

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VEEAM SOFTWARE CORPORATION,  
Petitioner,

v.

HYBIR, INC.,  
Patent Owner.

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IPR2020-01040  
Patent 9,679,146 B2

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Before BART A. GERSTENBLITH, GARTH D. BAER, and  
JOHN R. KENNY, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

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

## I. INTRODUCTION

### A. Background

Veeam Software Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting institution of *inter partes* review of claims 1–7 (“the Challenged Claims”) of U.S. Patent No. 9,679,146 B2 (Ex. 1001, “the ’146 patent”). Hybir, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 5, “Prelim. Resp.”). In accordance with our prior authorization (Paper 6), Petitioner filed a Reply to the Preliminary Response (Paper 8, “Prelim. Reply”), limited to responding to Patent Owner’s arguments regarding 35 U.S.C. § 325(d) and non-enablement of the asserted prior art, and Patent Owner filed a Sur-reply to Petitioner’s Reply (Paper 10, “Prelim. Sur-reply”). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of the Challenged Claims. Paper 11 (“Inst. Dec.”).

After institution, Patent Owner filed a Patent Owner Response (Paper 16, “PO Resp.”), Petitioner filed a Reply to Patent Owner’s Response (Paper 21, “Pet. Reply”), and Patent Owner filed a Corrected Sur-reply<sup>1</sup> (Paper 30, “PO Sur-reply”). Additionally, we requested that each party file initial and responsive papers on the “ordinary and customary meaning of the term ‘inventory’ as that term is used in the challenged claims.” Paper 28 (Order). In response, the parties each filed Initial Papers (Paper 31 (Patent Owner’s Initial Paper) (“PO Initial Paper”), Paper 32 (Petitioner’s Initial Paper) (“Pet. Initial Paper”)) and Responsive Papers (Paper 33 (Patent

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<sup>1</sup> Patent Owner’s first-filed Sur-reply (Paper 25) included citations to an improperly filed declaration. With prior authorization, Patent Owner filed its Corrected Sur-reply (Paper 30) to remove citations to that now-expunged declaration.

Owner's Responsive Paper) ("PO Resp. Paper")), Paper 34 (Petitioner's Responsive Paper) ("Pet. Resp. Paper")). An oral hearing was held on September 23, 2021, and a copy of the transcript was entered in the record. Paper 35 ("Tr.").<sup>2</sup>

We have jurisdiction pursuant to 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. Petitioner bears the burden of proving unpatentability of the Challenged Claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2019). Having reviewed the arguments and the supporting evidence, we determine that Petitioner has shown, by a preponderance of the evidence, that the Challenged Claims of the '146 patent are unpatentable.

*B. Related Proceedings*

Petitioner and Patent Owner identify the following related matter: *Hybir, Inc. v. Veeam Software Corp.*, No. 1:20-cv-10329 (D. Mass) (filed Feb. 19, 2020). Pet. 3; Paper 4 (Patent Owner's Mandatory Notices), 2. In addition, Petitioner filed two petitions challenging claims of related U.S.

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<sup>2</sup> The oral hearings for this proceeding and three related proceedings (IPR2020-01037, IPR2020-01038, and IPR2020-01039) were held together because many of the issues presented by the parties overlap. Paper 26 (Order Granting the Parties' Requests for Oral Hearing), 1.

Patent No. 8,051,043 B2 (“the ’043 patent”) in IPR2020-01037 and IPR2020-01038, and a petition challenging claims of related U.S. Patent No. 9,037,545 B2 (“the ’545 patent”) in IPR2020-01039.<sup>3</sup> *See* Pet. 3.

*C. Real Parties in Interest*

Petitioner identifies Veeam Software Corporation as the real party in interest. Pet. 3. Patent Owner identifies Hybir, Inc. as the real party in interest. Paper 4, 2.

*D. The Instituted Grounds of Unpatentability and Declaration Evidence*

Petitioner challenges the patentability of claims 1–7 of the ’146 patent on the following grounds:

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §<sup>4</sup></b> | <b>Reference(s)/Basis</b>  |
|----------------------------|--------------------------------|----------------------------|
| 1–7                        | 103(a)                         | Field <sup>5</sup>         |
| 1–7                        | 103(a)                         | Strong, <sup>6</sup> Field |

Pet. 4; Inst. Dec. 3. Petitioner supports its challenge with two declarations by Prashant Shenoy, Ph.D., one submitted with the Petition (Ex. 1002 (Declaration of Dr. Prashant Shenoy, Ph.D.)) and the other submitted with Petitioner’s Reply (Ex. 1019 (Declaration of Dr. Prashant Shenoy, Ph.D. in

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<sup>3</sup> The application that issued as the ’146 patent is a continuation of the application that issued as the ’545 patent, which itself is a continuation of the application that issued as the ’043 patent.

<sup>4</sup> The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Because the ’146 patent has an effective filing date before March 16, 2013, we apply the pre-AIA versions of the statutory bases for unpatentability.

<sup>5</sup> U.S. Patent Application Publication No. 2006/0212439 A1, published Sept. 21, 2006 (Ex. 1004, “Field”).

<sup>6</sup> U.S. Patent Application Publication No. 2006/0101064 A1, published May 11, 2006 (Ex. 1005, “Strong”).

support of Petitioner’s Reply to Patent Owner’s Response)). Patent Owner supports its arguments with a Declaration by Jon B. Weissman, Ph.D. (Ex. 2015 (Declaration of Dr. Jon Weissman, Ph.D. in Support of Patent Owner’s Response)).

*E. The ’146 Patent*

The ’146 patent “relates generally to computer data rights and data identity.” Ex. 1001, 1:19–20. The ’146 patent indicates that a common inefficiency of most prior art backup techniques is that they rely on taking an initial image or full backup of the entire contents of a computer system. *Id.* at 1:51–53. Another purported inefficiency is that many systems will maintain multiple copies of the same files. *Id.* at 2:13–15. An object of the ’146 patent is “to provide a more efficient method and system for managing files, file rights, and file identity.” *Id.* at 2:24–26.

Figure 1 of the ’146 patent is reproduced below:

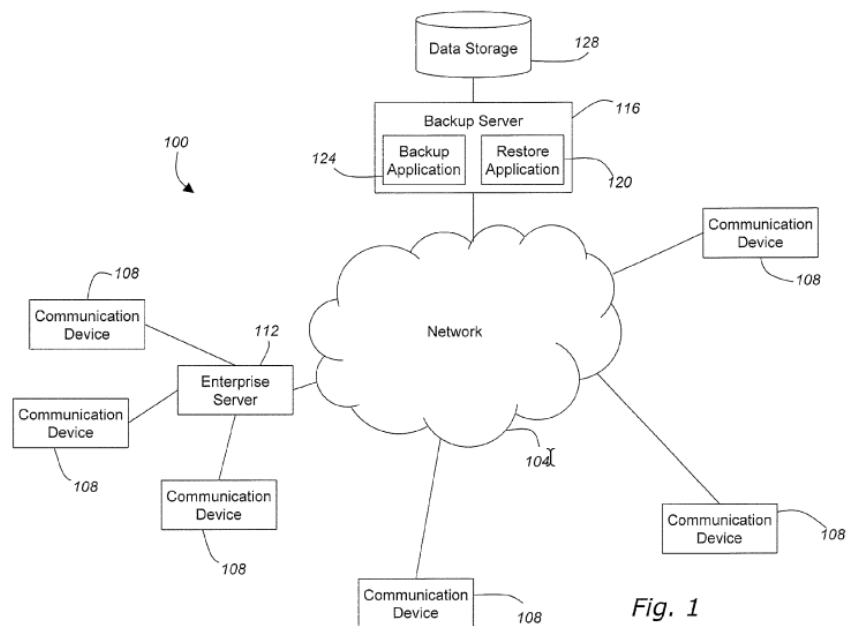


*Fig. 1*

Figure 1 is a block diagram depicting communication system 100, which includes communication network 104, one or more communication devices 108, enterprise server 112, backup server 116, and data storage 128. Ex. 1001, 3:62–64, 4:61–67. “[B]ackup server 116 is characterized by the ability to manage a file backup system for a group of users, each of which may be associated with one or more communication devices 108.” *Id.* at 5:41–44. Additionally, “backup server 116 is provided with a backup application 124 to enable users to backup files from their respective communication devices 108 to either the backup server 116 or to the data storage 128.” *Id.* at 5:45–49.

Figure 2 of the ’146 patent is reproduced below:

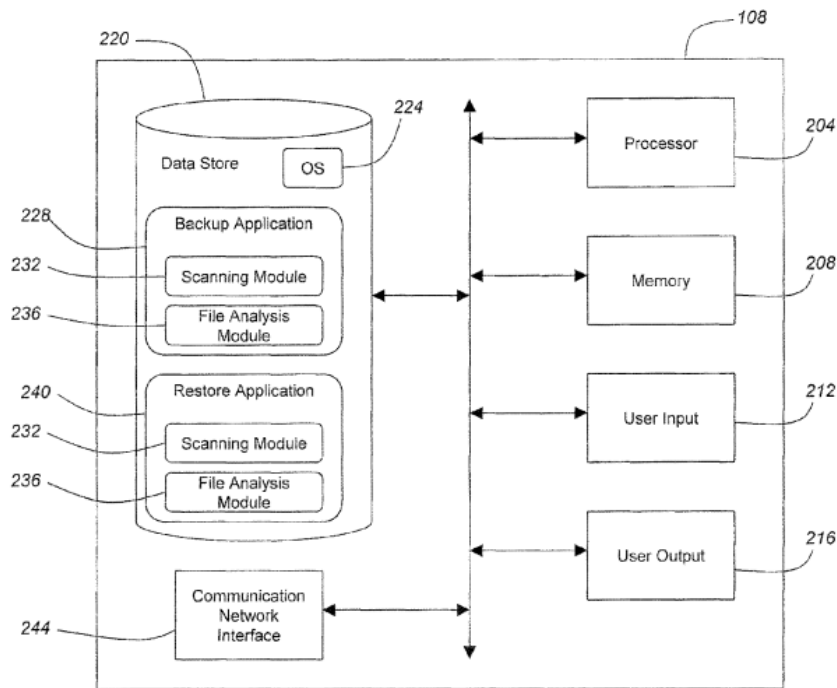


Fig. 2

Figure 2 is a block diagram of communication device 108. Ex. 1001, 3:65–67, 7:33–36. Communication device 108 includes data storage 220, which includes backup application 228 and restore application 240 “that provides

functionality similar to the backup server 116 described in relation to FIG. 1.” *Id.* at 8:1–3, 8:12–15. Backup application 228 can backup files from communication device 108 to a remote storage location, such as data storage 128. *Id.* at 8:15–19. “To facilitate coordination of a group-based backup system,” backup application 228 includes scanning module 232 and file analysis module 236. *Id.* at 8:19–22. Scanning module 232 “perform[s] an initial scan of local files to make a quick determination as to whether file data has been changed, updated, added, etc.” *Id.* at 8:22–25. File analysis module 236 “perform[s] a more in-depth analysis of files that the scanning module 232 has identified as possibly changed, updated, added, and so on.” *Id.* at 8:37–40.

Figure 3 of the ’146 patent is reproduced below:

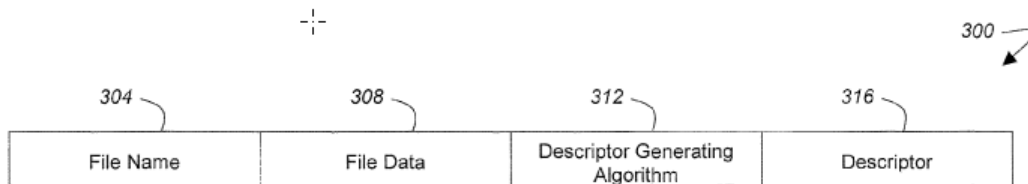


*Fig. 3*

Figure 3 is a logical representation of data structure 300, which is used to manage files and data structures in a backup/restore operation. Ex. 1001, 4:1–3, 9:56–59. The data structure includes descriptor generating algorithm field 312 and descriptor field 316. *Id.* at 9:59–62. Each electronic file or portion of a file may have a descriptor associated with it. *Id.* at 10:51–52. “[C]ommunication device 108 and backup server 116 can reference a common file by independently generating a descriptor for the file using an agreed upon descriptor generating algorithm.” *Id.* at 10:55–58. The “descriptor may be a combination of file metadata (e.g., file storage location

and other bibliographic information pertaining to the file) and cryptographic signature or signatures.” *Id.* at 2:50–53.

