

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETAPP, INC.,
Petitioner,

v.

KOM SOFTWARE, INC.,
Patent Owner.

IPR2019-00603
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 Some 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 18, “Sur-Reply”). An oral hearing was held on May 6, 2020, and a copy of the transcript was entered into the record. Paper 27 (“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 some of 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 IPR2019-00601. Pet. 62; Paper 5, 2; 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 24.

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. 61–62; Paper 5, 3; Paper 8, 2. The parties also state there are a number of related proceedings including: IPR2019-00591 and IPR2019-00592, IPR2019-00594, IPR2019-00597, IPR2019-00598, IPR2019-00600, IPR2019-00603, IPR2019-00604, IPR2019-00605, IPR2019-00606, IPR2019-00607, and IPR2019-00608. Pet. 62; Paper 5, 2–3; Paper 8, 3.

C. The '234 Patent

The '234 patent (Ex. 1001), 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, codes (54), (57), 2:43–53, 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.

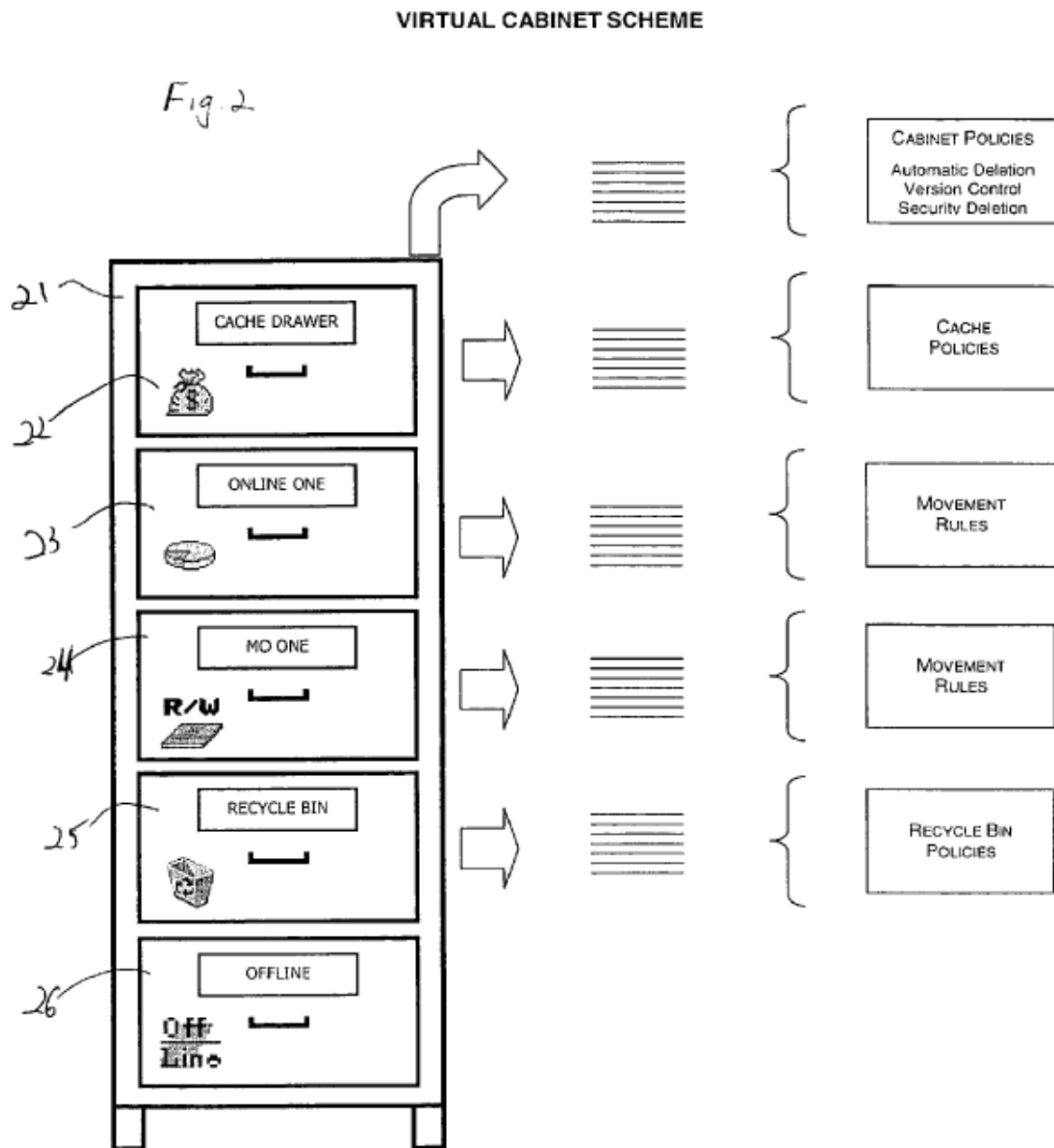


Figure 2 above illustrates a virtual filing cabinet. *Id.* at 3:65. Files can be automatically moved between virtual drawers of the filing cabinet based on managing policies “and as such, a file’s lifecycle is managed from file creation to file deletion in an automated fashion.” *Id.* at code (57). The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

[b1] associating a set of lifecycle policies with a file in a file system, [b2] 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, 14:2–28.

E. Instituted Ground

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

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

a. Blickenstaff

Blickenstaff is titled “Data storage management for network interconnected processors” and describes a data storage system that audits each of the networked storage volumes and migrates low priority data to backend data storage media. Ex. 1005, codes (54), (57). The audit is performed either on demand or on an as scheduled basis. *Id.* at code [57]. This helps “provide more available data storage space in the data storage subsystems.” *Id.* at 1:12–13.

Blickenstaff describes that its data storage management system implements a “virtual data storage system” including a first section—having “a plurality of data storage subsystems”—and a second section, with the second section including a storage server “consisting of a storage server processor and at least one layer of hierarchically arranged data storage devices, that provides backend data storage space.” *Id.* at 2:22–33.

