

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETAPP, INC.,
Petitioner,

v.

KOM SOFTWARE, INC.,
Patent Owner.

IPR2019-00601
Patent 7,392,234 B2

Before KIMBERLY McGRAW, DANIEL J. GALLIGAN, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

NetApp, Inc. (“Petitioner”)¹ filed a Petition to institute an *inter partes* review of claims 1–7, 45–57, and 59 (the “challenged claims”) of U.S. Patent No. 7,392,234 B2 (“the ’234 patent”). Paper 3 (“Pet.”). KOM Software, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of all challenged claims. Paper 10 (“Dec.”).

Patent Owner filed a Response (Paper 13, “PO Resp.”), Petitioner filed a Reply (Paper 15, “Reply”), and Patent Owner filed a Sur-Reply (Paper 19, “Sur-Reply”). An oral hearing was held on May 6, 2020, and a copy of the transcript was entered into the record. Paper 28 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the claims on which we instituted trial. Having reviewed the arguments of the parties and the supporting evidence, we determine that Petitioner has shown, by a preponderance of the evidence, that the challenged claims of the ’234 patent are unpatentable.

B. Related Proceedings

Concurrent with the instant Petition, Petitioner filed another petition for *inter partes* review of the ’234 patent in IPR2019-00603. Pet. 68; Paper 8, 2.

The parties state that the ’234 patent is involved in (1) *KOM Software Inc. v. Hitachi Vantara Corp.*, Case No. 1-18-cv-00158 (D. Del.); (2) *KOM*

¹ Hewlett Packard Enterprise Co. settled with Patent Owner and is no longer a part of this proceeding. *See* Paper 25.

Software Inc. v. Hewlett Packard Enterprise Co., Case No. 1-18-cv-00159 (D. Del.); and (3) *KOM Software Inc. v. NetApp, Inc.*, Case No. 1-18-cv-00160 (D. Del.). Pet. 68; Paper 5, 3; Paper 8, 2. The parties also state there are a number of related proceedings including: IPR2019-00591, IPR2019-00592, IPR2019-00594, IPR2019-00597, IPR2019-00598, IPR2019-00600, IPR2019-00603, IPR2019-00604, IPR2019-00605, IPR2019-00606, IPR2019-00607, and IPR2019-00608. Pet. 68; Paper 5, 2–3; Paper 8, 3.

C. The '234 Patent

The '234 patent, titled “Method and system for electronic file lifecycle management,” relates generally to methods that associate a set of policies with each electronic file or storage used for each electronic file, where the policies control the lifecycle of the associated electronic files stored on the system. Ex. 1001, code (57), 2:44–53, 4:66–5:11, 5:33–6:60. As shown in Figure 2, reproduced below, a virtual filing cabinet can be used to manage the lifecycle of a file.

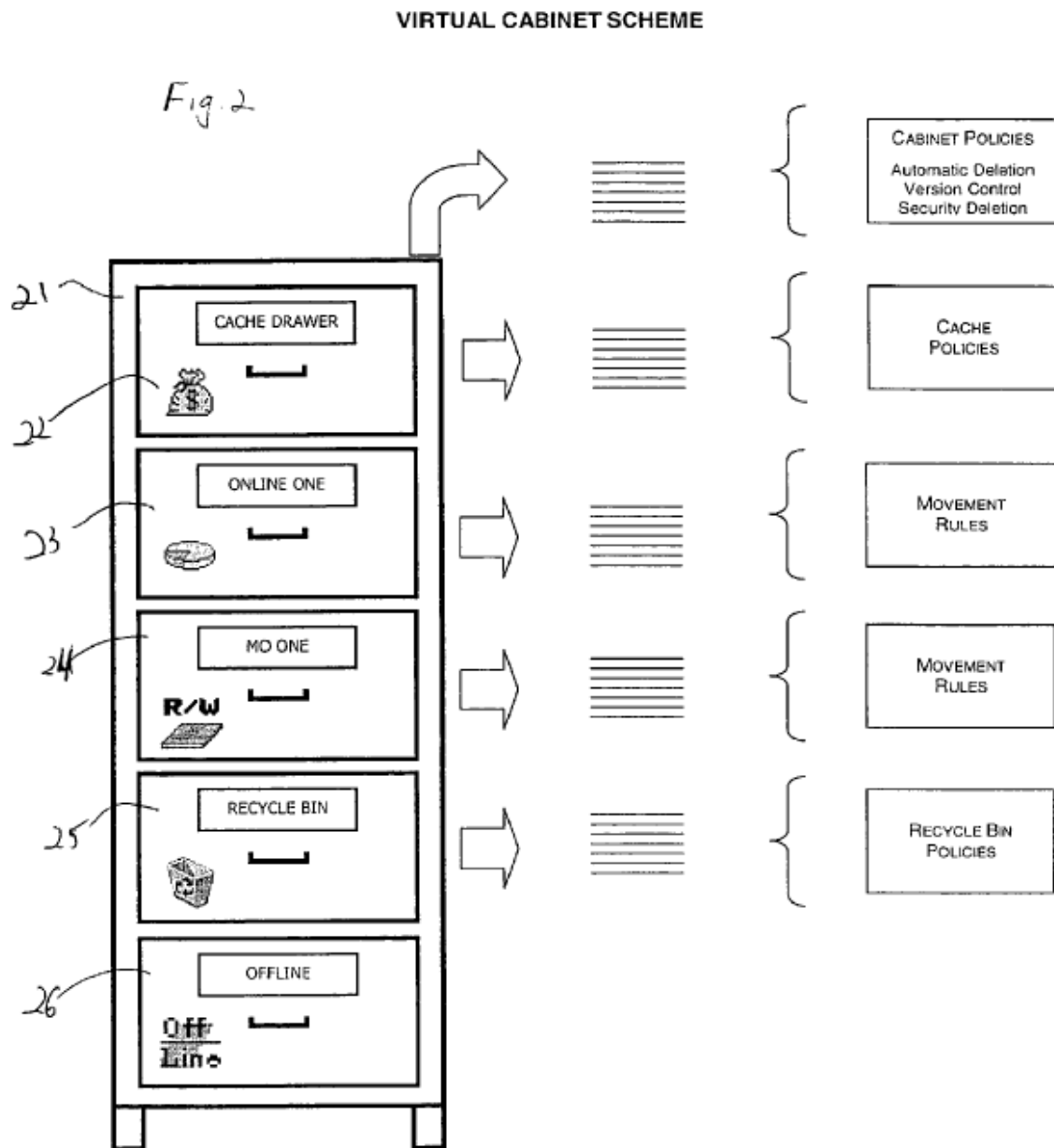


Figure 2 above illustrates a virtual filing cabinet. *Id.* at 3:65. Files can be automatically moved between virtual drawers of the filing cabinet based on managing policies “and as such, a file’s lifecycle is managed from file creation to file deletion in an automated fashion.” *Id.* at code (57). The virtual cabinet and drawers can span multiple storage media and can be indefinite in size. *Id.* at 4:29–34.