Figure 5 of the ’146 patent is shown below:

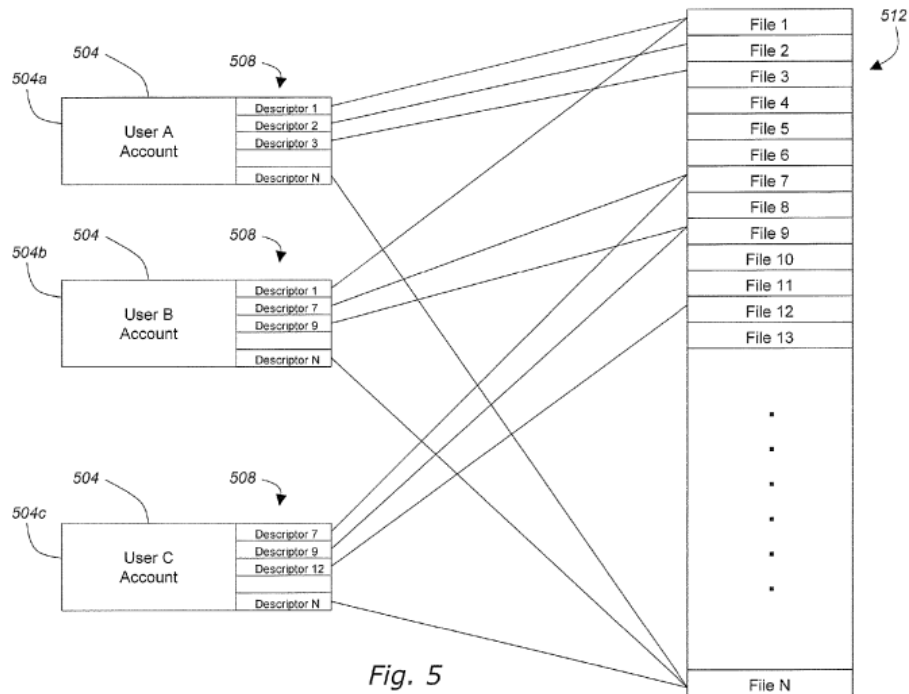


Figure 5 shows a group-based backup data structure, which is typically maintained on backup server 116. Ex. 1001, 4:6–8, 11:23–28. Backup server 116 maintains inventories 504 for each user account. *Id.* at 11:28–29. Backup server 116 may maintain a list of backed up files 512 currently stored in the common data storage 128 and may reference the list of backed up files 512 through a descriptor mapping. *Id.* at 11:46–49. “In other words, the file data itself may be maintained on the data storage 128 and the backup server 116 may maintain its list of backed up files 512 as a list of descriptors.” *Id.* at 11:49–52.

The ’146 patent explains that “backup server 116 can quickly compare the descriptors associated with each user to the descriptors outlined in the list of backed up files 512 to determine[] which files each user has access

to.” Ex. 1001, 11:52–56. Thus, “backup server 116 only has to maintain one copy of any file in the data storage 128 and can utilize a descriptor mapping to determine which user and/or communication device 108 is allowed access to the one copy of a file.” *Id.* at 11:56–60. The ’146 patent states:

This is particularly useful in situations where a single file is stored on a number of different communication devices 108. Each communication device 108 may utilize the file locally but desires a backup of the file on the data storage 128. The backup server 116 can provide the backup facilities for the file but does not have to maintain a separate copy corresponding to each copy in the communication system 100.

*Id.* at 11:60–67.

Figure 6 of the ’146 patent is reproduced below:

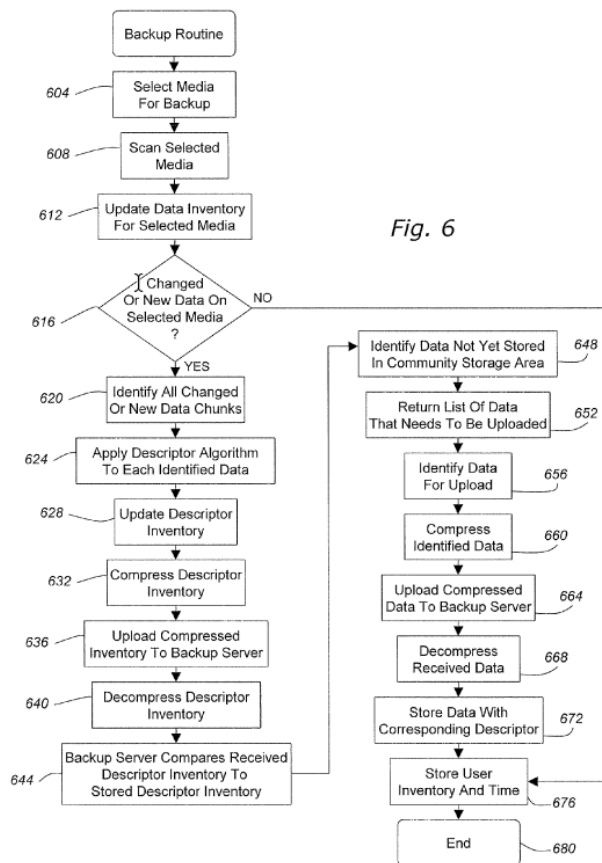


Figure 6 depicts a backup routine. Ex. 1001, 4:9–11, 12:38–40. In step 604, media is selected for backup at communication device 108 or at enterprise server 112. *Id.* at 12:44–47. In step 608, scanning module 232 scans the selected media, creating a snapshot identifying the electronic data (e.g., files) on the selected media and the time at which those files resided there, and also scans the metadata of the various files in the selected media to determine if any files have a changed timestamp that is more recent than the last backup. *Id.* at 12:55–67.

In step 612, scanning module 232 may update the file inventory for the selected media. Ex. 1001, 13:1–2. In step 616, scanning module 232 determines if there is any data on the selected media that have been changed or added and, in step 620, identifies the changed or new electronic data and updates the inventory of files. *Id.* at 13:10–20. In step 624, “the backup application 228 employs the file analysis module 236 to apply the predetermined descriptor generating algorithm to each identified piece of data”—the algorithm is applied to “any file, portion of file, chunk of data, or data structure that has been identified as changed or new to create a new descriptor corresponding to that piece of data.” *Id.* at 13:21–13:29.

In step 628, file analysis module 236 updates the descriptor inventory locally and, following compression in step 632, the compressed inventory is transmitted across communication network 104 to backup server 116, in step 636. Ex. 1001, 13:30–33, 13:40–42, 13:47–49. The backup server 116 decompresses the descriptor inventory and stores the inventory as part of user’s inventory 504 in list of descriptors 508. *Id.* at 13:49–52. In step 644, backup server 116 uses backup application 124 to compare the received descriptor inventory to descriptors in the list of backed up files 512,

“determin[ing] for each descriptor in the received descriptor inventory, whether the corresponding file, file portion, chunk of data, or data structure is already stored in the data storage 128.” *Id.* at 13:56–63. Backup application 124 generates a list of data portions (e.g., a list of files) that need to be uploaded because they are not currently on data storage 128 and that list, “usually in the form of descriptors,” is sent to communication device 108 in step 652. *Id.* at 13:65–14:3.

Communication device 108 receives the list of descriptors, identifies the corresponding data or files, and then compresses the identified data using backup application 228 in step 660. Ex. 1001, 14:4–10. The compressed data and corresponding descriptors are then uploaded to backup server 116 in step 664. *Id.* at 14:15–17. The ’146 patent explains that although additional processing is required to compare descriptors, “by performing this preliminary check . . . the amount of data transmitted may be greatly reduced if the backup server 116 has copies of most of the files,” thus reducing the amount of data required for transmission and thereby increasing the speed of a backup operation. *Id.* at 14:17–27.

Figure 7 of the '146 patent is reproduced below:

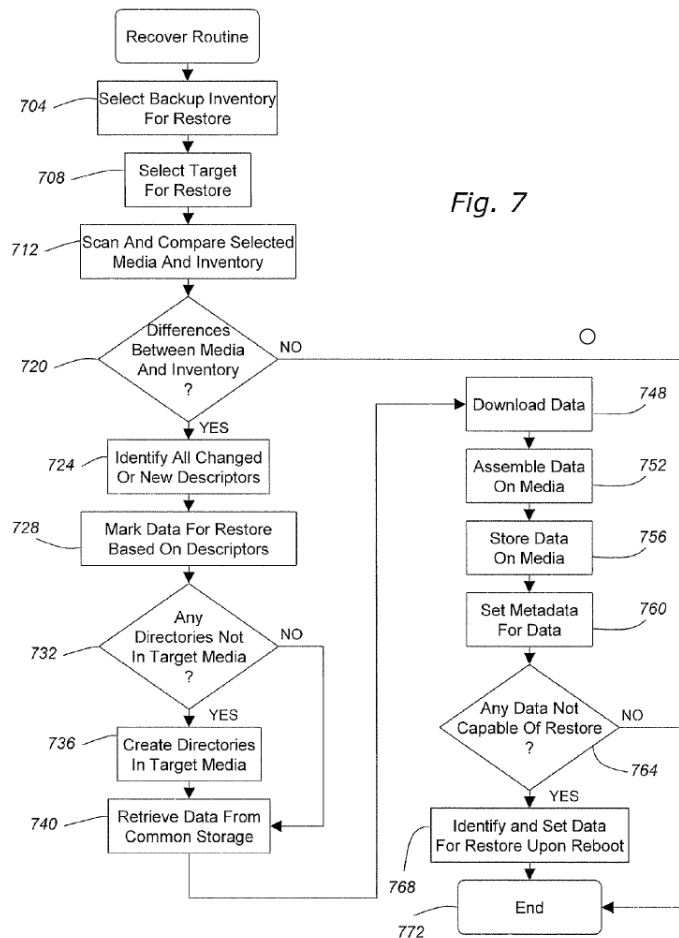


Figure 7 is a flow chart depicting aspects of a restore/recover routine. Ex. 1001, 4:12–14, 14:48–50. As the '146 patent explains, “[t]he recover routine begins with the selection of a backup inventory for the restore” in step 704, where “a user essentially selects the point-in-time that they would like to have their communication device 108 restored back to” or is “automatically selected if there is only one backup for a particular communication device 108.” *Id.* at 14:55–60. In step 708, a user selects the target media (e.g., “a C: drive of a communication device 108 or a particular network drive associated with the enterprise server 112”) for the restore. *Id.* at 14:66–15:2.

In step 712, restore application 240 of communication device 108 scans the selected target media and compares the selected media with the inventory. Ex. 1001, 15:3–6. “[R]estore application 240 determines if there are any differences between the media and the inventory” in step 720. *Id.* at 15:19–21. The ’146 patent explains:

If any differences are detected, the method continues by identifying the changed electronic data and its corresponding descriptor from the inventory (step 724). More specifically, after the scanning and comparison step, electronic data that is identified as potentially different due to timestamp differences are analyzed to generate the descriptors. If the descriptor is different from the previous descriptor, then the former descriptor is added to the list of files to restore. This can eliminate the need to restore large amounts of data in certain scenarios. For instance, during a restore of a particular backup of a communication device 108 over another communication device 108 such a feature may be useful. However, most electronic data does not usually change since its previous backup and such data would be identified as unchanged if not by the scanning step, then by the comparison of the descriptors. The descriptors from the inventory represent the electronic data at the time the last backup occurred. Those files or electronic data that have changed since the identified point-in-time are then marked for restoration (step 728). More specifically, in accordance with certain embodiments of the present invention, the descriptors corresponding to the electronic data are marked for restoration.