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. 5,537,585 (July 16, 1996) (“Blickenstaff”).

⁵ Ex. 1011, U.S. Pat. 5,764,972 (June 9, 1998) (“Crouse”).

Once a file is migrated, “[t]he data file directory resident in the data storage device that originally contained this data file is updated with a placeholder entry in the directory to indicate that this data file has been migrated to backend data storage.” *Id.* at 2:40–44. When the file is requested “[t]he storage server automatically [and transparently] retrieves the requested data file using information stored in the placeholder entry and transmits the retrieved data file to the data storage device from whence it originally came.” *Id.* at 2:49–56.

b. Crouse

Crouse is titled “Archiving file system for data servers in a distributed network environment” and describes an “archiving file system [that] automatically archives remote files across multiple types of secondary storage media on such network data servers based on a set of hierarchically selectable archival attributes selectively assigned to each remote file.” Ex. 1011, codes (54), (57). Crouse’s system is directed primarily to “control [of] the long-term storage of and access to remote files stored on network data servers.” *Id.* at 4:33–34; *see also id.* at 1:33, 4:11. The archiving file system also “stor[es] control information about the remote files as part of an addressable control file” and “stores the set of hierarchically selectable archival attributes and one or more archival blocks associated with each remote file that automatically control the manner in which that remote file will be stored and ultimately archived, or even removed from the network data server.” *Id.* at 4:47–58.

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. 8 (citing Long Decl. ¶¶ 27–30). 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. 5–6 (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. 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. 7. 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. 13–14 and citing Pet. 28) (alteration in original).

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. 7 (quoting Ex. 1001, 5:63–64); *see also id.* (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”); *id.* at 16 (discussing what is required by “transparent access”).

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:

⁶ Patent Owner’s argument at pages 16–17 of the Patent Owner Response incorrectly implies that this is the only distinction between its and Petitioner’s claim construction.

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. 7 (quoting Ex. 1001, 5:63–64) (alteration in original); *see also* Melendez Decl. ¶¶ 28, 36. Patent Owner further argues that “transparent access” also requires that the system provide the user with “the fiction that a file resides and resided on a particular directory on a particular drive.” PO Resp. 7.

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-*

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.

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 14–15. 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.

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, 51–52. 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.

Id. at 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. 29; Reply 15. 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 9. 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. 7 (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. 17 (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. ¶ 41, 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 16–17. 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 Blickenstaff and Crouse

Petitioner asserts that claims 1–7, 45–57, and 59 would have been obvious over Blickenstaff and Crouse. *See* Pet. 7, 13–61. Patent Owner opposes. *See* PO Resp. 7–25. For the reasons set forth below, we determine Petitioner has shown that the combination of Blickenstaff and Crouse teaches the limitations of claims 1–7, 45, 49–51, 55–57, 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 with respect to these claims. Pet. 7, 13–61; Long Decl. ¶¶ 37–128. Thus, we determine Petitioner has shown that claims 1–7, 45, 49–51, 55–57, and 59 would have been obvious over Blickenstaff and Crouse.

In addition, for the reasons set forth below, we determine Petitioner has not shown that the combination of Blickenstaff and Crouse renders obvious claims 46–48 and 52–54.

a. Independent Claim 1

Petitioner asserts that the combination of Blickenstaff and Crouse would have rendered obvious independent claim 1. Pet. 13–30. In general,

Petitioner asserts that Blickenstaff teaches the computer-implemented methods of managing a file lifecycle as required by independent claim 1. *Id.* at 17–18 (citing Ex. 1005, code (57), 1:7–13, 8:51–53, 9:7–15; Long Decl. ¶ 45). Petitioner further asserts that Blickenstaff teaches or suggests all of the additional limitations of claim 1 (*id.* at 18–30), except that though Blickenstaff “discloses migration rules, . . . it does not expressly state that those rules are associated with individual files” (*id.* at 13). Petitioner relies on Crouse for this teaching. *Id.* at 13–17, 19–20. Petitioner asserts that “[i]t would have been obvious to one of ordinary skill in the art, however, to associate Blickenstaff’s migration rules on an individual file-by-file basis in view of Crouse” as a matter of design choice and, *inter alia*, to provide a finer level of control over file management. *Id.* at 13–17 (citing Long Decl. ¶¶ 37–44); *see also id.* at 19–20.

For the reasons discussed below, we determine that Petitioner has shown that the combination of Blickenstaff and Crouse teaches the subject matter recited in claim 1 and 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. *Id.* at 13–30; Long Decl. ¶¶ 37–67.

i. Uncontested Limitations of Claim 1

Patent Owner does not contest Petitioner’s position that Blickenstaff teaches or suggests the following of claim 1 (i.e., claim elements 1[a, b2–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:

. . . [b2] 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.

We have reviewed and agree with Petitioner's undisputed arguments. For example, Petitioner argues, and we agree, that Blickenstaff teaches claim element 1[a]. *See* Pet. 17–18. We are persuaded by Petitioner that Blickenstaff teaches managing a file lifecycle “by disclosing a data storage system that migrates low priority data to backend data storage media,” among other teachings. *Id.* at 17 (citing Ex. 1005, code (57), 1:7–13). Relevant to claim elements 1[a] and [c] Petitioner argues, and we agree, that Blickenstaff teaches storing data, such as files, on a storage medium. *Id.* at 18 and 25–26 (both citing Ex. 1005, 2:14–18). Petitioner persuasively argues that a POSA would understand that “includes storing files on a storage medium according to the migration rules” (i.e. lifecycle policies) as further required by claim element 1[c]. *Id.* at 26 (citing Long Decl. ¶ 60).

Petitioner argues, and we agree, that Blickenstaff's teaching of automatically migrating low priority files to backend storage is consistent with “automatically determining from the associated lifecycle policies

whenever said file is to be moved” as claimed by element 1[d] and the requirement of automatically moving the file of element 1[e]. *Id.* at 26, 27 (both citing Ex. 1005, 1:7–13); *see also id.* (both citing Ex. 1005, 9:67–10:4) (discussing migration rules); and *id.* at 26 (citing Ex. 1005, 5:28–29) (discussing migration timing and scheduling).