D. Illustrative Claim

Of the challenged claims, claims 1, 45, and 51 are independent. Each of dependent claims 2–7, 46–50, 52–57, and 59 depends directly or indirectly from its respective independent claim 1, 45, or 51. Illustrative claim 1, with bracketed material added, is reproduced below.

1. [a] A computer-implemented method of managing a file lifecycle, the method comprising the steps of storing data on a storage medium comprising:

[b] associating a set of lifecycle policies with a file in a file system, wherein said lifecycle policies relate to aspects of file classification and file disposition including at least one of: file creation, file retention, file reference, file non-use, file security, file protection, file preservation, file storage locations within a storage medium, cost effective storage of a file, or file expiration;

[c] storing said file on said storage medium accessible by a computer according to said set of lifecycle policies;

[d] automatically determining from the associated lifecycle policies whenever said file is to be moved;

[e] automatically moving said file according to the associated lifecycle policies to another storage location within said storage medium or within a different storage medium whenever the associated lifecycle policies determine that said file is to be moved; and

[f] receiving an access request for said file from an application;

[g] providing transparent access to said requested file based on said associated set of lifecycle policies, regardless of where said file is located, and independently of said application requesting access to said file.

Ex. 1001, 14:1–28.

E. Instituted Ground

Petitioner contends that the challenged claims are unpatentable on the following ground:²

Claims Challenged	35 U.S.C. § ³	References
1–7, 45–57, 59	103(a)	Sitka, ⁴ Cannon ⁵

a. Sitka

Sitka “relates to data storage and, more particularly, to systems and methods for hierarchical storage management [(HSM)].” Ex. 1005, 1:9–11. “The system and method are especially useful in managing the storage of larger files that include graphic imagery.” *Id.* at 1:65–67. The system can be used to group multiple images for storage and to apply processes to multiple images in a batch. *Id.* at 2:4–13, 2:33–53.

Sitka describes its system as a “directed storage management (‘DSM’) system” that “allows a system administrator to introduce, on a selective and reconfigurable basis, significant direction concerning storage management policies including migration.” *Id.* at 8:13–17. Sitka explains that its system differs from a “simple” HSM system because clients and an administrator “have the ability to direct a file to a particular location” and the system “provides a much broader set of data-movement policies than a typical HSM.” *Id.* at 8:17–26.

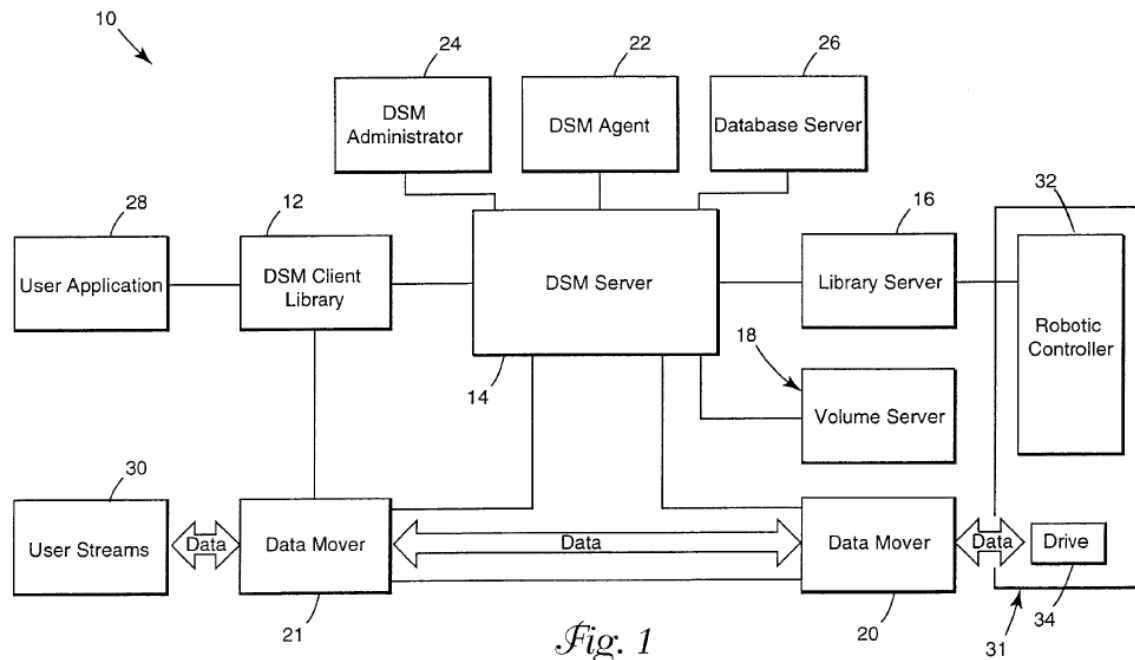
² Petitioner supports its challenge with a Declaration of Darrell Long, Ph.D. (Ex. 1002) (“Long Decl.”).

³ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102 and 103 that became effective after the filing of the application for the ’234 patent. Therefore, we apply the pre-AIA versions of these sections.

⁴ Ex. 1005, U.S. Pat. 6,330,572 B1 (Dec. 11, 2001) (“Sitka”).

⁵ Ex. 1006, U.S. Pat. 6,021,415 (Feb. 1, 2000) (“Cannon”).

Figure 1 of Sitka, reproduced below, illustrates the architecture of the DSM system.



As shown in Figure 1, DSM system 10 is implemented as a software system having a collection of logical software components. *Id.* at 8:50–52. The DSM server works in conjunction with DSM Agents 22 to implement policies set up by the administrator, including migrating files from one DSM storage location to another or deleting files of a certain age. *Id.* at 16:66–17:14. The DSM server is also connected to a database server that maintains information including “file metadata, including the security attributes and media locations of each file [and] . . . policy parameters used by the DSM server and DSM agents.” *Id.* at 17:15–30.