*Id.* at 15:26–48.

In step 732, restore application 240 determines if any directories in the inventory are not present in the target media and, if not present, restore application 240 creates those directories in the target media in step 736. Ex. 1001, 15:49–54. In step 740, restore application 240 then requests that the backup server retrieve the electronic data, which is performed by first

checking locally to see if the most recent backup is on communication device 108 or some other local media, but, if it is not, restore application 240 provides the list of descriptors marked for restore to backup server 116. *Id.* at 15:60–16:2, 16:8–11. “[B]ackup server 116 utilizes the descriptor to file mapping to retrieve the requested electronic data from the data storage 128.” *Id.* at 16:11–13. Backup server 116 is able to allow communication device 108 to access only the files and other data listed in the inventory associated with the device, thus securely maintaining files that the device never had. *Id.* at 16:13–19. “Accordingly, the descriptor in this step acts as a credential to the files or electronic data that were previously backed up from the communication device 108.” *Id.* at 16:19–22.

In step 748, backup server 116 downloads the electronic data to requesting communication device 108 and restore application 240 stores all of the electronic data on the target media in step 756. Ex. 1001, 16:23–30. In step 764, “[f]ollowing the reassembly and restoration of the target media[,] the restore application 240 determines if there are any files or other electronic data not currently capable of a restore” and identifies and sets such files for a restore upon reboot. *Id.* at 16:43–52.

*F. Illustrative Claim*

Claim 1, the sole independent claim challenged in this proceeding, is illustrative of the claimed subject matter and is reproduced below, with Petitioner’s bracketing added for reference:

1. [1-pre] A method of synchronizing electronic data stored on a first client device with at least a second client device, the method comprising:

[1A.1] receiving, at a backup server, a first inventory of electronic data stored on a first remote storage medium associated with a first client device, wherein the electronic data

comprises actual file data to be backed-up from the first remote storage medium, [1A.2] wherein the first inventory comprises at least one descriptor and wherein the at least one descriptor comprises a cryptographic signature computed based on the actual file data, the cryptographic signature uniquely identifying the electronic data to be backed-up;

[1B] comparing, at the backup server, the at least one descriptor of the first inventory to a list of descriptors associated with a second inventory of electronic data stored on a backup data storage medium, wherein the second inventory of electronic data comprises shared electronic data from a second remote storage medium associated with the at least a second client device as well a plurality of other storage mediums different from the first and second remote storage mediums, and wherein the at least one descriptor of the first inventory is compared with descriptors in the second inventory that correspond, at least partially, to data stored on the backup data storage medium by storage mediums different from the first remote storage medium;

[1C] determining that a first descriptor from the at least one descriptor of the first inventory does not match a second descriptor from the list of descriptors associated with the second inventory;

[1D] storing, on the backup data storage medium, the electronic data that is uniquely identified by the cryptographic signature;

[1E] determining that the second remote storage medium does not have the electronic data that is uniquely identified by the cryptographic signature stored therein;

[1F] determining that the second remote storage medium is permitted to have the electronic data that is uniquely identified by the cryptographic signature; and

[1G] providing the electronic data that is uniquely identified by the cryptographic signature from the backup server to the at least a second client device so that the electronic

data that is uniquely identified by the cryptographic signature  
can be stored on the second remote storage medium.

Ex. 1001, 19:8–20:14.

*G. Level of Ordinary Skill in the Art*

Petitioner, supported by Dr. Shenoy’s testimony, proposes that a person of ordinary skill in the art at the time of the invention would have had “a B.S. degree in Computer Science, Computer Engineering, Electrical Engineering, or an equivalent field, as well as at least 3–5 years of academic or industry experience in the fields of data backup, data restore, data replication, and/or data synchronization.” Pet. 9 (citing Ex. 1002 ¶¶ 13–18).

As we noted in the Institution Decision, Patent Owner’s Preliminary Response proposed a level of ordinary skill in the art that was very similar to Petitioner’s proposal. Inst. Dec. 15 (citing Prelim. Resp. 28). On the preliminary record at that time, we found both parties’ proposals consistent with the level of ordinary skill in the art reflected by the prior art of record. *Id.* (citing *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978)). And, on that record, we found that one of ordinary skill in the art at the time of the invention would have “a Bachelor of Science degree in Computer Science, Computer Engineering, Electrical Engineering, Software Engineering, or an equivalent field, as well as at least three to five years of academic or industry experience in the fields of data storage, data backup, data restoration, data replication and deduplication, and/or data synchronization.” *Id.* at 16.

In its Patent Owner Response, Patent Owner, relying on Dr. Weissman’s testimony, appears to adopt the same level of ordinary skill in the art set forth in the Institution Decision, without explicitly stating so.

PO Resp. 21 (citing Ex. 2015 ¶ 18). In particular, Patent Owner proposes that a person of ordinary skill in the art at the time of the invention would

at least have a Bachelor of Science degree in Computer Science, Computer Engineering, Electrical Engineering, Software Engineering, or an equivalent field, as well as at least 3–5 years of academic or industry experience in the fields of data storage, data backup, data restoration, data replication and deduplication, and/or data synchronization.

*Id.* (citing Ex. 2015 ¶ 18).

As reflected above, Patent Owner agrees with our preliminary finding regarding the level of ordinary skill in the art and Petitioner does not address our preliminary finding in its Reply. Accordingly, we see no reason to disturb that finding, and, therefore, we maintain and reaffirm that one of ordinary skill in the art at the time of the invention would have had a Bachelor of Science degree in Computer Science, Computer Engineering, Electrical Engineering, Software Engineering, or an equivalent field, as well as at least three to five years of academic or industry experience in the fields of data storage, data backup, data restoration, data replication and deduplication, and/or data synchronization.

## II. CLAIM CONSTRUCTION

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2019). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take

into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

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*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Another exception to the general rule that claims are given their ordinary and customary meaning is “when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1313 (Fed. Cir. 2013) (quoting *Thorner v. Sony Computer Entm’t Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

A. “synchronizing electronic data stored on a first client device with at least a second client device”

The above-quoted limitation is recited in the preamble of claim 1, which states: “A method of synchronizing electronic data stored on a first client device with at least a second client device.” Ex. 1001, 19:8–9.

Petitioner contends the preamble of claim 1 is not limiting because it states a

purpose or intended use for the method recited and neither the term synchronizing nor the full preamble is referenced again in other claim elements. Pet. 10 (citing *Arctic Cat Inc. v. GEP Power Prods, Inc.*, 919 F.3d 1320, 1328 (Fed. Cir. 2019)). In our Institution Decision, we preliminarily determined that the preamble of claim 1 does not limit the scope of the claim. *See* Inst. Dec. 18–19. Patent Owner does not contest that preliminary determination in its Response and confirmed at the oral hearing that it does not contend the preamble is limiting. *See generally* PO Resp.; Tr. 107:15–16 (confirming that Patent Owner does not assert the preamble is limiting). Accordingly, for the reasons explained in our Institution Decision and because the parties agree, we maintain our preliminary determination and reaffirm that the preamble of claim 1 is not limiting, and, therefore, we need not expressly construe it.

*B. Inventory*

Pre-institution, neither party proposed any other claim terms for construction. Inst. Dec. 20. In the briefing following institution, Patent Owner proposed a construction for the term “inventory,” *see, e.g.*, PO Resp. 21–28, and it became clear that the parties dispute the meaning of the term. Accordingly, we address the parties’ arguments and proposed constructions.

*1. The Parties’ Proposed Constructions*

Patent Owner contends that “inventory” should be construed as “electronic data that reflects the current state of a storage medium and includes a list of files on the storage medium[,] at least one descriptor

identifying the file(s)[,] and the directory structure of the file(s).”<sup>7</sup> PO Resp. 22 (citing Ex. 1001, 8:30–62, 15:49–60; Ex. 2015 ¶ 70); PO Initial Paper 1 (emphasis omitted).

Petitioner contends that “inventory” should be construed as “an itemized list of electronic data.” Pet. Reply 1–4; Pet. Initial Paper 1. In particular, Petitioner contends that “inventory” should be “afforded its ordinary and customary meaning,” (Pet. Reply 1–2 (citing Pet. 10)), which, as recited in the Challenged Claims, is “an itemized list of electronic data” (Pet. Initial Paper 1).

## 2. *The Parties’ Arguments*

### a. *Patent Owner’s Response*<sup>8</sup>

As set forth above, Patent Owner contends that “inventory” should be construed as “electronic data that reflects the current state of a storage medium and includes a list of files on the storage medium[,], at least one descriptor identifying the file(s)[,] and the directory structure of the file(s).” PO Resp. 22 (citing Ex. 1001, 8:30–62, 15:49–60; Ex. 2015 ¶ 70) (emphasis omitted). Patent Owner asserts that the Specification explains that “the file inventory reflects the current state of the drive and may include a description of the hierarchical structure of the drive as well as markers identifying sizes of chunks of files.” *Id.* (citing Ex. 1001, 8:30–33, 13:36–40, 15:49–60; Ex. 2015 ¶ 71). Patent Owner contends that “[t]he electronic data that is part

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<sup>7</sup> Patent Owner’s Initial Paper added two commas to the proposed construction, which help identify the specific aspects of Patent Owner’s proposal. PO Initial Paper 1. Whether or not the commas are included, the analysis below is effectively the same.

<sup>8</sup> As noted above, Patent Owner’s Response was the first instance either party proposed an express construction of “inventory.”

of the inventory includes raw data and metadata” (*id.* (citing Ex. 1001, 8:47–50; Ex. 2015 ¶ 71)), and “[t]he unique descriptor stored in an inventory is generated from raw data and metadata of a file or portion of a file and the directory structure of the same file / portion of the same file” (*id.* (citing Ex. 1001, 8:47–54, 15:54–56; Ex. 2015 ¶ 71)).

Patent Owner relies on Figure 7 of the ’146 patent, which “is a flow chart depicting aspects of a restore routine.” Ex. 1001, 4:12–13; *see* PO Resp. 22 (citing Ex. 1001, Fig. 7; Ex. 2015 ¶ 71). Patent Owner contends that Figure 7 and the description thereof in the Specification support its construction of inventory. PO Resp. 22–24 (citations omitted). In particular, Patent Owner asserts that “a backup inventory stores descriptors, which correspond to the electronic data marked for restoration, as well as directory structures for the restored data.” *Id.* at 23 (citing Ex. 1001, 15:45–48; Ex. 2015 ¶ 72). Patent Owner notes that the Specification states that after the descriptors are marked for restoration, the ““restore application continues by determining if any directories in the inventory are not present in the target media.”” *Id.* (quoting Ex. 1001, 15:49–52). Patent Owner states that “[i]f there are directories stored in the backup inventory and not in the target media, then those directories are created for the target media.” *Id.* (citing Ex. 1001, 15:52–54). Patent Owner refers to the remainder of the restore process, contending that “the backup inventory provides enough data to allow for a complete restore of a client device.” *Id.* at 24 (citing Ex. 2015 ¶ 73).

Additionally, Patent Owner contends that its proposed construction “is consistent with [inventory’s] ordinary meaning.” PO Resp. 24 (citing Ex. 2015 ¶ 74). In particular, Patent Owner points to two extrinsic

dictionary definitions of “inventory,” which define “inventory” as “a complete list of items such as property, goods in stock, or the contents of a building” and “a detailed list of all the things in a place,” and an extrinsic definition of “data backup inventory” as a “detailed and often descriptive catalog, aggregate view or list of relevant Data Backup Items that is often somewhat important, sanctioned or approved in its nature.” *Id.* (citing Ex. 2019 (Google webpage showing definition of “inventory” from “Oxford Languages”), 1; Ex. 2020 (webpage showing definition of “inventory” from the Cambridge English Dictionary), 1; Ex. 2021 (webpage showing definition of “data backup inventory” from The International Foundation for Information Technology), 1; Ex. 2015 ¶¶ 74–75).

