petitioner "does not even attempt to cite this reference in its analysis of the '632 patent with respect to . . . claim 5." PO Resp. 12 (citing Pet. 54). Patent Owner notes that the Petition cites to only the '685 provisional application in its anticipation analysis for claim 5. *Id.* at 13 (citing Pet. 53–56). Patent Owner argues that, "[f]or the same reasons stated above for claim 1, at least dependent claims 5, 6, and 7 cannot be found unpatentable on the asserted grounds of the Petitioner and should be rejected." *Id.*

As an initial matter, as argued by Petitioner above, there is no proposed anticipation ground. Pet. Reply 8 (citing PO Resp. 6, 12). In any event, based on the complete record, Patent Owner does not substantively traverse Petitioner's specific arguments regarding paragraphs 7, 8, 41, 43, 59, 69, and 83 of the '685 provisional application (Ex. 1004). *See also generally* PO Resp, PO Sur-reply. Therefore, Patent Owner does not substantively rebut Petitioner's arguments regarding claim 5 in its Patent Owner Response or Sur-Reply.

Having considered the arguments and evidence presented by both the Petitioner and Patent Owner, we find Petitioner has shown that Agarwala teaches or suggests all limitations of claim 5.

13. Dependent Claim 6

Claim 6 recites: "[t]he network system of claim 4, wherein the additional data only contains information that has changed since the first data was written." Ex. 1001, 24:6–8.

Petitioner argues that "Agarwala discloses a deduplication module located within the flusher described above in connection with Claim 4." Pet. 55 (citing Ex. 1004 ¶ 104, Fig. 6). Petitioner notes the "deduplication module contains deduplication analyzer that 'generates the dedup hint table by analyzing the streams of new objects that are written to the storage.'" *Id.* (quoting Ex. 1004 ¶ 104) (citing Ex. 1004, Fig. 6). Petitioner also notes the "dedup hint table is used 'to determine whether data is being duplicated.'" *Id.* (quoting Ex. 1004 ¶ 45). Petitioner notes the "writelog flusher checks the dedup table to avoid storing duplicates to the persistent storage." *Id.* (quoting Ex. 1004 ¶ 104).

Petitioner reproduces paragraph 42 of the '685 provisional application in pertinent part:

> In one embodiment, during the flushing operation, the StorFS system, determines if an entity is stored elsewhere by using a deduplication hints table. In one embodiment, the hints table stores characteristics of the top-K storage entities in the StorFS system. If there is match with the entity being flushed, the StorFS system updates the metadata for this entity, but does not flush the entity to the persistent storage. If not, the StorFS system flushes the entity to persistent storage.

Pet. 55–56 (citing Ex. 1004 ¶ 42).

Petitioner concludes that, "[b]y not writing duplicate data to persistent storage, a POSITA understood that Agarwala discloses that *additional data only contains information that has changed since the first data was written*." Pet. 56 (citing Ex. 1003 ¶ 126).

Patent Owner argues that, with respect to Agarwala, Petitioner "does not even attempt to cite this reference in its analysis of the '632 patent with respect to . . . claim 6." PO Resp. 12 (citing Pet. 55–56). Patent Owner emphasizes that the Petition cites to only the '685 provisional application in

its ***anticipation*** analysis for claim 6. *Id.* at 13 (citing Pet. 53–56). Patent Owner thus argues that, "[f]or the same reasons stated above for claim 1, at least dependent claims 5, 6, and 7 cannot be found unpatentable on the asserted grounds of the Petitioner and should be rejected." *Id.*

As an initial matter, as argued by Petitioner above, there is no proposed ***anticipation*** ground. Pet. Reply 8 (citing PO Resp. 6, 12). In any event, based on the complete record, Patent Owner does not substantively traverse Petitioner's specific arguments regarding paragraphs 42, 45, and 104 and Figure 6 of the '685 provisional application (Ex. 1004). *See generally* PO Resp; PO Sur-reply. Therefore, Patent Owner does not substantively rebut Petitioner's arguments regarding claim 6 in its Patent Owner Response or Sur-Reply.

Having considered the arguments and evidence presented by both the Petitioner and Patent Owner, we find Petitioner has shown that Agarwala teaches all limitations of claim 6.