Sitka teaches numerous policies for maintaining copies of files in stores and dealing with media and volumes. *Id.* at 17:32–43. Exemplary policies include: (1) a migration policy (*id.* at 17:44–53), (2) a deletion policy (*id.* at 17:54–18:1), (3) a chunking policy (*id.* at 18:4–10), (4) a volume selection policy (*id.* at 18:10–19), (5) a drive selection policy (*id.* at

18:20–22), (6) a shelf management policy (*id.* at 18:23–38), (7) an inventory policy (*id.* at 18:39–42), and (8) various miscellaneous policies (*id.* at 18:42–45).

For example, Sitka’s migration policy is used to migrate files from one DSM store to another, “e.g., from a RAID disk to a magneto optical (MO) drive and/or to a tape drive.” *Id.* at 17:2–6. Sitka discloses that a migration policy may consider factors such as (1) remaining free space, (2) target stores (e.g., collecting like media in one place), (3) ranking criteria such as age and recent use, and (4) a migration time window. *Id.* at 17:44–53, 8:31–32.

b. Cannon

Cannon “relates to the storage of digital data signals.” Ex. 1006, 1:9–10. “[T]he subsystem creates a contiguous managed file by aggregating selected received user files in accordance with certain predetermined criteria.” *Id.* at 2:20–24. The system manages storage space by reclaiming space when certain criteria are met, after files have been deleted from the storage. *Id.* at code (57); *see also id.* at 2:48–62.

II. ANALYSIS

A. Legal Standards for Obviousness

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under 35 U.S.C. § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial

success, long-felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. Neither party has presented evidence or argument directed to secondary considerations. The other *Graham* factors are addressed below.

B. Level of Ordinary Skill

Petitioner contends a person of ordinary skill in the art (a “POSA”) “would have held either a bachelor’s degree in computer engineering or computer science with two years of experience in the field of data storage management or a master’s degree in either discipline with an emphasis on data storage management.” Pet. 9 (citing Long Decl. ¶¶ 33–36). Patent Owner provides a similar definition, stating a POSA “should have a bachelor’s degree in electrical engineering, computer science, or equivalent with two years or more of experience in computing systems development; a master’s degree in electrical engineering, computer science, or equivalent; or comparable computing systems work experience.” PO Resp. 6–7 (citing Declaration of Dr. Jose Luis Melendez ¶ 33, (Ex. 2001) (“Melendez Decl.”)); *see* Melendez Decl. ¶ 33 (Dr. Melendez testifying that a POSA may also have a degree in electronics engineering or applied mathematics).

Thus, the parties dispute whether a POSA must have a degree in computer science/engineering or whether a POSA could instead have a degree in electrical engineering as well as whether the POSA’s experience must be in data storage management or could encompass experience in the field of computing systems development.

Although the parties articulate different levels of skill for a POSA, neither party explains how its recited level of skill impacts the obviousness analysis such that application of one proposal versus the other would lead to different ultimate outcomes.

Based on the record before us, including the types of problems and solutions described in the '234 patent and the cited prior art, we determine that a person of ordinary skill in the art would have had a bachelor's degree in a technical field such as computer engineering, computer science, electrical engineering, electronics engineering, applied mathematics, or their equivalent, with two years of experience in the field of computing systems development, including fields of data storage management or file storage and manipulation; a master's degree in such a technical field; or comparable computing systems work experience. We further note that our analysis would be the same under either parties' definition.

C. Claim Construction

In an *inter partes* review, a claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b) (2019). Under this standard, claim terms are given their ordinary and customary 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. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). If the specification “reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor’s lexicography governs.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)).

For purposes of this Decision, we only find it necessary to provide some construction of the term “transparent access,” as discussed below. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d

1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

a. Transparent Access

Petitioner asserts that no claim constructions are required to resolve the disputes in the present action. *See* Pet. 9–10. However, Patent Owner asserts that Petitioner has implicitly provided an incorrect claim construction of the term “transparent access,” which is present in each of challenged independent claims 1, 45, and 51. PO Resp. 8. Patent Owner asserts that Petitioner’s definition is: “access [to] the file regardless of the file’s new location and without having to know where the file is physically located.” *Id.* (quoting Dec. 11 and citing Pet. 35).

In contrast, Patent Owner argues that the term “transparent access” should be construed to mean: “[a]s far as the user is concerned the file is stored in a particular directory on a particular drive,” but it actually resides elsewhere. PO Resp. 8 (quoting Ex. 1001, 5:63–64); *see also id.* at 8–9 (stating because the ’234 patent operates at the file system level, the user is “provided by the file system the fiction that a file resides and resided on a particular directory on a particular drive”).

There are two differences between these claim constructions. Whether or not “transparent access” requires “access [to] the file regardless of the file’s new location” and whether or not “transparent access” requires a user to know or believe that the file is located in a particular location.

The first difference is not actually an issue in the sense that it is explicitly required by the claims. Each of independent claims 1, 45, and 51

requires “providing transparent access to said requested file . . . regardless of where said file is located.” Ex. 1001, 14:25–27, 18:48–50, 19:36–38. Thus, “regardless of where said file is located” does provide insight into the meaning of “transparent access,”⁶ but it does not differentiate Patent Owner and Petitioner’s positions as to what the claims require.

Thus, the actual dispute centers around whether or not transparent access requires a user to know or believe that the file is located in a particular location. For the reasons discussed below, we determine that though transparent access allows for the user to falsely believe the file is located in a particular location, it does not require such belief.

The ’234 patent does not use the term “transparent access.” When discussing “a method of file lifecycle management” (Ex. 1001, 5:32–33), it describes a transparent use of a virtual storage cabinet, stating:

The use of storage cabinet or drawer is completely transparent to the user. As far as the user is concerned the file is stored in a particular directory on a particular drive. Internally to the system the file may be redirected to an entirely different location and may even be split across different devices across the network.

Id. at 5:61–67.

Patent Owner argues that this discussion “requires that ‘[a]s far as the user is concerned the file is stored in a particular directory on a particular drive.’” PO Resp. 8 (quoting Ex. 1001, 5:63–64) (alteration in original); *see also* Melendez Decl. ¶¶ 28, 38. Patent Owner further argues that “transparent access” also requires that the system provide the user with “the fiction that a

⁶ Patent Owner’s argument at pages 12–13 of the Patent Owner Response incorrectly implies that this is the only distinction between its and Petitioner’s claim construction.

file resides and resided on a particular directory on a particular drive.” PO Resp. 8–9.