Patent Owner contends that Petitioner and Dr. Shenoy assert that “inventory” is simply “an itemized list,” which can consist of “a list of ‘signatures corresponding to the one or more selected files for backup.’” PO Resp. 25 (citing Pet. 31); *id.* at 25–26 (quoting Ex. 2022 (transcript of Dr. Shenoy’s deposition), 97:18–98:13, 98:24–100:2). Patent Owner asserts that Petitioner’s construction “is contradicted by the intrinsic evidence including the claim language itself” because the claims “clearly and repeatedly use the terms inventory and list in different ways.” *Id.* at 26 (citing Ex. 2015 ¶ 78). Although neither Patent Owner nor Dr. Weissman explains the different use of “inventory” and “list,” Patent Owner points to claim 1 of the ’146 patent noting that the following language makes clear that “a ‘list of descriptors’ is part of, but not identical to the inventory”: “comparing, at the backup server, the at least one descriptor of the first inventory to a *list of descriptors associated with* a second inventory of electronic data stored on a backup data storage medium.” *Id.* (citing

Ex. 2015 ¶ 79; Ex. 1001, claim 1). Additionally, Patent Owner asserts that Dr. Shenoy agreed that additional data about the current state of the drive would be needed to provide a volume backup. *Id.* at 26–27 (quoting Ex. 2022, 45:3–15, 46:11–23).

Further, Patent Owner contends that “use of the language ‘associated with’ indicates that there is more than just a list of descriptors for an inventory of electronic data, *e.g.*, directory structure of the electronic data.” PO Resp. 27 (citing Ex. 2015 ¶ 80). And, Patent Owner contends, because the ordinary meaning of “inventory” includes the terms “detailed” and “complete,” the extrinsic evidence “does not support Dr. Shenoy’s construction of inventory as merely an ‘itemized list.’” *Id.* (citing Ex. 2015 ¶ 80). Patent Owner further asserts that its construction “is consistent with the embodiments described and claimed in the ’146 Patent, in which inventories are transmitted between the communication device and backup server to determine which files to backup or restore in view of the current state of the drive on the communication device.” *Id.* at 28 (citing Ex. 1001, claim 1; Ex. 2015 ¶ 81).

*b. Petitioner’s Reply*

In its Reply, Petitioner contends that “inventory” should be “afforded its ordinary and customary meaning” and that Patent Owner propounds “an improperly narrow construction of the term ‘inventory,’ purporting to import *four* separate requirements into this single term.” Pet. Reply 1–2. In particular, Petitioner asserts that Patent Owner’s construction seeks to require that an inventory: (1) reflect the current state of a storage medium, (2) include a list of files on the storage medium, (3) include at least one descriptor identifying the file(s), and (4) include the directory structure of

the file(s). *See id.* at 2 (citing Ex. 1020 (transcript of Dr. Weissman’s deposition), 39:13–40:13; PO Resp. 22).

First, Petitioner contends that “[i]mportation of these four limitations is improper . . . because the claims themselves define the ‘inventory.’” Pet. Reply 2 (citations omitted).

Second, Petitioner argues that Patent Owner’s construction “is also inconsistent with the ’146 patent specification, which provides no definition for the term ‘inventory’ nor any specific requirements, much less the four propounded by” Patent Owner. Pet. Reply 3 (citing Ex. 1019 ¶¶ 6–8). Petitioner contends that “the specification uses the term as an open-ended construct, merely providing examples of what data *may* be included in an inventory—not what *must* be.” *Id.* at 3 (citing Ex. 1001, 8:30–33, 11:50–54; Ex. 1019 ¶¶ 9, 12–13). Petitioner provides additional discussion of each clause in Patent Owner’s proposed construction, arguing that each is improper in light of the Specification. *See id.* at 4–16.

Third, Petitioner asserts that Patent Owner “cannot manufacture a construction based on nothing more than cherry-picked extrinsic evidence and unsupported expert testimony.” Pet. Reply 3. Petitioner contends that even Patent Owner’s “carefully-selected dictionary definitions do not support [Patent Owner’s] proposed construction” because “[n]one of the four proposed requirements are expressed or implied by the words ‘detailed’ or ‘complete.’” *Id.* (citing Ex. 1019 ¶¶ 10–11). Petitioner further notes that Patent Owner “expressly ignores that [Dr. Shenoy’s construction of inventory as an itemized list] is derived from the Merriam-Webster dictionary in related proceedings, which defines ‘inventory’ as ‘an **itemized**

list of current goods or asserts.’” *Id.* at 3–4 (citing Ex. 1025 ¶ 117 (citing Ex. 1023 (The Merriam-Webster Dictionary), 384); Ex. 1019 ¶ 8).

Further, Petitioner asserts that Patent Owner’s “proposed construction fails at almost every canon of claim construction: it is confusing, makes optional information a requirement, duplicates and renders superfluous claim language, and conflicts with the doctrine of claim differentiation.” Pet. Reply 4. Instead, Petitioner contends that “inventory” should be construed in accordance with its ordinary meaning. *Id.* (citations omitted).

*c. PO’s Sur-Reply*

In its Sur-reply, Patent Owner contends that “Petitioner incorrectly focuses the weight of its argument on the linguistic aspects of Patent Owner’s claim construction of the term ‘inventory’ rather than the fundamental principles of how one of ordinary skill in the art would have understood the term based on the specification and claims.” PO Sur-reply 1. Patent Owner asserts that it “never characterized its construction as having . . . four requirements nor argued they were entirely independent of one another.” *Id.* Patent Owner contends that “[e]ach aspect of its construction adds meaning while at the same time possibly overlapping to some extent with other aspects.” *Id.* at 2.

In particular, Patent Owner contends that “nothing precludes some potential overlap between portions of a construction. Here, for example, the list of file(s) and the directory structure of the file(s) may be useful, but not necessarily sufficient, in determining the current state of the storage medium.” PO Sur-reply 3. Patent Owner asserts that its construction “captures the data needed in the inventory according to the specification to achieve” the requirements of the claimed deduplication process as well as

restoring a storage medium. *Id.* at 3–4. Patent Owner contends that its construction is “based on the fundamental principle of giving claims their ordinary and customary meaning that would have been accorded by a person of ordinary skill in the art.” *Id.* (citation omitted). Additionally, Patent Owner contends that “patent specifications often use the word ‘may’ even in reference to requirements.” *Id.* at 4. Patent Owner walks through each of the four aspects of its construction in response to Petitioner’s arguments. *Id.* at 5–10.

*d. Initial and Responsive Papers*

In addition to the information provided by the parties in the papers discussed above, each party filed an Initial Paper and Responsive Paper in response to our request for each party to set forth “its contentions regarding the ordinary and customary meaning of the term ‘inventory’ as that term is used in the challenged claims.” Paper 28, 1. In its Initial Paper, Petitioner contends that “the ordinary and customary meaning of the term ‘inventory,’ as recited in the challenged claims, is ‘an itemized list of electronic data.’” Pet. Initial Paper 1. Petitioner contends that the use of “inventory” in the Specification is consistent with the dictionary definition of “inventory” as “an itemized list of current goods or assets.” *Id.* (quoting Ex. 1025 ¶¶ 117, 180 (citing Ex. 1023, 384); Ex. 1019 ¶ 8 (citing Ex. 1023, 384)). Petitioner also asserts that Patent Owner’s cited dictionary definitions “further confirm this understanding.” *Id.* at 1–2 (citing Exs. 2019–2021).

Additionally, Petitioner reiterates that “[t]he term ‘inventory’ does not define, describe, or limit the contents of the inventory itself; rather, those limitations are provided by each challenged claim, which describe[s] what information the ‘inventory’ must contain.” Pet. Initial Paper 2 (footnote

omitted). Petitioner contends that “[n]othing, in either the extrinsic or intrinsic evidence, demands that the term ‘inventory’ must reflect a certain amount or type of data, or take on any particular form,” although the claims “do provide additional details.” *Id.* (citing Pet. Reply 3–4; Ex. 1019 ¶¶ 8–13).

In its Initial Paper, Patent Owner contends that its construction “is consistent with the ordinary and customary meaning of the term ‘inventory.’” PO Initial Paper 1. Patent Owner offers six exemplary dictionary definitions of “inventory” that it contends reflect that “inventory” is “more than just a list.” *Id.* at 1–2 (citations omitted). In particular, each of Patent Owner’s dictionary definitions includes a version of the phrase “a detailed [or complete] list.” *Id.* at 1 (emphasis omitted); *see id.* at 2 (noting that “inventory” would have been understood as “a ‘complete,’ ‘detailed,’ and ‘often descriptive’ list which includes other data about the items and/or information identified in the inventory”). Patent Owner asserts that “[t]he exact nature of the other data kept in a particular inventory would depend on the nature of the items contained in the inventory, as these definitions reflect.” *Id.* at 2.

Additionally, Patent Owner explains that the “elements of the inventories in the claims are recited to explain which data or storage medium is being described by the inventory and not to add limitations to what is in the inventory, as Petitioner suggests.” PO Initial Paper 3. For example, Patent Owner points to claim 10 of the ’545 patent, which recites “generating a first inventory for the first set of files, wherein *the first inventory reflects a current state of the first remote storage medium*, and wherein the first inventory includes the cryptographic signature values

generated for each file in the first set of files.” PO Initial Paper 3–4. Patent Owner contends that the first wherein clause “informs the reader that the current state of the in the first inventory is for the first remote storage medium and not a different storage medium” and that the second wherein clause “establishes [that the cryptographic signature values] are generated for the first set of files as opposed to a different set of files.” *Id.* at 4.

In its Responsive Paper, Petitioner contends that Patent Owner “never actually explains what the ordinary and customary meaning of ‘inventory’ is” and instead relies on “‘exemplary’ dictionary definitions for the vague proposition that ‘the ordinary and customary meaning of “inventory” is more than just a list.’” Pet. Resp. Paper 1. Petitioner asserts, however, that none of the definitions support Patent Owner’s argument because none define how much “more” is needed for a list to be considered an “inventory” nor do any set forth the numerous requirements included in Patent Owner’s proposed construction. *Id.* Petitioner explains that “[c]onsistent with these definitions, an ‘inventory’ is a specific type of *list* that accounts for *all items* being inventoried, whether that be files selected for backup, files present on a backup server, or—in a different context—items in a grocery store.” *Id.* Petitioner asserts that “[t]he very purpose of an inventory is to account for each subject item, which is why Patent Owner’s cited dictionaries define ‘inventory’ as an ‘itemized,’ ‘detailed,’ or ‘complete’ list of items.” *Id.* Petitioner contends, however, that “those dictionaries contemplate what [P]atent Owner ignores: the form in which those items are represented may vary, and so the ordinary and customary meaning of the term ‘inventory’ in no way requires use of any particular attributes to represent the subject items.” *Id.* at 1–2 (citing Pet. Initial Paper 2–3).

Additionally, Petitioner contends that Patent Owner's citations to the Specification "do not suggest a different meaning." Pet. Resp. Paper 2. "Rather, consistent with the ordinary and customary meaning provided by Petitioner, the ['146] patent allows for various different types of information to be present within an inventory." *Id.* (citations omitted). Particularly, Petitioner contends that the Specification explains "that an inventory *may* include certain information associated with the inventoried items," but that does not "mandate that such information is inherent within the meaning of 'inventory.'" *Id.* (citations omitted).

In its Responsive Paper, Patent Owner contends that Petitioner's construction of inventory "reads all meaning out of th[e] word." PO Resp. Paper 1. Patent Owner asserts that the claims and Specification contradict any argument that an "inventory" is the same as a list. *Id.* Additionally, Patent Owner asserts that "Petitioner's argument is blatantly inconsistent with the ordinary and customary meaning of the term 'inventory' as set forth in [the] various dictionaries as including a 'detailed,' 'complete,' and 'often descriptive' set of data." *Id.* at 2 (citing Exs. 2019–2021). And, Patent Owner contends that its construction is "supported by both the extrinsic evidence and the patent[ itself] as including specific types of additional and detailed information about the items." *Id.*

### 3. Discussion

Above, we set forth the standard that applies in this proceeding, and we reiterate that "[t]he words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history."