Petitioner also asserts Blickenstaff’s teaching of migration rules teaches claim element 1[b2], which defines particular aspects of the lifecycle policies. *Id.* at 21. We agree with Petitioner that Blickenstaff teaches rules “to migrate files to backend data storage systems” corresponding to the claimed lifecycle policies. *Id.* (citing Long Decl. ¶ 50). As noted by Petitioner, Blickenstaff teaches “that files are placed into a ‘priority list, such as a least recently used list’ to determine which files to migrate.” *Id.* (quoting Ex. 1005, 11:16–19). We agree with Petitioner that this is one way to classify files and thus, Blickenstaff teaches rules that include “aspects of file classification” as well as file non-use. *See id.* at 21, 23. As claim element 1b only requires “at least one” aspect of file classification and file disposition, Petitioner’s showing of Blickenstaff’s teaching of file non-use is sufficient to show that Blickenstaff teaches all that the claim requires in this regard. At the same time, we agree with Petitioner that Blickenstaff also teaches that its rules deal with file creation, file retention and preservation, file reference, file security and protection, file storage locations within a storage medium, and cost effective storage of a file. *Id.* at 22–25 (citing e.g., Ex. 1005, 5:7–11, 7:7–16, 11:16–19, 11:65–12:1).

Petitioner argues and we agree that Blickenstaff teaches claim element 1[f], based at least on the teaching that “a processor may ‘request[

[a] data file.”” *See id.* at 27 (quoting Ex. 1005, 2:44–45) (emphasis omitted, alterations in original).

Based on the foregoing, we are persuaded that Petitioner establishes that Blickenstaff teaches or suggests these undisputed limitations by a preponderance of the evidence. *See id.* at 17–18, 25–28; Long Decl. ¶¶ 45–46, 60–63.

ii. Associating a Set of Lifecycle Policies with a File

Claim 1 also requires

[b1] associating a set of lifecycle policies with a file in a file system.

Petitioner asserts that the combination of Blickenstaff and Cannon renders obvious this limitation. Pet. 19–20. Petitioner argues that “*Blickenstaff* discloses ‘a plurality of concurrently operational space management *rules*’” and that “[b]ased on these rules, ‘data files can be selected for migration as a function of the time of last access, size, [or] quantity of data storage space available on the network volume.’” *Id.* at 19 (quoting Ex. 1005, 9:67–10:4) (Petitioner’s emphasis). However, Petitioner states that the rules managing the files in Blickenstaff are called “operational space management *rules*,” rather than rules that are explicitly associated directly with the files. *Id.*

Petitioner asserts that Crouse “discloses that its system ‘automatically archives remote files across multiple types of secondary storage media on such network data servers based on a set of hierarchically selectable archival attributes that are selectively assigned to each remote file.’” *Id.* at 14 (quoting Ex. 1011, 4:25–29). Petitioner further quotes Crouse as stating “[b]y providing for a set of hierarchically selectable archival attributes *associated with each remote file*, the archiving file system allows user

programs to specify how a remote file will be managed on a network data server.” *Id.* (quoting Ex. 1011, 5:1–4) (Petitioner’s emphasis). Based on the teachings of Crouse, Petitioner further asserts that it would have been obvious “to implement *Blickenstaff*’s hierarchical storage management system with individual attributes for each file to allow finer control of how individual files will be archived and/or migrated within the storage system” as taught by Crouse. *Id.* at 14–15 (citing Long Decl. ¶ 40).

Petitioner provides various reasons that a person of ordinary skill in the art would have “add[ed] *Crouse*’s archival attributes . . . in addition to or as a substitute for *Blickenstaff*’s file attributes,” such as “to enable *Blickenstaff*’s system to control when files are migrated on a more granular, file-by-file basis.” *Id.* at 20 (citing Long Decl. ¶ 48); *see also id.* at 13–17, 19–20 (discussing rationale to combine).

Patent Owner argues that Petitioner’s understanding of “what it means to associate ‘a set of lifecycle policies with a file in a file system’” is too broad. PO Resp. 11. Patent Owner argues that a POSA would not understand this to mean “‘applying rules to a file in a file system’ nor even ‘applying a set of lifecycle policies to a file in a file system.’” *Id.* Rather, Patent Owner argues that “file lifecycle policy” was defined in the patent prosecution history as “a framework of processes, classifications of data and storage resources, *and* the relationships among them, *beyond mere archiving of files.*” *Id.* at 11–12 (quoting Ex. 1004, 111⁸) (Patent Owner’s emphasis); *See*

⁸ We refer to the file history of the ‘234 Patent in Exhibit 1004 rather than Patent Owner’s later filed shortened version of the file history (Ex. 2002). *See* 37 C.F.R. § 42.6(d) (“A document already in the record of the proceeding must not be filed again . . . without express Board authorization”).

also Melendez Decl. ¶ 52 (discussing the prosecution history). However, the prosecution history when reviewed more closely does not support Patent Owner’s proposition that “lifecycle policy” was redefined.

The excerpt relied on by Patent Owner is part of an interview summary that, rather than defining the claims, defines what the Applicant believed to be the invention: “Applicants explained *the nature and background of the invention*, in particular, that a file lifecycle policy is a framework of processes, classifications of data and storage resources, and the relationships among them, beyond mere archiving of files.” Ex. 1004, 111 (emphasis added); *see also* Reply 2–3. The Applicant went on to state that “[i]t was agreed that the applied reference does not teach the invention, and that some amendment is needed to clarify the nature of the ‘lifecycle policies’ recited in the claims.” Ex. 1004, 111. In other words, the claims needed to be amended to better align the claim language with the invention. Further, the Applicant used the term “lifecycle policies” broadly implying that something was needed to be added to the claims to limit their broad reach.