We disagree with Patent Owner’s arguments. Though, the Specification is describing an embodiment of the invention, there is nothing in the cited paragraph that requires transparent access to mean that the user believe the file is stored in a particular directory on a particular drive when it is not. *See* Ex. 1001, 5:61–67. Still further, we see no reason to read an additional limitation into the claims of providing the user with a false location of a file on a particular drive as implied by Patent Owner. Rather, we determine that the specification is describing a particular embodiment that is encompassed within the definition of “transparent access,” but does not limit the term “transparent access” to this particular embodiment.⁷ *See E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (“[I]n determining whether a statement by a patentee was intended to be lexicographic, it is important to determine whether the statement was designed to define the claim term or to describe a preferred embodiment.”); *see also* Reply 4–5. Also, this embodiment states that a file “may [be] redirected” to a location different from that conveyed to the user; it does not say the file must be moved. Ex. 1001, 5:61–67. Therefore, even if the claims were limited to this embodiment, it would not compel the construction Patent Owner proposes.

⁷ We note that Patent Owner’s position surrounding “belief” would appear to prevent the inventor of the ’234 patent from practicing the invention, as anyone who knows how the system works would be unlikely to have a false belief as to where a file is located, though they may not know where the file is stored.

Turning to the prosecution history, in response to an Office Action dated May 3, 2007, all three of the independent claims were amended to include, *inter alia*, “providing transparent access to said file regardless of where the file is created, located, or moved to, independently of an application or a user.” Ex. 1004, 44, 46, 52. The claims were later revised by Examiner’s amendment to the current language. *Id.* at 29–30. In summarizing an Examiner interview at the time of the response, the applicant stated “that some amendment is needed to clarify” that “when a file is moved according to the policies, the move is transparent to the user, who does not need to know where the new file location is in order to access it.” *Id.* at 56. When discussing the prior art, the applicant also explained:

When a file is moved according to the file lifecycle policies, the user may still access the file regardless of the file’s new location and without having to know where the file is physically located. Thus, accessing the file . . . is transparent to the user.

Ex. 1004, 58 (citing Spec. as Filed, 8, ll. 2–7 (corresponding to Ex. 1001, 5:64–6:2) (internal citation omitted)).

The applicant’s two statements that to be “transparent to the user” the user “does not need to know where the new file location is in order to access it” support Petitioner’s position that “transparent access” does not require the user “to know where the file is physically located.” *See* Pet. 35; Reply 3. Further, nothing in these statements would require the user to have a misplaced belief as to the location of the file as per Patent Owner’s construction.

Patent Owner acknowledges the prosecution history and states that “[t]he user/client may have no actual knowledge of the file’s location as discussed in the prosecution history but believe the file is stored in a

particular directory on a particular drive when it is indeed not stored there.”

Sur-Reply 3. Though it is true that a user may have such a belief, the statement does not provide any persuasive evidence as to why “transparent access” requires the user to have an incorrect belief of the location of the file.

Patent Owner also points to other statements in the prosecution history to argue that its

meaning of “transparent access” is entirely consistent with the prosecution history Petitioners cite because the prosecution history also explicitly states that “because embodiments of the invention may operate at the file system level, no separate application or middleware is required.” It would have been readily understood by a [POSA] that by operating at the file system level the user would be provided by the file system the fiction that a file resides and resided on a particular directory on a particular drive as required for transparent access of the ‘234 Patent.

PO Resp. 8–9 (quoting Ex. 1004, 58; citing *id.* at 56–58; Melendez Decl. ¶ 28; Ex. 1001, 5:63–64) (internal citation omitted).

We first note that this argument in the prosecution history appears to be directed primarily to the transparent access being provided “independently of an application or a user.” Ex. 1004, 58 (emphasis omitted). It is also consistent with our determination that “transparent access” includes, but does not require, that a user have a misplaced belief about the location of the file. Patent Owner does not provide any reason why this example requires more.

Patent Owner also points to a publication by the National Institute of Standards & Technology (NIST) in support of its definition of “transparent access.” PO Resp. 13 (citing Ex. 2003, 5). Patent Owner quotes the publication as stating: “However, *there is no standard way for [an]*

application to be able to transparently access files on several file systems whose access characteristics may differ from the access characteristics of the local file system. ***Transparent file access means that remote files are accessed as though they were local.***” *Id.* (quoting Ex. 2003, 5 (Patent Owner’s emphasis and alteration)).

Patent Owner argues that “‘the access characteristics of the local file system’ implies knowledge by the local client, in the case of NIST, that the file is stored in a particular directory on a particular drive of the local file system when in fact it is stored as a remote file.” *Id.* (citing Melendez Decl. ¶ 39, which includes the same sentence). However, neither Patent Owner nor its expert adequately explain why this would *require* the user to falsely believe the file is located in a particular location. *See* Reply 6–7. The fact that a user does not have to separately access a remote server to retrieve a file, but rather can transparently access the file from the user’s computer as though the file was local, says nothing about where the user believes the file to be located. Again, it is possible that the user does believe the file is located locally, but there is no requirement that the user have such a belief.

In view of the above, we determine that “transparent access” includes that access is provided without the user having to know where the file is physically located, but does not require that a user have a misplaced belief about the location of the file.

D. Claims 1–7, 45–57, and 59 — Alleged Obviousness over Sitka and Cannon

Petitioner asserts that claims 1–7, 45–57, and 59 would have been obvious over Sitka and Cannon. *See* Pet. 19–68. Patent Owner opposes. *See* PO Resp. 9–24. For the reasons set forth below, we find that Petitioner has shown that the combination of Sitka and Cannon teaches the limitations of

claims 1–7, 45–57, and 59. We additionally find that Petitioner has demonstrated that one of ordinary skill in the art would have had reason with rational underpinning to combine the teachings of the references in the manner proposed by Petitioner with a reasonable expectation of success. Pet. 19–68; Long Decl. ¶¶ 57–157. Thus, we determine Petitioner has sufficiently shown that claims 1–7, 45–57, and 59 would have been obvious over Sitka and Cannon.

a. Independent Claim 1

Petitioner asserts that the combination of Sitka and Cannon would have rendered obvious independent claim 1. Pet. 19–38. In general, Petitioner asserts that Sitka⁸ teaches the computer-implemented method of managing a file lifecycle as required by independent claim 1 (*id.* at 23 (citing Ex. 1005, 1:15–30, 8:50–52, 3:64–4:8, 10:17–31; Long Decl. ¶ 65)), as well as all of the other limitations of claim 1 (*id.* at 23–38). Petitioner relies on Cannon primarily in the case that “*Sitka* [is] deemed not to provide an explicit example of associating policies with individual files.” *Id.* at 20. Petitioner asserts that “[i]t would have been obvious to one of ordinary skill to associate *Sitka*’s policies with individual files in view of *Cannon*” as a