14. Dependent Claim 7

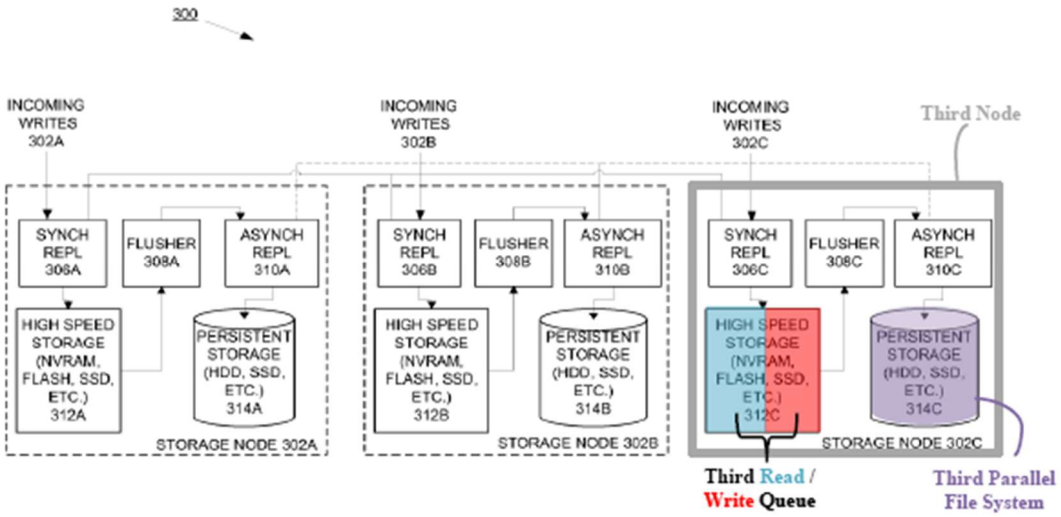
Claim 7 recites:

> [7.0] The network system of claim 1, further comprising a third node comprising a third read queue, a third write queue, and a third parallel file system;
> [7.1] wherein the first node writes first data from the first write queue to the second and third parallel file systems at the same time; and
> [7.2] wherein the third node reads the first data from the third parallel file system and places the first data in the third read queue.

Ex. 1001, 24:9–17.

At the outset, we note that Patent Owner only argues limitation [7.1] of claim 7 in its Patent Owner Response: i.e., that with respect to Agarwala, Petitioner "does not even attempt to cite this reference in its analysis of the '632 patent with respect to . . . element 7.1 of claim 7." PO Resp. 12 (citing Pet. 57–59). Based on the complete record, we find Petitioner has shown that limitations [7.0] and [7.2] are taught by Agarwala. *See* Pet. 56–57, 59.

Regarding disputed limitation [7.1], Petitioner provides (Pet. 56) an annotated drawing of Figure 3 of the '685 provisional application, as depicted below:



Shown above, Figure 3 of the '685 provisional application (Ex. 1004), as annotated by Petitioner regarding the third read/write queue and third parallel file system of the third node.

Regarding disputed limitation [7.1], Petitioner contends:

"First, as analyzed with respect to [limitation] [1.3], Agarwala's first storage node (*first* node) writes data (*first data*) from the write log of the write cache (*first write queue*) to the persistent storage of the second storage node (*second parallel file system*) as part of asynchronous replication." Pet. 57 (citing limitation [1.3]).

"Second, Agarwala discloses that this asynchronous replication involves replication to multiple storage nodes. For example:"

> In this embodiment, the asynchronous replication module 310A can additionally replicate this content to the other storage nodes 302B-C via the asynchronous replication modules 310B-C, respectively. These receiving asynchronous replication modules 310B-C, each store the content in the corresponding local perspective storage 314B-C, respectively.

Pet. 57 (quoting Ex. 1004 ¶ 82). Petitioner argues that a POSITA would have "understood that one of the multiple mirror nodes would be the second node and the other, the third node. *Id.* (citing Ex. 1003 ¶ 131).

Petitioner further contends that a POSITA would have understood that "Agarwala uses 'asynchronous' to refer to the operation where data is moved or 'flushed' from high-speed storage to persistent storage of the node and simultaneously replicated to its mirror nodes." Pet. 58 (citing Ex. 1003 ¶ 132; Ex. 1004 ¶¶ 8, 43, 59, 69, 83). Petitioner notes that "[t]hese 'asynchronous' operations occur[] on a scheduled basis, i.e., *at a set frequency,* as noted above." *Id.* (citing Ex. 1004 ¶ 83). Petitioner, therefore, asserts that a POSITA would have "understood that periodically, asynchronous replication module 310A of the first node would replicate data to the second and third storage nodes, and that this replication to the second and third storage nodes would occur *at the same time* because it is efficient to make multiple copies at the same time at the first node to send to the second and third nodes." *Id.* (citing Ex. 1004 ¶ 70, Fig. 11B (one step 1156 of "Asynchronously Send the Data and Metadata to the Vnode and Mirror Nodes in the AMS); Ex. 1003 ¶ 134).