*Thorner*, 669 F.3d at 1365 (citing *Phillips*, 415 F.3d at 1313). "There are

only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Id.* (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1580 (Fed. Cir. 1996)).

In this case, neither party contends that either exception to the general rule of construing claim terms in accordance with their ordinary and customary meaning applies. We agree with the parties that the term “inventory” should be given its plain and ordinary meaning because the patentee did not act as his own lexicographer by defining the term “inventory” and did not disavow the full scope of the term “inventory.” The parties disagree, however, as to the ordinary and customary meaning of “inventory.” Before turning to the parties’ particular disagreements, we recognize where the parties’ proposed constructions agree. In particular, the parties agree, as do we, that the ordinary and customary meaning of “inventory” includes the terms “electronic data” and “list.” Below, we address the disputed portions of the parties’ proposed constructions, starting with Patent Owner’s.

*a. Patent Owner’s Proposed Construction*

As described above, Patent Owner’s proposed construction reflects four aspects of an “inventory.” Specifically it is “electronic data” that (1) “reflects the current state of a storage medium,” (2) “includes a list of files on the storage medium,” (3) includes “at least one descriptor identifying the file(s),” and (4) includes “the directory structure of the file(s).” PO Initial Paper 1; *see* PO Resp. 22 (citing Ex. 1001, 8:30–62, 15:49–60; Ex. 2015 ¶ 70). We examine each aspect of Patent Owner’s construction.

*i. Reflects the Current State of a Storage Medium*

The first aspect of Patent Owner’s proposed construction is that an “inventory” “reflects the current state of a storage medium.” PO Resp. 22; PO Initial Paper 1. For support, Patent Owner relies on the Specification of the ’146 patent and, particularly, the descriptions of an inventory in column 8. PO Resp. 22 (citing *inter alia* Ex. 1001, 8:30–62). This portion of the Specification describes a “file inventory” that scanning module 232 creates when it scans a particular drive or storage medium. In describing Figure 2, the Specification states, “[b]y scanning a particular drive or similar storage medium, the scanning module 232 is capable of creating a *file inventory* for the selected drive. The *file inventory* reflects the current state of the drive and may include a description of the hierarchical structure of the drive.” Ex. 1001, 8:28–30 (emphasis added).

We disagree that the Specification supports Patent Owner’s arguments. First, this disclosure expressly refers to a “file inventory,” whereas the term proposed for construction is “inventory.” Second, this disclosure describes a particular trait of the “file inventory” produced by scanning module 232 when it scans a particular drive or storage medium. Third, this disclosure does not indicate that the meaning of “inventory” should be limited to the description of the “file inventory” created by scanning module 232 in the described instance. And, we do not agree that it is appropriate to read a description of the specific “file inventory” produced by scanning module 232 into the claim term “inventory.” *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 (Fed. Cir. 2004) (“improper to read a limitation from the specification into the claims”).

Additionally, neither the claim language nor the dictionary definitions cited by Patent Owner support construing the term “inventory” itself as “reflecting the current state of a storage medium.” With respect to the term “inventory,” claim 1 recites

receiving, at a backup server, a first inventory of electronic data stored on a first remote storage medium associated with a first client device, wherein the electronic data comprises actual file data to be backed-up from the first remote storage medium, wherein the first inventory comprises at least one descriptor and wherein the at least one descriptor comprises a cryptographic signature computed based on the actual file data, the cryptographic signature uniquely identifying the electronic data to be backed-up . . . .

Ex. 1001, 19:11–20. The claim language reflects that the “first inventory” comprises at least one descriptor, which comprises a cryptographic signature.

Considering extrinsic evidence,<sup>9</sup> both parties rely on dictionary definitions.<sup>10</sup> A common feature of the definitions proffered by Patent Owner is the use of the adjective “detailed” and the word “list.” See PO Initial Paper 1 (“a complete list,” “a detailed list,” “detailed . . . list,” “detailed . . . list,” “detailed . . . list,” “detailed list”) (citing *inter alia* Exs. 2019–2021). Patent Owner states that these dictionary definitions show that “the ordinary and customary meaning of ‘inventory’ is more than just a list.” *Id.* at 2. Petitioner does not disagree. In fact, Petitioner notes the

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<sup>9</sup> Neither party argues that the prosecution history of the ’146 patent informs as to the meaning of the “inventory.”

<sup>10</sup> The parties also rely on competing expert testimony that is very similar to the parties’ arguments. See, e.g., Ex. 2015 ¶¶ 70–81 (Dr. Weissman’s declaration testimony); Ex. 1019 ¶¶ 6–30 (Dr. Shenoy’s reply declaration testimony).

same commonality across the dictionary definitions the parties relied on—they each include a “list” and a modifier describing the list as “itemized,” “detailed,” or “complete.” Pet. Resp. Paper 1. Petitioner, however, also asserts that none of the dictionary definitions support Patent Owner’s attempt to require that the term “inventory” *must* include all of the information that the Specification indicates *may* be included in an inventory. *Id.* at 2.

The dictionary definitions shed light on the plain and ordinary meaning of “inventory,” but, in particular, none of the definitions support Patent Owner’s proposed construction. Despite including adjectives such as “itemized,” “detailed,” and “complete,” none of those modifiers even remotely suggests, supports, or is consistent with Patent Owner’s proposed construction of “inventory” as “electronic data that reflects the current state of a storage medium.”<sup>11</sup>

Accordingly, we find that the complete record does not support construing “inventory”<sup>12</sup> to require “electronic data that reflects the current state of a storage medium.”

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<sup>11</sup> Nor do any of the definitions reflect that the ordinary and customary meaning of “inventory” includes the other three aspects of Patent Owner’s proposed construction of “inventory”—electronic data that (2) “includes a list of files on the storage medium,” (3) includes “at least one descriptor identifying the file(s),” and (4) includes “the directory structure of the file(s).”

<sup>12</sup> Also important to our understanding of “inventory” is Patent Owner’s agreement that “the claimed inventory may not account for every file on the system. Instead, the claimed inventory accounts for the data, which may only be a chunk of data, selected by a user to be backed up or restored.” PO Sur-reply 12 (agreeing with Petitioner). In other words, even though the extrinsic definitions modify the term “list” by requiring the list to be “itemized,” “detailed,” and/or “complete,” it is undisputed that the claimed

*ii. Includes a List of Files on the Storage Medium*

As mentioned, both parties propose construing inventory to include or constitute a list. PO Resp. 22; Pet. Reply 3–4; Pet. Initial Paper 1. The parties dispute, however, what the list should constitute. Patent Owner argues that “inventory” requires a list of files on the storage medium (PO Resp. 22), whereas Petitioner argues that “inventory” does not require the inclusion of a list of files on the storage medium. Pet. Initial Paper 1.

Patent Owner’s Response does not specifically identify its support for construing inventory to require a list of files on the storage medium. PO Resp. 21–28. Patent Owner’s Sur-reply, however, points to the ’146 patent’s description of the restore process. PO Sur-reply 7–9 (citing Ex. 1001, 15:26–48, 16:56–58). Nothing in that discussion in the Specification, however, requires “inventory” to include a list of files on the storage medium and Patent Owner’s discussion does not identify any such requirement. Rather, we find that this portion of the Specification supports Petitioner’s argument that inclusion of a list of files is permissible, but not required. First, the Specification explicitly states that “[w]ith reference now to FIG. 7, a restore/recover routine will be described *in accordance with at least some embodiments of the present invention.*” Ex. 1001, 14:48–50 (emphasis added). Thus, on its face, the Specification describes the restore/recover routine as applicable to *some* embodiments, meaning *not every* embodiment. Second, in the portion Patent Owner relies on, the Specification further describes as “an additional embodiment of the present invention” the ability to generate an inventory of protected media. *See id.* at

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“inventory” can account for *less than all* files on a remote storage medium or drive.

16:56–58. And the Specification expressly states that “[t]his inventory is a list of all files with corresponding descriptors.” *Id.* at 16:57–58. This description reflects that when the patentee intended to refer to a list of files as part of an inventory, the patentee knew how to do so. The patentee’s failure to do so for all embodiments or to specifically direct the discussion to the term “inventory” generally, supports Petitioner’s position that an “inventory” *may* include a list of files on the storage medium, but is not required to do so.<sup>13</sup>

Additionally, even the heading of this section of Patent Owner’s Sur-reply supports Petitioner’s argument that “inventory” may include a list of files on the storage medium, but is not required to do so. In particular, Patent Owner’s heading states “[a]n ‘inventory’ *may* include a ‘list of files on the storage medium.’” PO Sur-reply 7 (emphasis added). We do not disagree that it *may*. We do, however, disagree that “inventory” *must* include a list of files on the storage medium, as explained above.

Further, neither the claim language nor the parties’ dictionary definitions support limiting “inventory” to include a list of files on the storage medium. Exs. 1023, 2019–2021. In particular, Patent Owner fails to point to any aspect of the claims as supporting its construction. And, none

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<sup>13</sup> We also find that the Specification suggests that a list of files is not a required aspect of “inventory.” In particular, in describing the embodiment of Figure 5, the ’146 patent teaches that “[i]ncluded in a user’s inventory may be list of descriptors 508. The list of descriptors 508 for each user are a short-hand representation of the actual files, or portions of files, that have been recently backed up for the user’s communication device 108.” Ex. 1001, 11:41–45. This disclosure suggests that an “inventory” need not require a list of the files themselves, but rather that a list of descriptors could suffice.

of the dictionary definitions set forth such a requirement. *Id.* Thus, we do not construe “inventory” to require a “list of files on the storage medium.”

*iii. Includes at Least One Descriptor Identifying the File(s)*

The third aspect of Patent Owner’s proposed construction of “inventory” is the inclusion of at least one descriptor identifying the file(s). Patent Owner’s Response does not specifically identify why “inventory” should be construed to require this language. Petitioner’s Reply correctly identifies that claim 1 recites “wherein the first inventory comprises at least one descriptor.” Pet. Reply 13 (quoting Ex. 1001, 19:15–6). In its Sur-reply, responding to Petitioner’s argument that the claims expressly recite this aspect of Patent Owner’s proposed construction of “inventory,” Patent Owner states “Petitioner does not dispute that an inventory includes at least one descriptor, and thus whether it is explicitly in the construction or not, the Board must consider it as a limitation.” PO Sur-reply 9. Patent Owner further states that claim 1 “needs to refer to the at least one descriptor, *e.g.*, cryptographic signature, in each inventory as an antecedent basis to refer to it again later in the claims.” *Id.*

Patent Owner’s arguments reflect that Patent Owner (1) does not provide any support for why the term “inventory” itself requires “at least one descriptor identifying the file(s)” and (2) expressly equates a cryptographic signature with a descriptor.<sup>14</sup> And, we do not discern any support in the claims, Specification, or dictionary definitions of “inventory” that the term

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<sup>14</sup> The latter portion of Patent Owner’s argument is noteworthy in that Field discloses cryptographic signatures as discussed further *infra*.

“inventory” must require at least one descriptor identifying the file(s) as Patent Owner proposes.<sup>15</sup>

Thus, on the complete record before us, the evidence (claims, Specification, and extrinsic) does not support Patent Owner’s attempt to require “inventory” to mean that it “includes at least one descriptor identifying the file(s).” Accordingly, we do not construe “inventory” to require such.

*iv. Includes the Directory Structure of the File(s)*

The fourth aspect of Patent Owner’s proposed construction of “inventory” is that an “inventory” must include the directory structure of the file(s). PO Resp. 22. Patent Owner points to the language of claim 1 and identifies two portions of the Specification as allegedly supporting its proposed construction. We address each.

Patent Owner argues that the following language from claim 1—“comparing . . . the at least one descriptor of the first inventory to a ***list of descriptors associated with*** a second inventory”—makes it clear that “a ‘list of descriptors’ is part of, but not identical to the inventory.” PO Resp. 26 (citing Ex. 2015 ¶ 79). And, Patent Owner asserts that the phrase “‘associated with’ indicates that there is more than just a list of descriptors for an inventory of electronic data, *e.g.*, directory structure of the electronic data.” *Id.* at 27 (citing Ex. 2015 ¶ 80).