With that in mind, the Applicant amended independent claim 38 (issued claim 51) to add:

wherein said lifecycle policies relate to at least two of: file creation, file retention, file reference, file non-use, file security, file protection, file preservation, cost effective storage of a file, and/or file expiration, wherein a file lifecycle comprises aspects of file management including: file classification and/or file storage disposition.

Id. at 106; *see also id.* at 99–101 (Independent claims 1 and 8, which correspond with issued claims 1 and 45, were similarly amended). Thus, the Applicant further defined what was meant by “lifecycle policies” by adding

specific requirements for the lifecycle policies into the claims. Reply 4; *see also* Ex. 1004, 96 (The Examiner understands the “[t]he proposed amendments limit[] the lifecycle policies and what types of policies must be included.”).

Patent Owner argues that based on its definition of lifecycle policies “[s]imply applying rules to files to migrate them (such as in archiving of files) is not within the scope of the invention.” PO Resp. 12, 22–23; Sur-Reply 1–2. We disagree. Rather, migrating or archiving are within the meaning of the claimed lifecycle policy if they satisfy the requirements of element:

[b2] 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.

Ex. 1001, 14:6–11.

We also note that claim element is 1[b2] is broader than the amendment discussed above, because the claims were further amended to only require “at least one of” the listed aspects, instead of two. Ex. 1004, 44–45, 51. Thus, migrating or archiving are within the meaning of the claim if they satisfy the requirements of the claim, including at least one of the claimed aspects of file classification and file disposition. *See* Reply 5–6. Patent Owner does not contest that Blickenstaff teaches element 1[b2] (*see generally* PO Resp.), and as noted previously we find that Blickenstaff teaches lifecycle policies that relate to aspects of file classification and file disposition as required (*see supra* § II.D.a.i.).

Patent Owner also argues that “Blickenstaff’s rules are not associated with the files in a file system.” PO Resp. 12; Sur-Reply 2. However,

Petitioner acknowledges as much in the Petition (Pet. 19), and for this reason, Petitioner cites Crouse as teaching selectable attributes assigned to each remote file and argues that it would have been obvious to modify Blickenstaff's storage management system based on Crouse's teachings (*id.* at 14–15 (citing Long Decl. ¶ 40)). We note that Patent Owner admits that “Crouse is explicit that attributes are associated with the files.” PO Resp. 15.

Patent Owner next argues that “Crouse does not cure the deficiencies of Blickenstaff because it only discusses additional file attributes for archiving,” which it argues is excluded from the meaning of the lifecycle policies because of the new definition given during prosecution. PO Resp. 12; Sur-Reply 2–3. However, we do not agree that the Applicant in prosecution defined lifecycle policies to exclude archiving. Rather, the Applicant's “amendments limit[] the lifecycle policies and what types of policies must be included” to what is included in element 1[b2]. Ex. 1004, 96. Thus, archiving is within the meaning of the claimed lifecycle policy if it satisfies the requirements of element 1[b2]. As noted, this is taught by Blickenstaff.

Based on Petitioner's persuasive evidence and argument and in view of the foregoing discussion, we find the combination of Blickenstaff and Crouse teaches “associating a set of lifecycle policies with a file in a file system,” as recited in claim 1.

iii. 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.

Ex. 1001, 14:25–28.

Petitioner asserts that the limitations of claim element 1[g] are disclosed by Blickenstaff. *See* Pet. 28–30. Petitioner asserts that Blickenstaff teaches transparent access because, among other things, Blickenstaff teaches “that the system ‘create[s] a virtual storage capacity for each of the file servers [] in a manner that is *transparent* to both the processor [] and the user.’” *Id.* (quoting Ex. 1005, 5:49–53) (Petitioner’s emphasis and brackets). Petitioner asserts that “the user and processor (computer running an application) do not even know of the existence of the secondary storage when requesting a file,” thus, teaching that transparent access is provided “regardless of where said file is located” and “regardless of [i.e. independently of] the requesting application.” *Id.* at 28–29 (citing Ex. 1005, 9:7–15, 12:52–54; Long Decl. ¶¶ 64–66).

Petitioner also asserts that Blickenstaff “discloses providing access based on the associated policies because it discloses that access is provided to migrated files.” *Id.* at 30 (citing Long Decl. ¶ 67). Petitioner argues, *inter alia*, that because Blickenstaff “provides access to files through a storage server agent that redirects requests for migrated files,” “providing access to the file would be based on the migration policy/rule, which determined which file to migrate and the secondary storage the requested file is stored on.” *Id.* (citing Long Decl. ¶ 67).

Petitioner in a footnote also states “*Crouse* also discloses that its files are provided in a manner that ‘is completely transparent to the user program.’” *Id.* at 28 n. 2 (quoting Ex. 1011, code (57)); *see also* Long Decl. ¶ 65 (noting the teaching of *Crouse*). However, Petitioner does not otherwise discuss *Crouse* with respect to this limitation. *See generally* Pet. 28–30;

Long Decl. ¶¶ 64, 66–67. Further, Petitioner does not provide any reasoning why it would have been obvious to modify Blickenstaff in view of Crouse for this limitation. *See generally* Pet. 13–17 (Section titled “Rationale for Combining Blickenstaff and Crouse”), 28–30. Thus, we determine that Petitioner relies solely on the teachings of Blickenstaff for claim element 1[g].⁹

Patent Owner argues that two aspects of this claim element are not taught or suggested by the prior art. PO Resp. 16–23. We address each in turn.

1. Transparent . . . Regardless of Where said File is Located

Patent Owner initially addresses the claim construction of “transparent access.” PO Resp. 16–18. We have previously addressed these remarks in our claim construction section above where we determined 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. *See supra* § II.C.a.

Patent Owner argues that Blickenstaff does not teach providing transparent access regardless of where the file is located. PO Resp. 18–20. This is because independent of the location of the file when requested, access is always provided on the file server where the file originated. In other words, if the requested file is in backend storage, it is moved back to the file server where the file originated and access is provided from that file server, not from the backend storage. *Id.* at 18–20 (citing Ex. 1005, 16:61–

⁹ As Petitioner does not rely on Crouse to teach transparent access we do not address Patent Owner’s arguments on this point. *See* PO Resp. 21.