⁸ Sitka claims priority to U.S. provisional application 60/092,853, filed on July 15, 1998 (Ex. 1007) (“’853 provisional”). Ex. 1005, code (60). Petitioner’s discussion of Sitka cites to Sitka as well as to the priority application (’853 provisional). Because Patent Owner does not assert that the challenged claims of the ’234 patent are entitled to the benefit of a filing date earlier than Sitka’s filing date, we do not include Petitioner’s cites to the ’853 provisional herein. *See Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–28 (Fed. Cir. 2008) (discussing parties’ respective burdens of production in the context of prior art and priority); *see also Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378–1380 (Fed. Cir. 2015) (discussing burdens of production in *inter partes* review).

matter of design choice and, *inter alia*, to provide additional control over file management. *Id.* at 19–23 (citing Long Decl. ¶¶ 57–64); *see also id.* at 25–26.

For the reasons discussed below, we determine that Petitioner has shown that the combination of Sitka and Cannon teaches the subject matter recited in claim 1. We further determine that Petitioner has demonstrated that one of ordinary skill in the art would have had reason to combine the teachings of the references in the manner proposed by Petitioner. Pet. 19–38; Long Decl. ¶¶ 57–92.

i. Uncontested Limitations of Claim 1

Patent Owner does not contest Petitioner’s position that Sitka or the combination of Sitka and Cannon teach or suggest the following of claim 1 (i.e., claim elements 1[a-f]):

1. [a] A computer-implemented method of managing a file lifecycle, the method comprising the steps of storing data on a storage medium comprising:

[b] associating a set of lifecycle policies with a file in a file system, wherein said lifecycle policies relate to aspects of file classification and file disposition including at least one of: file creation, file retention, file reference, file non-use, file security, file protection, file preservation, file storage locations within a storage medium, cost effective storage of a file, or file expiration;

[c] storing said file on said storage medium accessible by a computer according to said set of lifecycle policies;

[d] automatically determining from the associated lifecycle policies whenever said file is to be moved;

[e] automatically moving said file according to the associated lifecycle policies to another storage location within said storage medium or within a different storage medium whenever the associated lifecycle policies determine that said file is to be moved; and

[f] receiving an access request for said file from an application.

See generally PO Resp.; Sur-Reply.

Petitioner argues and we agree that Sitka’s directed storage management (“DSM”) system teaches a computer-implemented method of managing a file lifecycle as required by independent claim 1 [a]. *See* Pet. 23 (citing Ex. 1005, 1:15–30, 8:50–52, 3:64–4:8, 10:17–31; Long Decl. ¶ 65). We are persuaded by Petitioner that the DSM system “manages all aspects of a file’s lifecycle, including where the files are stored, when they are moved between media, and when files are deleted.” *Id.* (citing Ex. 1005, 3:64–4:8, 10:17–31). We find that the DSM system expressly teaches storing data on a storage medium, as also argued by Petitioner. Ex. 1005, 8:58–61; *see* Pet. 24.

Concerning element [b] of claim 1, Petitioner argues and we find that Sitka teaches lifecycle policies relating to file creation, file retention, file reference, file non-use, file security, file protection, file preservation, file storage locations within a storage medium, cost effective storage of a file, and file expiration. Pet. 24–33. This is because, for example, Sitka teaches a migration policy (Ex. 1005, 17:44–53; Pet. 24, 28–30) (i.e. file retention, preservation, file non-use, and expiration policies), a deletion policy (Ex. 1005, 17:48–18:1; Pet. 24, 27–29) (i.e., file non-use, reference and expiration policies), security management features (Ex. 1005, 11:41–12:14; Pet. 25, 30) (file security and protection policies). Further, Petitioner argues, and we agree, that when discussing migration, Sitka teaches that it is designed for the cost effective storage of a file as required by the claim stating “[b]y migrating the high resolution image, however, storage *costs* for RAID are dramatically reduced,’ which results in storing files ‘as

economically and efficiently as possible.” Pet. 32 (quoting Ex. 1005, 5:66–6:3) (citing Ex. 1005, 28:60–29:4).

Claim 1 element [b] also requires that the lifecycle policies be associated with individual files. Petitioner argues that this is taught by both Sitka and Cannon. Pet. 19–23, 24–26. Sitka teaches security management features or policies that relate to individual files (Ex. 1005, 14:10–18) and that the lifecycle policies “have the ability to direct a file to a particular location” (*id.* at 8:17–19). *See also* Pet. 19–20, 25; Long Decl. ¶ 60. Among other things, Cannon teaches an “inventory table contains information specific to each user file stored in the subsystem 102.” Ex. 1006, 7:44–47; *see also* Pet. 20. This information, as shown in Cannon table 1, includes the retention time for each file. Ex. 1006, 8:11–35; *see also* Pet. 20, 25–26. Thus, we find that both Sitka and Cannon teach associating lifecycle policies with individual files as argued by Petitioner.

Petitioner provides various reasons why a person of ordinary skill in the art would have combined Sitka’s teachings of file policies with Cannon’s teachings of associating policies with individual files, including that doing so would “provide additional control over file management.” Pet. 21 (citing Long Decl. ¶ 62); *see id.* at 19–23, 25–26 (discussing rationale to combine). We determine that Petitioner provides sufficient explanation and articulated reasoning with rational underpinning supporting its assertion of obviousness. *See* Pet. 19–23, 25–26.

Concerning elements [c], [d], and [e] of claim 1, we have previously noted that Sitka teaches storing files on a storage medium (Ex. 1005, 8:58–61; Pet. 24) and migrating files according to a lifecycle policy (Ex. 1005, 5:66–6:3, 8:40–45, 28:60–29:4; Pet. 25, 32). We further find that, as argued

by Petitioner, the stored files are accessible by a computer according to said set of lifecycle policies and that they are moved automatically according to the lifecycle policies. *See e.g.*, Ex. 1005, 8:40–49, 8:58–61; Pet. 25, 32–34. In particular concerning element [e], Sitka teaches that “[a] File may exist in more than one Store at any given time, and will be moved or copied between Stores according to the policies that an administrator has put in place and specific user requests.” Ex. 1005, 8:40–43; *see also id.* at 43–49; Pet. 33–34. Thus, we find that Sitka teaches elements [c], [d], and [e] of claim 1.