We disagree that the language of claim 1, quoted by Patent Owner above, supports its proposed construction of “inventory.” In particular,

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<sup>15</sup> We address the express language of claim 1 in our discussion of the application of the prior art to the claims. *See infra* § III.B.3.a.iii. (limitation 1A.2).

Patent Owner fails to identify any portion of the claim language that *requires* the inclusion of “the directory structure of the file(s)” in the meaning of “inventory.” Even accepting Patent Owner’s arguments that a list of descriptors is not identical to an “inventory” and that “associated with” indicates that there is more than just a list of descriptors for an inventory, neither of those suppositions leads to the conclusion that the meaning of “inventory” requires the inclusion of the directory structure of the file(s) as opposed to something else.

With respect to the Specification, Patent Owner points to the discussion in column 8, describing Figure 2, as well as the Specification’s discussion of Figure 7 and the restore/recover routine described therein. With respect to column 8, Patent Owner relies on the disclosure regarding scanning module 232, discussed above: “[b]y scanning a particular drive or similar storage medium, the scanning module 232 is capable of creating a file inventory for the selected drive. The file inventory reflects the current state of the drive and may include a description of the hierarchical structure of the drive.” Ex. 1001, 8:28–33 (emphasis added); see PO Resp. 22 (citing Ex. 1001, 8:30–33, 13:36–40, 15:49–60; Ex. 2015 ¶ 71).

This portion of the Specification does not support Patent Owner’s argument. As quoted above, the same statement from the Specification that says the file inventory produced by scanning module 212 *reflects* the current state of the drive also says that the file inventory *may* include a description of the hierarchical structure, not that it *must* be included. Thus, we reject Patent Owner’s attempt to require a description of the hierarchical

structure/directory structure<sup>16</sup> of the drive/files when the Specification explicitly states that the file inventory *may* include such a description. *See* Ex. 1001, 8:30–33. In other words, that the file inventory produced by scanning module 202 reflects the current state of the drive does not mean that a directory structure or hierarchical structure is a required part of that file inventory, especially where the Specification uses the permissive term “may.”

Patent Owner argues that the term “may,” as used in the Specification of the ’146 patent, is not permissive. PO Sur-reply 4. Patent Owner contends that “patent specifications often use the word ‘may’ even in reference to requirements.” *Id.* Patent Owner, however, cites no support for this contention. Patent Owner argues, however, that “[e]verything is described in this patent that’s may this, may that. It’s all permissive language.” Tr. 76:18–20. Patent Owner asserts that if we construe “may” as optional (permissive) as opposed to required, then nothing is left of the patent. *See id.* at 76:20–77:2 (“Unfortunately, you can’t take these sentences in isolation and say, well, these are saying permissive, because then nothing is happening in this patent. Practically everything is described in terms of it may be this or it may be that. So there’s nothing definitive about anything here.”). We disagree.

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<sup>16</sup> Dr. Weissman’s deposition testimony acknowledged some relationship between Patent Owner’s use of “directory structure of the file(s)” and hierarchical structure of the drive. *See, e.g.*, Ex. 1020, 75:11–15 (acknowledging agreement), 75:16–78:22 (further discussing his understanding of directory structure and hierarchical structure); *see also* Ex. 1024 ¶ 29 (Dr. Shenoy’s reply declaration testimony discussing Dr. Weissman’s declaration).

We see nothing in this record that would cause us to interpret the term “may” as mandatory.<sup>17</sup> Thus, we interpret the term “may” in accordance with its ordinary, permissive meaning. *See Network LLC v. Centraal Corp.*, 242 F.3d 1347, 1358 (Fed. Cir. 2001) (“The specification makes quite clear that those added limitations are merely *permissive*, that is to say, they *may or may not* be associated with the client computer that is clearly defined in the specification.” (emphasis added)); *In re Johnston*, 435 F.3d 1381, 1384 (Fed. Cir. 2006) (“[T]hese limitations are stated in *the permissive form ‘may.’* As a matter of linguistic precision, *optional elements* do not narrow the claim because they can always be omitted.” (emphasis added)). And, we do not agree that construing may in accordance with its ordinary and customary meaning deprives the ’146 patent of meaning. That an “inventory” may include the directory structure of the file(s) means exactly that, it may. Nothing in our construction *precludes* an “inventory” from including the directory structure of the file(s). In other words, there may be claims that recite the broader term “inventory” and there may be claims that recite a narrower “inventory” if, for example, other language in the claim expressly

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<sup>17</sup> The Specification’s use of “may” in several other instances also indicates the permissive (optional) inclusion of items in an inventory. *See* Ex. 1001, 8:47–54 (describing the use of a descriptor algorithm to “create the descriptor that uniquely . . . identifies the file or a portion of the file” and stating that “[t]he results of the application of the descriptor algorithm (e.g., the generated hash corresponding to each file or portion of a file) *may also be added to the inventory to help describe the current state of the drive*” (emphasis added), 11:28–42 (noting, in the context of Figure 5, that “backup server 116 may be designed to maintain inventories 504 for each user account” and that “[i]ncluded in a user’s inventory may be a list of descriptors 508” (emphasis added))).

limits the “inventory” to include one or more of the aspects described in the Specification as optional.<sup>18</sup>

As a second disclosure allegedly supporting its proposed construction, Patent Owner points to the Specification’s discussion of Figure 7 and the restore/recover routine described therein. In particular, Patent Owner points to the statement that “[o]nce the descriptors have been marked for restoration, the restore application 240 continues by determining if any directories in the inventory are not present in the target media (step 732). If there are any directories in the inventory and not in the media, the restore application 240 creates those directories in the target media (step 736).” *See* PO Resp. 22–24 (citing *inter alia* Ex. 1001, 15:49–54) (asserting that Figure 7 and this description from the Specification supports Patent Owner’s construction); Tr. 79:1–12 (contending that this statement from the Specification is definitive that there are directories in this inventory).

We disagree that this statement in the Specification supports Patent Owner’s argument that (a) directories are required to be in the specific inventory referenced and (b) the term “inventory” should be *construed* as requiring “the directory structure of the file(s).” This specific statement says *if* there are any directories in the inventory and not in the media, then directories are created. Nothing in that statement requires the presence of directories in the inventory. The statement is satisfied whether or not directories are included. If there are no directories in the inventory, then there are no directories in the inventory that are not in the target media.

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<sup>18</sup> For example, as we noted previously and as discussed further herein, claim 1 further limits the “inventory” recited therein. *See, e.g.*, Ex. 1001, 19:15–18 (limitation 1A.2).

Thus, this statement fails to support Patent Owner’s argument that “inventory” should be construed as *requiring* the directory structure of the file(s).

Additionally, the Specification’s description of Figure 7 explicitly states that the restore/recover routine is described “in accordance with *at least some embodiments* of the present invention.” Ex. 1001, 14:48–50 (emphasis added). Thus, even if we were to read the above-description of Figure 7 as requiring directories in this specific inventory (which we do not), this description expressly applies to “at least some embodiments,” meaning not necessarily *all* embodiments.

Further, as we noted above, the parties’ dictionary definitions also do not support Patent Owner’s proposed requirement that an inventory include the directory structure of the file(s). None of those definitions so limit the term “inventory.” Exs. 1023, 2019–2021.

Therefore, we do not construe “inventory” to require inclusion of the directory structure of the file(s).

*b. Petitioner’s Proposed Construction*

As mentioned above, Petitioner proposes construing “inventory” as “an itemized list of electronic data.” Pet. Reply 1–2; Pet. Initial Paper 1. This construction is consistent with the language of claim 1 and also consistent with the Specification of the ’146 patent. *See, e.g.*, Ex. 1001, 8:28–30; 11:28–45; 14:36–41. And, Petitioner’s proposed construction is supported by the dictionary definition of inventory as “an itemized list of current goods or assets.” Ex. 1023, 4.

Patent Owner objects to Petitioner’s proposed construction on the grounds that the Specification of the ’146 patent teaches that the term

“inventory” should have all of the requirements set forth in Patent Owner’s proposed construction. *See, e.g.*, PO Initial Paper 1. As set forth above, we disagree with that argument by Patent Owner.

Patent Owner also relies on dictionary definitions to oppose Petitioner’s proposed construction. *See* PO Initial Paper 1. As discussed above, a common feature of the definitions Patent Owner proffers is the use of the adjective “detailed” and the word “list.” *See id.* (“a complete list,” “a detailed list,” “detailed . . . list,” “detailed . . . list,” “detailed . . . list,” “detailed list”) (citing *inter alia* Exs. 2019–2021). Patent Owner states that these dictionary definitions show that “the ordinary and customary meaning of ‘inventory’ is more than just a list.” *Id.* at 2. Petitioner does not disagree. In fact, Petitioner notes the same commonality across the dictionary definitions—they each include a “list” and a modifier describing the list as “itemized,” “detailed,” or “complete.” Pet. Resp. Paper 1. And Petitioner’s proposed construction requires an inventory to be more than a list—it must be an itemized list. Patent Owner has not argued that there is any difference of significance for this case between construing an inventory as an itemized list versus a detailed list (aside from using the term “detailed” as a vehicle to argue all four aspects of its proposed construction). And we see none.<sup>19</sup>

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<sup>19</sup> As noted previously, important to our understanding of “inventory” is the parties’ agreement that “the claimed inventory may not account for every file on the system. Instead, the claimed inventory accounts for the data, which may only be a chunk of data, selected by a user to be backed up or restored.” PO Sur-reply 12 (agreeing with Petitioner). In other words, even though the extrinsic definitions modify the term “list” by requiring the list to be “itemized,” “detailed,” and/or “complete,” it is undisputed that the inventory can account for *less than all* files on a remote storage medium or drive.

*c. Construction*

Considering the intrinsic and extrinsic evidence of record, we determine that “inventory” would have been understood by one of ordinary skill in the art in accordance with its plain and ordinary meaning, which, in this context, is an “itemized list of electronic data.”<sup>20</sup>

III. ANALYSIS

*A. Legal Standards – Obviousness*

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

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<sup>20</sup> Construing “inventory” as a “detailed list of electronic data” or a “complete list of electronic data” would not change the analysis that follows.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”)).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). “[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

*B. Obviousness over Field*

Petitioner asserts that Field would have rendered the subject matter of claims 1–7 obvious to one of ordinary skill in the art at the time of the invention. Pet. 12–42.

*1. Level of Ordinary Skill in the Art*

For the reasons discussed above, we find that one of ordinary skill in the art at the time of the invention would have a Bachelor of Science degree in Computer Science, Computer Engineering, Electrical Engineering, Software Engineering, or an equivalent field, as well as at least three to five years of academic or industry experience in the fields of data storage, data backup, data restoration, data replication and deduplication, and/or data synchronization. *See supra* § I.G.

## 2. *Scope and Content of the Prior Art*

### a. *Field*

Field is directed to “a system, methods, and a computer-readable medium for efficiently performing a backup of data in a networking environment.” Ex. 1004 ¶ 7.

Figure 1 of Field is reproduced below:

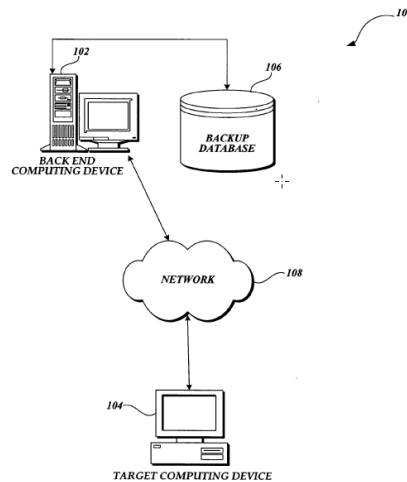


*Fig.1.*

Figure 1 shows networking environment 100 that includes back end computing device 102 and target computing device 104. Ex. 1004 ¶¶ 13, 20. Back end computing device 102 aggregates data received from multiple sources (e.g., client computing devices) at a single location (e.g., backup database 106), to prevent the unnecessary transmission of data. *Id.* ¶ 22.