17:7, Fig. 1; Melendez Decl. ¶ 43). Thus, Patent Owner argues “transparent access is not provided *regardless* of where the file is located as access is only provided when the file is located within the file server and volume identified.” *Id.* at 20 (citing Melendez Decl. ¶ 43).

However, the movement of the file between storage locations is transparent to the user (Pet. 29 (“the user and processor . . . do not even know of the existence of the secondary storage when requesting a file”)) and access is provided regardless of where the file is located. Petitioner argues and we agree that moving the file back to the main file server is consistent with the teachings of the ’234 Patent. Reply 18–19 (citing Ex. 1001, 6:37–40); *see also* Ex. 1001, 6:39–40 (“If file is accessed more than 5 times within 30 days, Transfer file back to online one (drawer 23).”). The fact that the file is transparently moved back to the file server where the file originated demonstrates that Blickenstaff provides transparent access regardless of where the file is located, as recited in claim 1.

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

2. Providing Transparent Access to the File Based on the Lifecycle Policies

Patent Owner argues that Blickenstaff does not teach “providing transparent access to said requested file based on said associated set of lifecycle policies” as required by claim 1.¹⁰ PO Resp. 22–23. Similar to the

¹⁰ Patent Owner’s argument that Blickenstaff’s rules are not within the definition of a lifecycle policy (PO Resp. 22–23) is addressed in our discussion on associating a set of lifecycle policies with a file (*supra* § II.D.a.ii).

above argument, Patent Owner argues that because *Blickenstaff* teaches that the file is moved back to the file server where the file originated to provide access, the access is not “based on said associated set of lifecycle policies.” *Id.* at 22. Thus, it is argued, “access is provided . . . regardless of any associated set of lifecycle policies.” *Id.*

Petitioner replies that *Blickenstaff*’s transparent access is “‘based on’ the lifecycle policies because it provides access to migrated files, which were migrated according to *Blickenstaff*’s migration policies.” Reply 19 (citing Pet. 28–30). Petitioner continues “it is those policies that determine where the files are located after migration, and *Blickenstaff*’s users access them without regard to where they are physically located.” *Id.* Petitioner also argues that “[t]his type of access is expressly contemplated by the claims, which recite lifecycle policies related to, for example, ‘file storage locations within a storage medium.’” *Id.* (quoting Ex. 1001, 14:10).

Patent Owner states that this is “outside the scope of the claims because the file access of *Blickenstaff* is not being provided based on a set of lifecycle policies, but rather is being provided based on the location that the files reside irrespective of any alleged lifecycle policy that caused migration of the files.” Sur-Reply 14. We disagree. As noted by Petitioner, claim 1 specifically contemplates lifecycle policies that relate to “file storage locations within a storage medium.” Ex. 1001, 14:10. The manner in which *Blickenstaff* migrates the files before and after the file is requested is all based on the migration rules (aka the lifecycle policies).

Patent Owner also argues that this is a new and improper argument. Sur-Reply 15–16. We do not agree. Petitioner’s explanation during trial does not rise to the level of new argument that is inappropriate in a reply brief

because Petitioner is maintaining its original position that Blickenstaff's transparent access is “‘based on’ the lifecycle policies.”¹¹ Reply 19 (citing Pet. 28–30). Further, Petitioner is directly responding to Patent Owner's argument that Blickenstaff's migration rules are “not within the scope of the invention.” PO Resp. 23; *see also* 37 C.F.R. § 42.23(b).

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

iv. 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 Blickenstaff and Crouse. Pet. 13–30; Long Decl. ¶¶ 37–67.

b. Claims 2, 45, and 51

Petitioner asserts that the combination of Blickenstaff and Crouse would have rendered obvious dependent claim 2 and independent claims 45 and 51. *See, e.g.*, Pet. 31–34, 42–50, 52–57.

As noted by Patent Owner “[i]ndependent claims 45 and 51 recite similar limitations to independent claim 1.” PO Resp. 10–11. At the same

¹¹ As previously noted, we agree with Petitioner that Blickenstaff's migration rules are lifecycle policies. *Supra* § II.D.a.i. Further, Petitioner has shown that Blickenstaff's migration rules are related to “file storage locations within a storage medium.” Pet. 24–25.

time, claims 45 and 51 include additional or slightly different limitations from claim 1 as discussed below.

Petitioner's analysis of claims 45 and 51 claims is largely similar to the analysis of claim 1. *Compare* Pet. 42–50 and 52–57, *with id.* at 17–30. Patent Owner argues the patentability of claims 1, 45, and 51 together in some instances. *See* PO Resp. 16–23. 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.

Patent Owner contests Petitioner's positions on some but not all of the limitations of claims 45 and 51 different from claim 1. Claim 2 depends from claim 1 and includes limitations similar to claims 45 and 51. We first address Patent Owner's contentions, followed by a discussion of the uncontested limitations.

i. A Set of Lifecycle Policies Associated with Virtual Storage / Storage Media

As noted above, Patent Owner contests whether the cited prior art teaches all of the limitations of claims 2, 45, and 51. PO Resp. 13–16.

Claim 45 includes: “providing a virtual storage medium having a plurality of storage media associated therewith, . . . and having associated therewith a set of lifecycle policies.” Ex. 1001, 18:28–33. Claim 2, which depends from claim 1, and independent claim 51 include a similar limitation. *See id.* at 15:3–7, 19:14–18. As discussed above, claim 1 includes the similar, though not identical limitation of “associating a set of lifecycle policies with a file in a file system.” *See supra* § II.D.a.ii.

Petitioner argues that Blickenstaff's Figure 3, reproduced below, teaches the virtual storage medium with a plurality of storage media. Pet. 42–43.