Claim 1, element [f] requires “receiving an access request for said file from an application.” This is taught by Sitka because, as Petitioner persuasively argues, Sitka’s “DSM system may receive ‘requests from its various clients, i.e., user applications [etc.],’ and that the DSM server process ‘handle[s] concurrent client requests to a given file by providing simultaneous or sequential access depending on the nature of the requests.’” Pet. 34 (alterations added by Petitioner) (quoting Ex. 1005, 9:37–56).

Based on the foregoing, we are persuaded that Petitioner establishes that Sitka teaches or suggests these undisputed limitations by a preponderance of the evidence. We are also persuaded that Petitioner establishes that the combination of Sitka and Cannon suggests these limitations by a preponderance of the evidence. *See* Pet. 19–34; Long Decl. ¶¶ 57–88.

ii. Providing Transparent Access

Claim 1 also requires:

[g] providing transparent access to said requested file based on said associated set of lifecycle policies, regardless of where said file is located, and independently of said application requesting access to said file.

Petitioner asserts that the limitations of claim element 1[g] are disclosed by both Sitka and Cannon. *See* Pet. 34–38. Petitioner asserts that Sitka teaches transparent access because, among other things, Sitka teaches that “data can be stored on particular volumes without knowledge of the media type of the volume” (*id.* at 35 (quoting Ex. 1005, 2:54–56)) and “that the DSM server process ‘translate[s] requests for files into requests for data transfer to or from specific media/volume locations’” (*id.* (quoting Ex. 1005, 9:44–46)). Petitioner asserts that, “because *Sitka*’s DSM server translates file requests into requests from media/volume locations, the server requires only a request for a ‘file,’ and not a request tied to a specific location,” thus teaching that transparent access is provided “regardless of where said file is located.” *Id.* at 35–36.

Petitioner also asserts that even if Sitka did not disclose providing transparent access, this is taught by Cannon. *Id.* at 37 (citing Ex. 1006, 2:24–25, 6:56–58). Petitioner contends it would have been “obvious to provide access to *Sitka*’s files in a ‘transparent’ manner based on *Cannon*’s teachings to simplify user and application access to files and because of *Cannon*’s teaching that such transparency is ‘[e]specially advantageous.’” *Id.* at 37 (quoting Ex. 1006, 3:34–35, Long Decl. ¶ 91).

Petitioner asserts that Sitka teaches lifecycle policies (as discussed above) and that “a person skilled in the art would have understood the system to provide access to those files based on those lifecycle policies.” *Id.* at 37–38. Petitioner provides an example of Sitka providing access to a file based on a migration policy and another example of Sitka providing access to a file based on “aspects of security and file protection.” *Id.* at 38.

Petitioner asserts that “because *Sitka*’s DSM server translates file requests into requests from media/volume locations, the server requires only a request for a ‘file,’ and not a request tied to a specific location,” thereby teaching that transparent access is provided “regardless of where said file is located.” *Id.* at 35–36.

Petitioner argues that *Sitka* “provides access independently of the application requesting access because it utilizes an API that translates requests into DSM server requests by way of the DSM client library.” *Id.* at 36 (citing Long Decl. ¶ 90; Ex. 1005, 9:24–36). Petitioner further explains “any user application may interface with the DSM server through the DSM client library, and, from the perspective of the server, the requests appear identical, having been translated by the client API in the DSM client library.” *Id.* at 36–37.

Patent Owner argues that two aspects of this claim element are not taught or suggested by the prior art. PO Resp. 12–21. We address each in turn.

1. Transparent Access

Patent Owner argues that neither *Sitka* nor *Cannon* teach “providing transparent access to said requested file based on said associated set of lifecycle policies” as required by claim 1. PO Resp. 14–19. At the same time, Patent Owner does not contest that *Sitka* teaches providing “access to said requested file based on said associated set of lifecycle policies.” *See generally, id.* Rather, Patent Owner’s position centers on its claim construction of “transparent access,” arguing that *Sitka* and *Cannon* do not teach “transparent access” generally. *Id.*

Patent Owner argues that “transparent access” is not present because “Sitka’s application users are not informed that a ‘file is stored in a particular directory on a particular drive.’” *Id.* at 14. However, claim 1 does not include a step of informing a user that a “file is stored in a particular directory on a particular drive,” and we have previously determined that this is not required by the term “transparent access.” *See supra* § II.C.a. Patent Owner’s arguments surrounding Sitka’s teachings of “media independence” also fail for the same reason because the claims do not require “providing access to a file that appears to be in a particular directory on a particular drive but is not.” PO Resp. 16.

Patent Owner admits that “Sitka discloses transparency” but argues that it is transparency to the server rather than the client. PO Resp. 15. Patent Owner states that in Sitka “files are simply requested of the server as a service and not directly accessed by the client by indicating a particular directory on a particular drive.” *Id.*; *see also* Pet. 3 (relying on these teachings to show transparent access).

Rather than distinguish the claims, Patent Owner’s argument further shows how Sitka discloses transparent access. The file access provided in Sitka is transparent to the user, i.e., “is provided without the user having to know where the file is physically located.” *See supra* § II.C.a. It is not required that the user know or believe to know where the file is located when accessing the file in order for the access to be transparent. Pet. 35.

Patent Owner similarly argues Cannon does not teach “transparent access” because “Cannon’s application users are not informed that a ‘file is stored in a particular directory on a particular drive.’” PO Resp. 16.

Patent Owner admits that “Canon discloses that “*creation and use of the managed files* is transparent to the client stations” but argues that “Canon’s transparency is a different type of transparency” because “Canon provides access simply on the basis of satisfying the client request, and not by having a client application believe that it is requesting a file located in a particular directory of a particular drive.” PO Resp. 16–17; Sur-Reply 3–4, n.1. As this difference is not required by the claims it cannot differentiate the claims from the prior art.

Based on Petitioner’s persuasive evidence and argument and in view of the foregoing discussion, we find the combination of Sitka and Cannon teaches “providing transparent access,” as recited in claim 1.

*2. Providing Access Independently of the
Application Requesting Access*

Patent Owner argues that “Sitka’s system and methods do not access files ‘independently of said application requesting access to said file’” as required by claim 1. PO Resp. 19.