Figure 2 of Field is reproduced below:

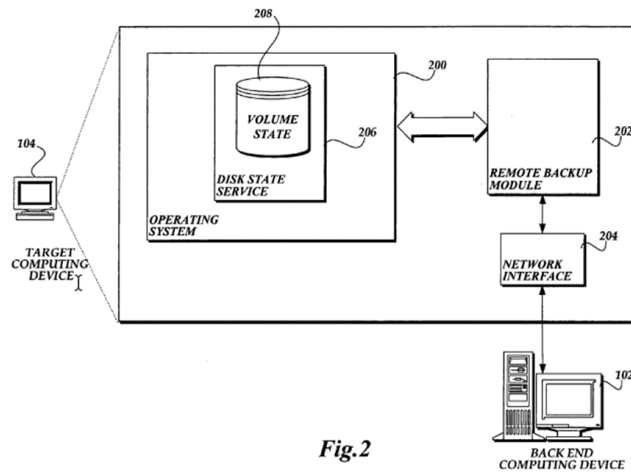


Fig.2

Figure 2 is a block diagram illustrating components of target computing device 104, including remote backup module 202. Ex. 1004 ¶¶ 14, 25.

Figure 3 of Field is reproduced below:

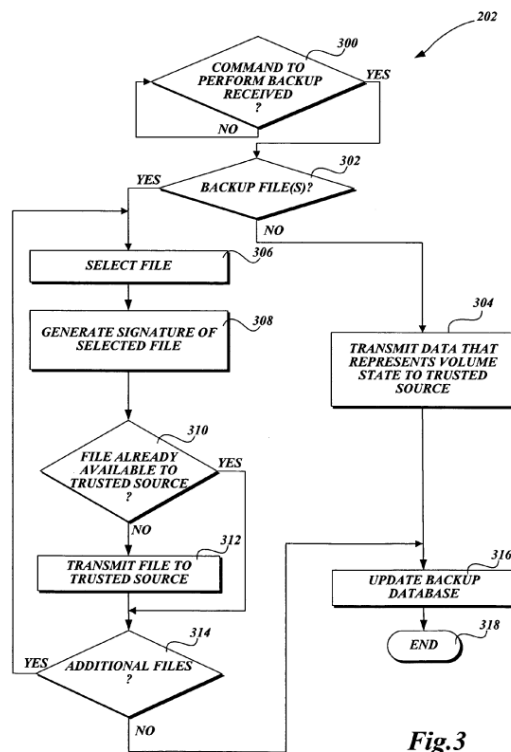


Fig.3

Figure 3 shows a flow diagram for remote backup module 202 for performing a backup of data module 202 and contains blocks 300–318.

Ex. 1004 ¶¶ 15, 31. In block 300, remote backup module 202 waits to receive a command to perform a backup. *Id.* ¶ 32. In block 302, module 202 determines whether the command received requires a backup of one or more files. *Id.* ¶ 33. If backup is required, then the module proceeds to block 306, where it selects a file to be backed up. *Id.* ¶¶ 33, 35.

In block 308, remote backup module 202 generates a signature of the selected file. Ex. 1004 ¶ 36. Hashing algorithm “SHA-1” can be used to generate this signature. *Id.* Alternatively, “other type[s] of algorithms or functions that are capable of generating a signature from file data may be used to generate the signature.” *Id.* In block 310, remote backup module 202 determines if the file is already available to a trusted source by “caus[ing] the signature of the selected file to be transmitted to the trusted source and compared to signatures of files previously submitted to the trusted source.” *Id.* ¶ 37. If a matching signature for the selected file is identified, remote backup module 202 proceeds to block 314. *Id.* If a matching signature for the selected file is not identified, remote backup module 202 proceeds to block 312. *Id.*

At block 312, remote backup module 202 transmits the selected file to a remote computing device associated with the trusted source (e.g., back end computing device 102). Ex. 1004 ¶ 38. Field explains:

If block 312 is reached, the selected file was not previously transmitted to the trusted source and, therefore, is not available to the trusted source. Stated differently, a signature of the selected file could not be identified in the backup database 206 at block 310. Thus, to satisfy the backup command received at block 300, the selected file is transmitted to the remote computing device associated with the trusted source, at block 312. . . . Significantly, a file that was previously made available to the trusted source is not transmitted by the remote

backup module 202. Instead, only a signature of the file, which is a fraction of the size of a complete file, is transmitted to the trusted source. As a result, the remote backup module 202 is able to backup data using less network bandwidth and other resources than is found in the prior art.

*Id.* At block 314, remote backup module 202 determines if any files that were the object of the backup command received at block 300 have not previously been selected and, if so, remote backup module 202 returns back to block 306 and blocks 306 through 314 repeat until all of the files that were the object of the backup command have been selected. *Id.* ¶ 39.

At block 316, “remote backup module 202 performs an update to the database associated with the trusted source.” Ex. 1004 ¶ 40. Field explains that “more than one user of the backup service may need the file restored back onto a computing device. Thus, the backup database 104 maintains an entry for each user of the backup service.” *Id.* An “entry in the backup database 104 associated with a specific user contains ‘pointers’ to operating system, application program files, and/or user level data that is shared with other users of the backup service.” *Id.* Additionally, an entry will store file metadata “identify[ing] the location (e.g., a file path), name, and permissions of files that may be restored by the backup service.” *Id.* At block 316, the database is updated with this data required to restore files and/or a volume state, after which remote backup module 202 proceeds to block 318 and terminates. *Id.*

3. *Differences Between the Prior Art and the Claims;  
Motivation to Modify*

a. *Independent Claim 1*

i. *1-Pre*

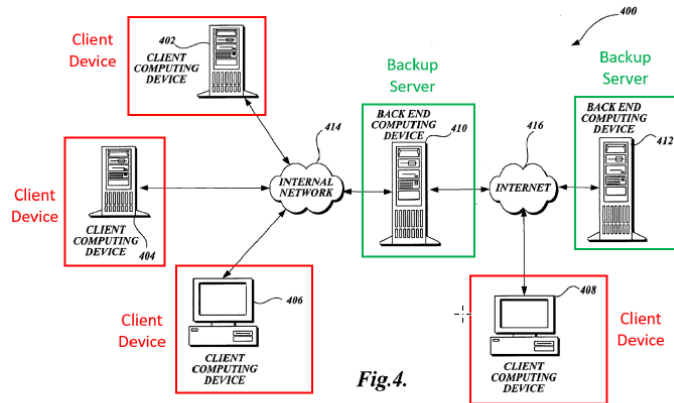
1-pre, which includes the preamble of claim 1, recites “[a] method of synchronizing electronic data stored on a first client device with at least a second client device, the method comprising.” Ex. 1001, 19:8–10. For the reasons explained *supra*, we determined that the preamble of claim 1 is not limiting. *See* § II.A. Petitioner contends “[t]o the extent that the preamble language is deemed limiting, Field discloses the preamble.” Pet. 18 (citing Ex. 1002 ¶¶ 71–77); *see id.* at 18–21 (explaining, in detail, how Field teaches 1-pre).

As we have determined that the preamble of claim 1 is not limiting, we need not address Petitioner’s arguments showing how the preamble is taught by Field. For completeness, however, we find that, for the reasons explained by Petitioner, Field teaches 1-pre.

ii. *Limitation 1A.1*

Limitation 1A.1 recites “receiving, at a backup server, a first inventory of electronic data stored on a first remote storage medium associated with a first client device, wherein the electronic data comprises actual file data to be backed-up from the first remote storage medium.” Ex. 1001, 19:11–15. Petitioner contends “Field discloses a ‘backup server’ in the form of a ‘back end computing device’ that ‘may be used as a backup store for client-based computing devices.’” Pet. 21 (citing Ex. 1004 ¶ 43). Petitioner asserts “Field also discloses ‘client devices’ in the form of ‘client computing devices 402, 404, 406, 408,’ which are also referred to by Field as ‘target computing devices.’” *Id.* (citing Ex. 1004 ¶¶ 20, 42–43).

Petitioner relies on Field's Figure 4, reproduced below with Petitioner's annotations:



EX1004, FIG. 4 (annotated).

Field's Figure 4 is reproduced above, including Petitioner's annotations in red (identifying client devices as client computing devices 402, 404, 406, and 408) and green (identifying backup servers as back end computing devices 410 and 412). Pet. 22. Petitioner contends Field "explains that its 'client computing devices' may be 'any one of a variety of devices including . . . personal computing devices, server-based computing devices, . . . cellular telephones, [or] other electronic devices having some type of memory.'" *Id.* (quoting Ex. 1004 ¶ 25). Petitioner asserts the memory "is the claimed 'first remote storage medium'; it is 'remote' because it is on a separate device from the 'back end computing device.'" *Id.* (citing Ex. 1002 ¶¶ 79–82).

Petitioner asserts Field creates an inventory as part of its backup process by generating a signature of a selected file designated for backup. Pet. 22–23 (citing Ex. 1004 ¶¶ 33, 34–36, Fig. 3 (blocks 306 and 308)). Petitioner contends Field then transmits the signature to the trusted source (i.e., back end computing device 102) at block 310 of Figure 3. *Id.* at 23–24 (citing Ex. 1004 ¶ 37). Petitioner argues that "because claim 1 only requires

that the ‘first inventory comprise[] at least one descriptor,’” transmission of this signature discloses the claimed “first inventory.” *Id.* at 24.

Additionally, Petitioner presents two positions as to how Field teaches or suggests receiving the first inventory. First, Petitioner contends that, if limitation 1A.1 requires that the first inventory be received all at once, Field teaches this limitation because the “electronic data” recited in limitation 1A.1 does not require more than data pertaining to one file. Pet. 24. Thus, by receiving, at a back end computing device, one signature of a file stored on a first remote storage medium associated with a first client device, Petitioner asserts Field satisfies limitation 1A.1.<sup>21</sup> *Id.*

Second, Petitioner asserts that, if limitation 1A.1 requires receipt of a first inventory consisting of more than one signature, one of ordinary skill in the art “would have found it obvious to transmit the generated signatures for the selected files at the same time (i.e., ‘a first inventory of electronic data stored on a first storage medium’) to the back end computing device to reduce network bandwidth (*e.g.*, overhead).” Pet. 25 (citing Ex. 1002 ¶¶ 83–86). Petitioner contends “[t]his is consistent with Field’s goal of ‘reduc[ing] . . . network bandwidth’ because it would even further reduce the amount of data being sent during Field’s backup process.” *Id.* (citing Ex. 1002 ¶ 85; Ex. 1004 ¶ 23). Petitioner explains:

In particular, by sending all of the signatures in one network message instead of multiple network messages, one can reduce the amount of packet header overhead that is used. EX1002, ¶85. For example, if each of the signatures were sent separately, they would each require their own individual packet headers. *Id.*, ¶85. But if they are all sent in a single message,

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<sup>21</sup> Petitioner also explains that Field performs a backup of one or more files. Pet. 24 (citing Ex. 1004 ¶¶ 29, 33).

they only require a single packet header instead of multiple packet headers, thereby reducing the total bandwidth used. Indeed, such methods for reducing network bandwidth were well known by the earliest priority date of the '146 patent. *Id.*, ¶85; EX1008, Anderson, ¶97.

Pet. 25–26.

We find Petitioner’s arguments and evidence persuasive for the reasons explained by Petitioner.

In its Response, Patent Owner asserts two arguments directed to the recited “inventory” and limitation 1A.1. We address each.

First, Patent Owner contends that Field does not teach the recited “inventory.” PO Resp. 34–40. Relying on its proposed construction of “inventory,” Patent Owner asserts that Field does not teach an “inventory” because “[i]n Field, only a file signature, not an inventory, is transmitted to the backup server.” *Id.* at 37 (citing Ex. 2015 ¶ 97). Patent Owner argues that “[t]he specification and Fig. 3 of Field confirm that the backup process does not need to send any other data of the type included in the '146 Patent’s claimed inventories since for individual file backups there is no need to send the current state of the drive or even the filename or directory.” *Id.* at 38 (citing Ex. 2015 ¶ 98). Thus, Patent Owner contends that, “in Field, a user would not have the information needed in the backup server, including the file name and information on the directory structure, to restore an entire storage medium of a client device.” *Id.* (citing Ex. 2015 ¶ 99).