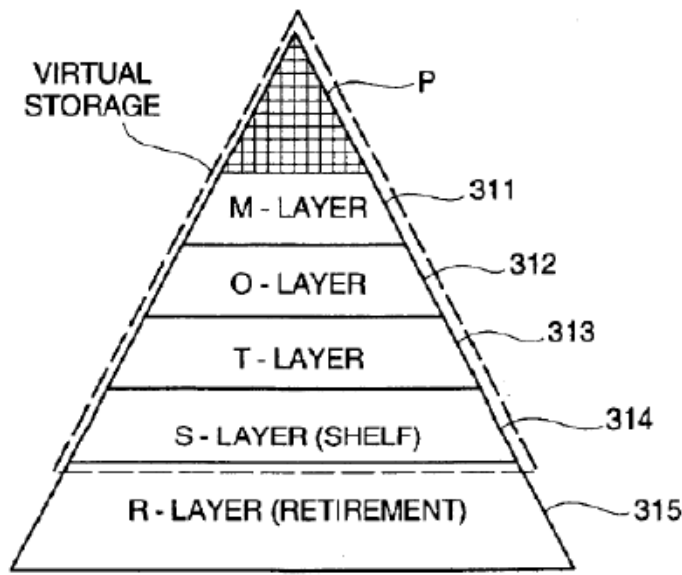


FIG. 3

Blickenstaff's Figure 3 conceptually shows an "architecture of the hierarchical memory of the data storage management system." Ex. 1005, 3:53–55. Petitioner states that the secondary storage of the virtual storage is divided into many layers 311–313, which can represent different media types. Pet. 43.

As previously noted, Petitioner argues that "*Blickenstaff* discloses 'a *plurality* of concurrently operational space management *rules*'" and that "[b]ased on these rules, 'data files can be selected for migration as a function of the time of last access, size, [or] quantity of data storage space available on the network volume.'" *Id.* at 19 (quoting Ex. 1005, 9:67–10:4) (Petitioner's emphasis). As also previously discussed, Petitioner asserts that it would have been obvious "to implement Blickenstaff's hierarchical storage management system with individual attributes for each file to allow finer control of how individual files will be archived and/or migrated within

the storage system” as taught by Crouse. *Id.* at 14–15 (citing Long Decl. ¶ 40).

Petitioner provides various reasons that a person of ordinary skill in the art would have “add[ed] *Crouse*’s archival attributes . . . in addition to or as a substitute for *Blickenstaff*’s file attributes,” such as “to enable *Blickenstaff*’s system to control when files are migrated on a more granular, file-by-file basis.” *Id.* at 20 (citing Long Decl. ¶ 48); *see also id.* at 13–17, 19–20 (discussing rationale to combine). Petitioner further identifies particular attributes taught by Crouse, such as “Life Span” and “Media Residency,” and asserts that a POSA “would have applied Crouse’s attributes in Blickenstaff to enable Blickenstaff’s system to control when individual files are migrated, on a file-by-file basis.” *Id.* at 15–16 (citing Ex. 1011, 21:50–22:6, 5:1–19; Long Decl. ¶ 42).

Petitioner provides a number of reasons why the lifecycle policies are associated with the virtual storage medium. Petitioner argues that a POSA would have understood the lifecycle policies under the cited combination to be associated with the virtual storage medium “because the files are stored on the storage media.” *Id.* at 44–45 (citing Long Decl. ¶ 88).

Petitioner also argues that Crouse’s “Media Residency” attributes would be understood to be associated with the virtual storage medium because the “Media Residency” “[s]pecifies which media types and formats are acceptable for storing or archiving the file.” *Id.* at 33 (quoting Ex. 1011, 15:38–44); *see also* Reply 10. Petitioner asserts that “[a] skilled artisan would have understood that a specific media residency attribute that identifies a specific media on which a particular file may be stored would be associated with that media.” Pet. 33 (citing Long Decl. ¶ 70).

Patent Owner argues that Petitioners' position on this claim limitation fails because it "make[s] no distinction between [lifecycle] policies for a file and for a storage medium." Sur-Reply 3; *see also* PO Resp. 14. Patent Owner further argues that

[t]his contention is contrary to a major point of novelty of the [']234 Patent which clearly discloses associating lifecycle policies with a storage medium—where files within a storage medium would be governed not just by policies associated with the files but also by the policies of the storage medium in which they reside.

Id. (citing Ex. 1001, 4:61–5:20, Fig. 2, Fig. 3A; Melendez Decl. ¶ 58).

However, we do not agree that Petitioner makes no distinction between lifecycle policies associated with a file and lifecycle policies associated with a storage medium. As previously noted, Petitioner argues (Pet. 20) and Patent Owner admits, that "Crouse is explicit that [its] attributes are associated with the files." PO Resp. 15. Further, Petitioner highlights Crouse's "Media Residency" attributes in particular as being associated with the storage medium because the policy "[s]pecifies which media types and formats are acceptable for storing or archiving the file." Pet. 33. Petitioner's position is supported by Dr. Long's testimony that

[a] skilled artisan would have understood that a specific media residency attribute that identifies a specific media on which a particular file may be stored or archived would be associated with that specific media. This is so because the attribute identifies the medium specifically and permits files to be stored/archived on that medium.

Long Decl. ¶ 70.

Thus, Petitioner is not merely relying on the fact that the “the files are stored on the storage media” in order to be associated with the storage media. PO Resp. 13 (quoting Pet. 44–45).

Patent Owner argues that Crouse’s “attributes are associated with the files rather than the storage media—even when the attributes associated with a particular file may relate to a media type.” *Id.* at 15. However, Patent Owner does not offer a construction of the term “associates” that requires more than some relationship to the media. Though Patent Owner discusses certain examples of the different lifecycle policies in the ’234 Patent, these specific policies are not claimed. *Id.* at 13–15. Further, these policies do not clarify what additional relationship a policy needs to have in order to be associated with the storage medium. For example, Patent Owner discusses a file “stored in an optical DVD-ROM storage medium associated with a life cycle policy excluding deletion.” *Id.* at 14. Patent Owner argues that a life cycle policy associated with the file to delete the file at a certain time would not control over the life cycle policy associated with the storage medium. *Id.* Though we agree that a file would not be deleted from the DVD-ROM, that does not mean that a policy which “[s]pecifies which media types and formats are acceptable for storing or archiving the file” is not also associated with the storage medium. *See* Pet. 33. Rather we determine that it is for the reasons expressed above.