As noted above, Petitioner argues that Sitka “provides access independently of the application requesting access because it utilizes an API [(application programming interface)] that translates requests into DSM server requests by way of the DSM client library.” Pet. 36 (citing Long Decl. ¶ 90; Ex. 1005, 9:24–36). Petitioner further explains “any user application may interface with the DSM server through the DSM client library, and, from the perspective of the server, the requests appear identical, having been translated by the client API in the DSM client library.” *Id.* at 36–37.

Patent Owner argues that in Sitka an API is part of the application that utilizes the API. PO Resp. 20 (“[A]pplications wishing to interact with a particular third party subsystem can readily customize their applications

programming to include the APIs.”); *see also* Sur-Reply 11 (“[T]he APIs of Sitka become part of the customized applications when they are used by them.”). Patent Owner further argues that “Sitka does not provide access independently of the application requesting access because the application must be customized to incorporate custom APIs that translate requests into requests to the DSM server by way of the DSM client library.” Sur-Reply 10; *see also* PO Resp. 20–21.

We find Sitka discloses that its APIs are separate from the user applications that can utilize the APIs. *See e.g.*, Ex. 1005, 9:24–36 (disclosing “a set of client API (application programming interface) functions that are available to user applications 28”); Reply 13; *see also* Ex. 1015, 4 (the IEEE dictionary defining API as the “interface between the application software and the application platform, across which all services are provided”). Sitka discloses that its APIs can be utilized by different programs by describing that APIs “are available to user applications 28,” which “are software applications for manipulation of files stored by DSM system 10.” Ex. 1005, 9:24–36. This disclosure further shows separation from the user applications. Further, we agree with Petitioner that Sitka discloses providing transparent access independent of the application requesting access because it utilizes the APIs as the interface with the server and storage system. Reply 13–14. Because the API is separate from the user application, the API provides the independence required by claim 1.

Patent Owner also argues that the ’234 Patent excludes APIs because “the [’]234 Patent operates at the file system level and hence does not require customized application software for file access.” PO Resp. 21 (citing Ex. 1004, 31, 58; Melendez Decl. ¶ 52). We do not agree that “not

requir[ing] customized application software for file access” is the same as excluding customized application software for file access. Nowhere do the ’234 patent, the claims, or the prosecution history require such an exclusion as suggested by Patent Owner. *See* Reply 11–13.

iii. Conclusion

In conclusion, we are persuaded by Petitioner’s contentions and the underlying evidence cited in support regarding the limitations of claim 1 individually and as a whole. We determine that Petitioner establishes by a preponderance of the evidence that the subject matter of claim 1 would have been obvious based on the combined teachings of Sitka and Cannon. Pet. 19–38; Long Decl. ¶¶ 57–92.

b. Independent Claims 45 and 51

Petitioner asserts that the combination of Sitka and Cannon would have rendered obvious independent claims 45 and 51. Pet. 23–38, 51–64. As noted by Patent Owner “[i]ndependent claims 45 and 51 recite similar limitations to independent claim 1.” PO Resp. 11. Petitioner’s analysis of these claims is similar to the analysis of claim 1. *Compare* Pet. 51–59 and 60–64, *with id.* at 23–38. Similarly, Patent Owner largely argues the patentability of claims 1, 45, and 51 together. *See e.g., id.* at 11 (“Sitka and Cannon do not disclose these independent claim limitations”). Thus, where claims 1, 45, and 51 are argued together, we are not persuaded by Patent Owner’s arguments for the same reasons discussed above with respect to claim 1.

Claims 45 and 51 also require “providing a virtual storage medium having a plurality of storage media associated therewith,” which is not

present in claim 1. Ex. 1001, 18:28–29, 19:14–15. Patent Owner argues that this limitation is not taught by Sitka. PO Resp. 22.

Petitioner argues that Sitka teaches “manag[ing] the storage of data files among a variety of ‘media’” “‘from various data storage devices’” “‘without knowledge of the media type of the volume.’” Pet. 51–52 (quoting Ex. 1005, 1:15–19, 8:58–61, 2:54–56). Petitioner reasons: “[g]iven that Sitka discloses that storage and retrieval of files from devices can be done without knowledge of the underlying media types, one skilled in the art would have understood that Sitka discloses a plurality of storage media associated with ‘a virtual storage medium.’” *Id.* at 52 (citing Long Decl. ¶ 115).

Patent Owner argues that the ’234 patent requires virtual storage “to be comprised of a shared memory space of a network of computers.” PO Resp. 22 (citing Melendez Decl. ¶¶ 55–56). Petitioner disagrees, arguing that this construction is not required by the ’234 patent and is inconsistent with the definition of a number of technical dictionaries. Reply 14–16. In particular, Petitioner argues that virtual storage does not require a network. *Id.* at 15 (citing *e.g.* Ex. 1015 (The Authoritative Dictionary of IEEE Standards Terms), 6 (defining “virtual storage” as “A storage allocation technique in which auxiliary storage can be addressed as though it were part of main storage”))).

Patent Owner does not address Petitioner’s dictionary evidence. At the same time, it is unnecessary for us to construe “virtual storage” as it is taught or suggested by Sitka under either party’s position. This is because Sitka’s system discloses that the storage can be either networked storage or storage in a single computer. For example, as Petitioner points out, Sitka teaches that the “servers ‘can reside on a single host machine, or can be distributed

across many hosts.” Reply 17 (quoting Ex. 1005, 9:5–23). Sitka explains that “Volume Server process 18 executes on each host having drives that handle DSM volumes.” Ex. 1005, 16:26–27, *quoted in* Pet. 52. Thus, the drives that make up the DSM storage are on different “hosts.” Petitioner also notes that Sitka discloses “networkable interfaces” in Figure 1. Reply 17 (quoting Ex. 1005, 9:9–12). Sitka discloses that “system 10 may further include a feature whereby volume metadata is stored on each physical volume to track the volume across within a local server or *across a network.*” Ex. 1005, 28:15–19 (emphasis added), *cited in* Reply 17. Therefore, Sitka discloses that volumes that make up the DSM storage are on different host computers connected by a network, satisfying Patent Owner’s understanding of “virtual storage.” See PO Resp. 24 (“The ‘234 Patent discloses the virtual storage medium whereby two or more computers contribute at least a portion of their individual drive(s) in creating the virtual storage medium within a computer network.”).

In conclusion, we are persuaded that Petitioner establishes by a preponderance of the evidence that the subject matter of claims 45 and 51 would have been obvious based on the combined teachings of Sitka and Cannon. Pet. 23–38, 51–64; Long Decl. ¶¶ 113–129, 135–148.

c. Dependent Claims 3–5, 46–48, and 52–54

Petitioner contends that the combination of Sitka and Cannon would have rendered obvious dependent claims 3–5, 46–48, and 52–54. Pet. 42–49, 59, and 64.