In addition, Petitioner argues:

> To the extent that [Patent Owner] asserts that the Agarwala ['421 patent] does not expressly state that the first data is replicated at the second and third nodes *at the same time*, a POSITA, understood that a common way to replicate data to multiple locations was to do so at the same time, and thus it would be obvious to modify the teachings of Agarwala so that asynchronous replication module 310A is programmed to replicate first data at the second and third nodes at the same time because doing would be a more efficient use of resources and was a common and well-known technique that had predictable results. A POSITA understood that writing to multiple nodes at the same time provided the benefit of keeping replicas consistent across the system.

Pet. 58–59 (citing Ex. 1003 ¶ 135).

Petitioner concludes regarding limitation [7.1]: "[t]herefore, a POSITA understood that Agarwala discloses that a *first node writes first data from the first write queue to the second and third parallel file system at the same time*." Pet. 59.

Patent Owner notes that the Petition cites to only the '685 provisional application in its ***anticipation*** analysis for element [7.1] of claim 7. PO Resp. 13 (emphasis added) (citing Pet. 57–59). Patent Owner argues that, "[f]or the same reasons stated above for claim 1, at least dependent claims 5, 6, and 7 cannot be found unpatentable on the asserted grounds of the Petitioner and should be rejected." *Id.*

As an initial matter, as argued by Petitioner above, there is no proposed ***anticipation*** ground. Pet. Reply 8 (citing PO Resp. 6, 12). In any event, based upon the complete record, Patent Owner does not substantively traverse Petitioner's specific arguments regarding paragraphs 8, 43, 59, 69, and 83 of the '685 provisional application. *See generally* PO Resp; PO Sur-

reply. Therefore, Patent Owner does not substantively rebut Petitioner's arguments regarding claim element 7.1 in its Patent Owner Response or Sur-Reply.

Having considered the arguments and evidence presented by both the Petitioner and Patent Owner, we find Petitioner has shown that Agarwala teaches all limitations of claim 7.

III. ADDITIONAL ISSUE

In reviewing the complete record, we note that Exhibit 2013 (page 7) filed by Patent Owner in this proceeding is incorrectly identified by Patent Owner in its Sur-reply "Table of Exhibits" (page iv), as being from Agarwala application No. 14/135,489, as reproduced below:

Ex. 2013	Agarwala Application No. 14-135,489, filed 2013-12-19

Patent Owner's Sur-Reply "TABLE OF EXHIBITS," page iv, is shown above, regarding its incorrect application number listing for Exhibit 2013.

Upon close inspection, we find Exhibit 2013 includes an Application Data Sheet (ADS) for a different (but related) patent application 14/135,48**5** to Agarwala (also filed on December 19, 2013, and also claiming the entitlement to the benefit of the earlier filing date of the '685 provisional application). *See* Ex. 2013, 4 (showing Application Number "14135485"). *Therefore, Exhibit 2013 does not appear to be relevant to this IPR proceeding*.

Related application 14/135,48**5** (i.e., related to the Agarwala '421 patent and '489 application) issued as U.S. Patent No. 9,521,198 B1 on December 13, 2016. In contrast to the '489 Agarwala patent application we consider in this Decision, page 12 of Exhibit 2013 ***does not have*** the AIA (First Inventor to File) ***checked box*** for application 14/135,485. We therefore emphasize that Exhibit 2013 that includes an ADS from application 14/135,485 (now U.S. Patent No. 9,521,198 B1) *should not be confused with the '489 application prosecution file history that is relevant here*.

In reviewing the complete record, including the public prosecution history of Agarwala (i.e., the '421 patent), we reproduce (in pertinent part) page 5 of the first Application Data Sheet (ADS), as filed under 37 C.F.R. § 1.76 on December 19, 2013, in the file of the '489 application that issued as Agarwala:

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☒	This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☒	Authorization to Permit Access to the Instant Application by the Participating Offices

Shown above in part is page 5 in part of the Application Data Sheet (ADS) filed under 37 C.F.R. § 1.76 on December 19, 2013 in the Agarwala '421 patent application file that includes

> *a Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications, and an authorization to permit access to the instant Application by the participating (foreign) offices.*

We note that the applicant checked the box that indicates "[b]y providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, ***will be examined under the first inventor to file provisions of the AIA***." *Id.* (emphasis added). This ADS renders Patent Owner's arguments *supra* regarding *Dynamic Drinkware* inconsequential. *See* PO Resp. 30–32.

IV. CONCLUSION

The table below summarizes our conclusions as to the challenged claims:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–7	103	Agarwala	1–7	

V. ORDER

Accordingly, it is

ORDERED that, based on a preponderance of the evidence, claims 1–7 of U.S. Patent No. 11,146,632 B2 have been shown to be unpatentable; and

FURTHER ORDERED that that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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