Based on Petitioner’s persuasive evidence and argument and in view of the foregoing discussion, we find that the combination of Blickenstaff and Crouse teaches “providing a virtual storage medium having a plurality of storage media associated therewith, . . . and having associated therewith a set

of lifecycle policies.” as required by claim 45, and the similar limitations of claims 2 and 51.

ii. Uncontested Limitations

Patent Owner does not contest that the cited prior art teaches certain limitations of claims 2, 45, and 51. For example, Patent Owner does not contest that the cited prior art teaches or suggests, the following limitation of claim 45:

at intervals, determining from the associated lifecycle policies actions dictated by said lifecycle policies for performance on said file; performing said dictated actions on said file.

Ex. 1001, 18:42–45. Claim 51 includes a similar uncontested limitation. *See id.* at 19:30–32.

Among other things, Petitioner argues that “*Blickenstaff* discloses this feature because it discloses that the migration process may occur ‘on a demand basis and/or on a *periodically scheduled basis*.’” Pet. 47 (quoting Ex. 1005, code (57)) (Petitioner’s emphasis); *see also id.* at 55 (discussing the similar limitation of claim 51). Petitioner further argues that a POSA “would have understood that periodically auditing the files to determine whether to migrate low priority files (*e.g.*, based on a lifespan attribute and/or media residency attribute, as modified by *Crouse*) would determine an action dictated by a lifecycle policy (migration of files) at intervals (periodically)” as required by claims 45 and 51. *Id.* at 47 (citing Long Decl. ¶¶ 93, 96.)

Based on the foregoing, we are persuaded that Petitioner establishes that *Blickenstaff* teaches or suggests the determining at intervals limitation of claim 45 and the related limitation of claim 51 by a preponderance of the evidence. *See id.* at 47–49, 55–57; Long Decl. ¶¶ 93–97, 114–118. Further,

we have reviewed Petitioner’s arguments and supporting evidence regarding the undisputed limitations of claims 2, 45, and 51 and determine that Petitioner has shown by a preponderance of the evidence that Blickenstaff or the combination of Blickenstaff and Crouse teaches each of these limitations.

iii. Conclusion

In conclusion, we are persuaded by Petitioner’s contentions and the underlying evidence cited in support regarding the limitations of claims 2, 45, and 51. We determine that Petitioner establishes by a preponderance of the evidence that the subject matter of these claims would have been obvious based on the combined teachings of Blickenstaff and Crouse. Pet. 31–34, 42–50, 52–57; Long Decl. ¶¶ 68–72, 83–99, 105–120.

c. Dependent Claims 46–48 and 52–54

Petitioner contends that the combination of Blickenstaff and Crouse would have rendered obvious dependent claims 46–48 and 52–54. Pet. 50–51, 57–58.

Independent claim 45, from which claims 46–48 depend, requires, *inter alia*:

storing said file on at least one of said plurality of storage media accessible by a computer *within said virtual storage medium*.

Ex. 1001, 18:39–42 (emphasis added). Independent claim 51, from which claims 52–54 depend, includes a similar limitation. *See id.* at 20:27–29 (“storing said file on at least one of said plurality of storage media accessible by a computer *within said virtual storage medium*” (emphasis added)).

Claim 46 states:

A method of managing a file lifecycle according to claim 45 wherein a first storage medium is associated with active files and

a last storage medium is associated with archived files and wherein the file is transferred from the first storage medium to the last storage medium in successive stages.

Id. at 18:53–58.

Claim 52 is substantially similar to claim 46, except for its dependency. Claim 47 depends from claim 46, and claim 48 depends from claim 47. Claim 53 and 54 are substantially similar to claims 47 and 48 respectively, except for their dependency.

Petitioner argues that Blickenstaff's Figure 3, reproduced below, teaches the virtual storage medium with a plurality of storage media as required by claim 45 (*see* Pet. 42–43) and similarly required by claim 51 (*see* Pet. 54–55) as well as the first storage medium associated with active files and a last storage medium associated with archived files as required by claims 46 and claim 52 (*see* Pet. 50 (citing *id.* at 35–37)).

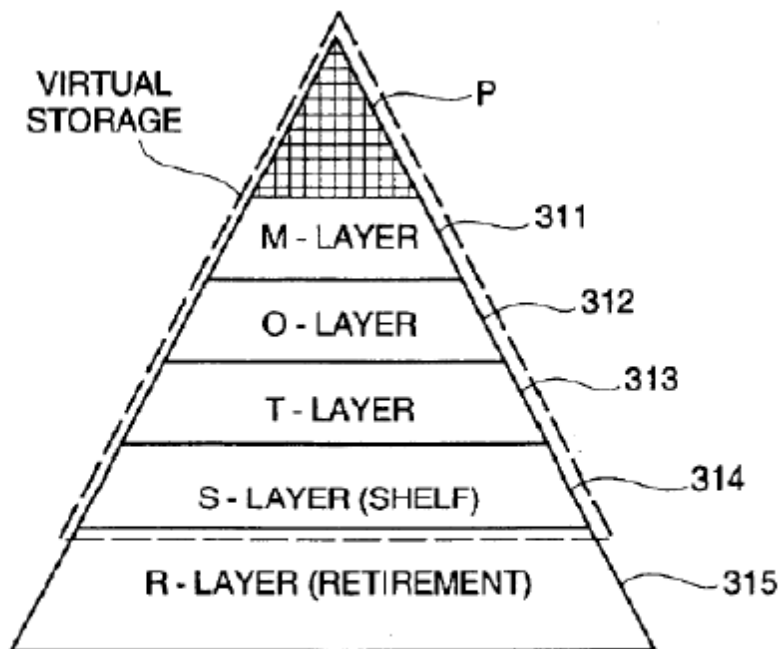


FIG. 3

Blickenstaff's Figure 3 conceptually shows an "architecture of the hierarchical memory of the data storage management system." Ex. 1005, 3:53–55. Figure 3 illustrates a "virtual storage" comprising "a plurality of layers 311–313" of secondary storage and an "additional layer 314 of the hierarchical data storage that can be implemented by the use of a "shelf layer." *See* Ex. 1005, 6:38–57. Figure 3 also shows "retirement layer 315." *Id.* at 6:12–13.