Claims 3 and 4 state, with lettering in brackets added:

3. A method of managing a file lifecycle according to claim 2 [a] wherein a first storage medium is associated with active files and a last storage medium is associated with archived files and [b]

wherein the file is transferred from the first storage medium to the last storage medium in successive stages.

4. A method of managing a file lifecycle according to claim 3, wherein a file is automatically transferred to a storage medium most appropriate for its stage of lifecycle determined in accordance with the lifecycle policies.

5. A method of managing a file lifecycle according to claim 4 wherein the lifecycle policies relate to at least some of: the associated storage medium, the file name, the file extension, the file creation date, the file access date, the file last access date, the file creator, and/or the current file owner.

Ex. 1001, 15:8–21.

Claims 46 and 52 are substantially similar to claim 3, except for their dependency. Claims 47 and 53 are substantially similar to claim 4, except for their dependency. Claims 48 and 54 are substantially similar to claim 5, except for their dependency.

Patent Owner argues that *Sitka* does not teach the limitations added by claim 3, and thus does not teach dependent claims 3–5, 46–48, and 52–54.

PO Resp. 25.

Petitioner argues that *Sitka* teaches claim 3 element [a]

because it teaches that “HSM systems typically are configured such that files that are accessed more frequently or created more recently are stored on ‘short-term’ media having the shortest access time [and] [f]iles that are accessed less frequently, created less recently, or have larger sizes are stored on ‘long-term’ media having longer access times and larger storage capacities.

Pet. 42–43 (alterations added by Petitioner) (quoting Ex. 1005, 1:15-30) (citing Long Decl. ¶ 98). Relying on its expert, Petitioner then asserts that “one skilled in the art would have understood *Sitka* to disclose a first storage medium associated with active files (*i.e.*, the short term media having the shortest access time) and a last storage medium associated with archived

files (*i.e.*, the long term media having longer access times).” *Id.* at 43 (citing Long Decl. ¶ 98). Petitioner also argues that Sitka’s teaching of a migration policy “in which case lowest level stores would not enable migration” (*id.* (quoting Ex. 1005, 17:44-46)), “would have conveyed to a skilled artisan that *Sitka* discloses a ‘last storage medium associated with archived files’ (*i.e.*, the lowest level stores).” *Id.* (citing Long Decl. ¶ 98).

Turning to claim 3 element [b], Petitioner asserts that this is also taught by Sitka. Petitioner relies on the same portion of Sitka’s background discussing typical HSM systems for the teaching that Sitka’s “DSM system is a form of hierarchical storage management, which would have conveyed to a person of ordinary skill that files are transferred in stages.” Pet. 44 (citing Ex. 1005, 1:15–30; Long Decl. ¶¶ 99–102.) Petitioner also cites “an example [in Sitka] where a file is successively migrated from store 0, to store 1, to store 2.” *Id.* (citing Ex. 1005, 26:39–51, 1:43–50).

Patent Owner argues that “Sitka discloses a hierarchical storage system where files are not transferred from a first medium to a last medium in successive stages” because files are saved to the store 0 and store 3 at the same time. PO Resp. 25 (citing Melendez Decl. ¶ 64). However, as asserted by Petitioner, Sitka does disclose successive migration from store 0 to store 2.⁹ Ex. 1005, 26:39–51; *see also* Pet. 44; Reply 18. Sitka teaches that in this example, store 3 is back-up storage. *Id.* at 26:57–59. Further “Store 2 and Store 3 are both at the lowest level.” *Id.* at 26:56. Thus, Patent Owner is incorrect to say that “Sitka discloses a hierarchical storage system where

⁹ Patent Owner argues that Petitioner is making a new argument in stating the store 2 is the last storage medium. Sur-Reply 14. However, the Petition clearly relies on store 2 as the last storage medium when it states “a file is successively migrated from store 0, to store 1, to store 2.” Pet. 44.

files are not transferred from a first medium to a last medium in successive stages” (PO Resp. 25) as this is satisfied by successively migrating a file from store 0 to store 1 to store 2 (“the last storage medium”) (Reply 18–19).

As required by claim 3, this example teaches a file being “transferred from the first storage medium to the last storage medium in successive stages.” Nowhere does claim 3 exclude the possibility of backing-up the storage as well. Reply 19–20.

For the foregoing reasons and based on Petitioner’s persuasive evidence and argument, we determine that Petitioner establishes, by a preponderance of the evidence, that the subject matter of claims 3–5, 46–48, and 52–54 would have been obvious based on the combined teachings of Sitka and Cannon. Pet. 42–49, 59, and 64; Long Decl. ¶¶ 98–110, 130–132, 149–151.

d. Dependent Claims 2, 6, 7, 49, 50, 55–57, and 59

Petitioner contends that the combination of Sitka and Cannon would have rendered obvious dependent claims 2, 6, 7, 49, 50, 55–57, and 59. Pet. 39–42, 49–51, 60, and 65–68. Patent Owner relies exclusively on its arguments over independent claims 1, 45, and 51 for the patentability of these dependent claims. PO Resp. 27.

We have reviewed Petitioner’s arguments and supporting evidence regarding these claims and determine that Petitioner has shown by a preponderance of the evidence that the combination of Sitka and Cannon suggests each limitation of claims 2, 6, 7, 49, 50, 55–57, and 59. We additionally find that Petitioner has demonstrated sufficiently that one of ordinary skill in the art would have had reason with rational underpinning to combine the teachings of the references in the manner proposed by

Petitioner with a reasonable expectation of success. Therefore, Petitioner establishes by a preponderance of the evidence that the subject matter of claims 2, 6, 7, 49, 50, 55–57, and 59 would have been obvious based on the combined teachings of Sitka and Cannon. Pet. 39–42, 49–51, 60, 65–68; Long Decl. ¶¶ 93–97, 111–112, 133–134, 152–157.

III. CONCLUSION¹⁰

For the reasons discussed above, we determine Petitioner has proven, by a preponderance of the evidence, that the challenged claims are unpatentable, as summarized in the following table:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–7, 45–57, 59	103(a)	Sitka, Cannon	1–7, 45–57, 59	

¹⁰ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

IV. ORDER

For the reasons given, it is

ORDERED that claims 1–7, 45–57, and 59 of the '234 patent have been shown to be unpatentable; and

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

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