Petitioner states that the secondary storage of Blickenstaff's virtual storage is divided into many layers 311–313, which can represent different media types. Pet. 43. Petitioner argues that Blickenstaff teaches moving files among these layers 311–313 based on the activity of the files as required by claims 46 and 52. *Id.* at 35; *see also id.* at 37, 57. Petitioner contends Blickenstaff's retirement layer 315 is the "last storage medium (retirement layer) that is associated with archived files (files that have not been utilized for an extended period of time), as claimed." *Id.* at 36 (citing Long Decl. ¶¶ 74–75).

Patent Owner argues Petitioner has not shown the cited art teaches "wherein the file is transferred from the first storage medium to the last storage medium in successive stages" as recited in claims 46 and 52. *See* PO Resp. 23–24. Specifically, Patent Owner contends claims 46 and 52 depend from independent claims that recite a "virtual storage medium" and that Petitioner has not shown that the claimed Blickenstaff's retirement layer 315

(the purported “last storage medium”) is part of a virtual storage medium as required by the independent claims.¹² *See* PO Resp. 23–24.

Patent Owner contends Figure 3 of Blickenstaff shows that retirement layer 315 is not part of the virtual storage. *See* PO Resp. 24. Patent Owner further quotes Blickenstaff as teaching that data on the retirement layer is “no longer part of the virtual data storage system.” *Id.* at 25 (quoting Ex. 1005, 8:6–18) (emphasis omitted). Thus, according to Patent Owner, Petitioner has not shown that the prior art teaches all of the features of claims 46 and 52 because Petitioner has not shown that Blickenstaff teaches a last storage medium, associated with archived files, that is part of the virtual storage. *Id.*

In its Reply, Petitioner does not dispute that claims 46 and 52 require that the last storage medium associated with the archived files must be part of the virtual storage. *See* Reply 21–22. Rather, Petitioner responds by changing its position that retirement layer 315 is the last storage layer within the virtual storage to stating that shelf layer 314 is the last storage layer within the virtual storage and that shelf layer 314 is associated with archived files. *Compare* Pet. 36 *with* Reply 21–22 (citing Ex. 1005, 6:61–7:3, 8:2–4; Pet. 35–37, 50, 57). Petitioner cites the Petition and Dr. Long’s Declaration for support that “Blickenstaff discloses successive migration through the layers of its hierarchy based on activity, including to layer 314.” Reply 21 (citing Pet. 50, 57; Long Decl. ¶ 76). Neither the Petition nor Dr. Long’s declaration, however, discusses shelf layer 314, let alone asserts that shelf

¹² Petitioner’s contentions for claims 46 and 52 refer to the contentions for claim 3, which, according to Petitioner, “addresses identical language,” and provide no additional explanation. Pet. 50, 57.

layer 314 is associated with archived files. *See* Pet. 50, 57; Long Decl. ¶ 76. In fact, a word search of the Petition and Dr. Long’s Declaration reveal that shelf layer 314 is not discussed in either document, though it is shown in Blickenstaff’s Figure 3, which is reproduced in the documents. The Petition does include some general statements about moving files between layers, but when discussing Blickenstaff’s embodiment in Figure 3 there is no mention of shelf layer 314, even though layers 311, 312, 313, and 315 are explicitly mentioned. *See* Pet. 35–36; Long Decl. ¶¶ 74–75. We determine that Petitioner’s argument that shelf layer 314 is the claimed last storage medium that is associated with archived files is an improper argument because a “Petitioner may not submit new . . . argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.” Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019, 73.

In its Reply, Petitioner also belatedly attempts to explain how Blickenstaff’s retirement layer, although not considered to be part of Blickenstaff’s virtual storage, is nonetheless part of “virtual storage” as that term is used in the ’234 patent. Reply 22. This argument also is not grounded in Petitioner’s original assertions and is improper in a reply.

Thus, for the reasons expressed above, Petitioner has not sufficiently shown that the combination of Blickenstaff and Crouse teaches all of the limitations of claims 46 and 52, and therefore has not shown that claims 46 and 52 or the claims that depend therefrom (i.e., claims 47, 48, 53, 54), would have been obvious over the combination of Blickenstaff and Crouse.

d. Dependent Claims 3–7, 49, 50, 55–57, and 59

Petitioner contends that the combination of Blickenstaff and Crouse would have rendered obvious dependent claims 3–7, 49, 50, 55–57, and 59. Pet. 13–17, 35–41, 51, 58–61. Patent Owner does not separately argue the patentability of these dependent claims. *See generally* PO Resp.

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 Blickenstaff and Crouse suggests each limitation of claims 3–7, 49, 50, 55–57, and 59. *See* Pet. 35–41, 51, 58–61; Long Decl. ¶¶ 73–82, 103–104, 124–128. 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. *See* Pet. 13–17; Long Decl. ¶¶ 37–44. Therefore, Petitioner establishes by a preponderance of the evidence that the subject matter of claims 3–7, 49, 50, 55–57, and 59 would have been obvious based on the combined teachings of Blickenstaff and Crouse.

III. CONCLUSION¹³

For the reasons discussed above, we determine Petitioner has proven, by a preponderance of the evidence, that some of 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)	Blickenstaff, Crouse	1–7, 45, 49–51, 55–57, 59	46–48, 52–54

IV. ORDER

For the reasons given, it is

ORDERED that claims 1–7, 45, 49–51, 55–57, 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.

¹³ 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).

IPR2019-00603
Patent 7,392,234 B2

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