As reflected above, Patent Owner’s argument is based on its proposed construction of “inventory,” which we have not adopted. Additionally, Petitioner’s argument as to Field’s teachings and alternative argument based on the modifications that one of ordinary skill in the art would have been prompted to make are sufficiently supported by the evidence of record. *See*

Pet. 21–26. Accordingly, Patent Owner’s argument does not identify a deficiency with respect to Petitioner’s analysis of limitation 1A.1.

Second, in various instances, Patent Owner asserts that Field “teaches away from using an inventory of electronic data described and claimed in the ’146 Patent.” PO Resp. 34 (citing Ex. 2015 ¶ 90). Patent Owner contends,

As Field clearly discusses only sending one such file signature at a time, and is concerned with optimizing bandwidth usage, it teaches away from creating and sending an inventory which would include multiple file signatures much less any other data as data representing the current state of the drive, filenames, or directories.

*Id.* (citing Ex. 2015 ¶ 91); *see id.* at 40 (Field “teaches away from the inventory of electronic data that is part of the backup and restore process of the ’146 Patent”).

Patent Owner’s argument as to how or why Field teaches away is bit unclear. Nonetheless, we find that Field teaches receiving a first “inventory” for the reasons explained by Petitioner and based on our construction of “inventory” at least because Field receives an itemized list of electronic data in the form of one or more signatures. Thus, since Field teaches an “inventory,” we do not agree with Patent Owner that Field teaches away from an “inventory.” Additionally, “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference . . . would be led in a direction divergent from the path that was taken by the applicant.” *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001) (quoting *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999)); *see In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (holding that, to teach away, the prior art must “criticize, discredit, or otherwise discourage the solution

claimed”). Patent Owner, however, fails to identify, and we do not discern, any indication in Field that criticizes, discredits, or otherwise discourages one of ordinary skill in the art from following Field’s teachings or modifying Field as proposed by Petitioner. Further, to this latter point, we do not discern any specific argument by Patent Owner that one of ordinary skill in the art would not have been motivated to modify Field as Petitioner proposes, aside from Patent Owner’s assertions of teaching away.<sup>22</sup>

Considering the complete record before us, for the reasons explained above we find that Petitioner has established that Field teaches or suggests limitation 1A.1 and that one of ordinary skill in the art would have had a reason with rational underpinning to modify Field as proposed by Petitioner with a reasonable expectation of success.

*iii. Limitation 1A.2*

Limitation 1A.2 recites “wherein the first inventory comprises at least one descriptor and wherein the at least one descriptor comprises a cryptographic signature computed based on the actual file data, the cryptographic signature uniquely identifying the electronic data to be backed-up.” Ex. 1001, 19:15–20. Petitioner, relying upon its argument directed to limitation 1A.1, asserts that Field teaches a first inventory of one or more signatures corresponding to the one or more selected files for backup and that the signatures uniquely identify the data to be backed up and are based on the data being backed up. Pet. 26–27 (citing Ex. 1004 ¶¶ 36–

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<sup>22</sup> To the extent any of Patent Owner’s arguments are interpreted as challenging Petitioner’s reason for the modification proposed, Patent Owner’s arguments do not identify a deficiency in Petitioner’s analysis that would lead us to a different result.

37). Petitioner contends that one of ordinary skill in the art “would have understood Field’s ‘signatures’ are ‘cryptographic signatures’ because Field teaches the use of SHA-1—a well-known cryptographic algorithm that uniquely identifies files—as a means of generating a file signature.” *Id.* at 27 (citing Ex. 1002 ¶¶ 87–89; Ex. 1008 ¶ 42).

Patent Owner does not appear to challenge Petitioner’s analysis with respect to limitation 1A.2, except in that it recites “inventory.” *See generally* PO Resp. We addressed Patent Owner’s arguments with respect to inventory in the context of our consideration of limitation 1A.1 and that same analysis and findings apply here as well. Additionally, we find Petitioner’s arguments and evidence persuasive to show that Field teaches limitation 1A.2 for the reasons explained by Petitioner.

Accordingly, for the reasons explained by Petitioner, we find that Petitioner has established that Field teaches limitation 1A.2.

*iv. Limitation 1B*

Limitation 1B recites:

comparing, at the backup server, the at least one descriptor of the first inventory to a list of descriptors associated with a second inventory of electronic data stored on a backup data storage medium, wherein the second inventory of electronic data comprises shared electronic data from a second remote storage medium associated with the at least a second client device as well a plurality of other storage mediums different from the first and second remote storage mediums, and wherein the at least one descriptor of the first inventory is compared with descriptors in the second inventory that correspond, at least partially, to data stored on the backup data storage medium by storage mediums different from the first remote storage medium.

Ex. 1001, 19:21–34. Petitioner contends:

Field's "back end computing device 102" performs a comparison of a received signature (i.e., descriptor) to other signatures that have already been stored ("wherein the at least one descriptor of the first inventory is compared with descriptors in the second inventory that correspond, at least partially, to data stored on the backup data storage medium by storage mediums different from the first remote storage medium").

Pet. 27–28 (citing Ex. 1004 ¶ 37). Petitioner points to Field's description that a signature generated by the client device is transmitted to the back end computing device where it is compared to signatures of files already available to the trusted source. *Id.* at 28 (citing Ex. 1004 ¶¶ 8, 37).

As discussed previously, Petitioner equates the "signature of the selected file" in Field with the "first inventory" recited in claim 1. Pet. 28. Additionally, Petitioner equates "signatures of files previously submitted to the trusted source" in Field with the "list of descriptors associated with a second inventory" recited in claim 1 "because it teaches files previously backed-up at Field's backup server." *Id.* (citing Ex. 1002 ¶¶ 90–92). "Thus, by describing that the 'signature of the selected file' is transmitted and 'compared' to signatures of files previously submitted to the trusted source," Petitioner contends "Field discloses the claimed 'comparing.'" *Id.*

Further, Petitioner asserts that "[t]he 'signatures of files previously submitted to the trusted source' (i.e., the back end computing device) also correspond to 'a plurality of other storage mediums different from the first and second remote storage medium'" because Field explains: (1) "'one copy of a file' may be stored in its backup database and that 'more than one user of the backup service may need the file restored back onto a computing device'" and (2) "that 'operating system, application program files, and/or user level data [] is shared with other users of the backup service.'" Pet. 28–

29 (citing Ex. 1002 ¶ 93; Ex. 1004 ¶ 40) (emphasis omitted) (alteration added by Petitioner). Petitioner points to Field’s Figure 4, asserting it shows “the multiple client devices and remote storage mediums that would have previously submitted signatures to the back end computing device.” *Id.* at 29. Petitioner asserts that the following teaching from Field “describes the claimed ‘comparing’ of a received signature from a particular client device with signatures previously received from multiple other client computing devices”:

[B]ack end computing device 410 may implement a backup policy for all of the client computing devices 402, 404, and 406 connected to the internal network 418. In this instance, the back end computing device 410 may cause data on the client computing devices 402–406 to be stored on the back end computing device 410.

*Id.* at 30 (quoting Ex. 1004 ¶ 43) (citing Ex. 1002 ¶ 94).

In its Response, Patent Owner challenges Petitioner’s analysis with respect to limitation 1B. *See* PO Resp. 43–44 (asserting that Field does not teach the “compare” step because “Field does not explicitly disclose that the signatures already stored on the trusted source are derived from multiple devices” (citing Ex. 2015 ¶ 111)). During Dr. Weissman’s deposition, however, he specifically withdrew his prior testimony regarding this limitation, stating “[a]nd the second opinion I’m not offering today is whether [a] signature transmitted as part of the backup from a client device or user is compared against the signature supplied by another client device or user.” Ex. 1020 (transcript of Dr. Weissman’s deposition), 20:9–13; *see id.* at 22:5–12 (agreeing that he is not offering an opinion that Field alone or in combination with any other reference teaches comparing signatures from one client device with signatures that were originally provided from another

client device); *see also* Tr. 59:20–60:4 (Petitioner’s counsel noting that Dr. Weissman withdrew his opinion, offered in his declaration, on this limitation). In its Reply, Petitioner responds to Patent Owner’s argument (from the Patent Owner Response), reiterates how Field teaches limitation 1B, and notes that Dr. Weissman has withdrawn his testimony that supported Patent Owner’s argument. Pet. Reply 18–19.<sup>23</sup>

We find that Petitioner sufficiently establishes that Field teaches limitation 1B. In particular, as described above, Petitioner sets forth the teachings of Field showing how limitation 1B is met. Additionally, Patent Owner’s argument, even assuming Patent Owner intends to maintain it, is unsupported in light of Field’s express disclosure as identified by Petitioner in the Petition and Reply.

*v. Limitation 1C*

Limitation 1C recites “determining that a first descriptor from the at least one descriptor of the first inventory does not match a second descriptor from the list of descriptors associated with the second inventory.” Ex. 1001, 19:35–38. Petitioner asserts Field teaches limitation 1C by comparing signatures at block 310 of Figure 3 and provides an example where a matching signature is not identified. Pet. 30 (citing Ex. 1004 ¶ 37; Ex. 1002 ¶¶ 96–98); *see id.* at 31 (citing Ex. 1004 ¶¶ 8, 18, 38).

Patent Owner does not appear to challenge Petitioner’s analysis with respect to limitation 1C, except in that it recites “inventory.” *See generally* PO Resp. We addressed Patent Owner’s arguments with respect to inventory in the context of our consideration of limitation 1A.1 and that

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<sup>23</sup> Although not required, Patent Owner does not raise an argument regarding limitation 1B in its Sur-reply. *See generally* PO Sur-reply.

same analysis and findings apply here as well. Additionally, we find Petitioner’s arguments and evidence persuasive to show that Field teaches limitation 1C for the reasons explained by Petitioner.

Accordingly, for the reasons explained by Petitioner, we find that Petitioner has established that Field teaches limitation 1C.

*vi. Limitation 1D*

Limitation 1D recites “storing, on the backup data storage medium, the electronic data that is uniquely identified by the cryptographic signature.” Ex. 1001, 20:1–3. Petitioner asserts that Field describes a client device transmitting a file to back end computing device 102 when a matching signature is not found and then storing the file at the back end computing device. Pet. 31 (citing Ex. 1004 ¶¶ 8, 18, 38; Ex. 1002 ¶¶ 99–100). Petitioner contends Field also teaches that a signature, which “uniquely identifies the file is generated and included in the backup database 104.” *Id.* (quoting Ex. 1004 ¶ 37 (emphasis omitted)).

Patent Owner’s Response does not raise an argument specifically directed to limitation 1D of claim 1. *See generally* PO Resp.

For the reasons explained by Petitioner, we find that Field teaches limitation 1D.

*vii. Limitation 1E*

Limitation 1E recites “determining that the second remote storage medium does not have the electronic data that is uniquely identified by the cryptographic signature stored therein.” Ex. 1001, 20:4–6. Petitioner contends that limitation 1E “has no restriction on whether the determining occurs at the claimed ‘client device’ or at the ‘backup server.’ Thus, it can occur at either device.” Pet. 32. Petitioner asserts that “Field teaches

‘determining that the second remote storage medium does not have the electronic data’ at its backup server during restoration operations.” *Id.* (citing Ex. 1002 ¶¶ 101–103; Ex. 1004 ¶¶ 1, 2, 4, 9, 18, 24). Petitioner contends Field describes backing up files from a plurality of devices but also teaches storing a single copy of a file shared by two clients. *Id.* Petitioner points to the following from Field: “[O]ne copy of a file that implements the functionality of an operating system or application program is stored in the backup database 104. However, more than one user of the backup service may need the file restored back onto a computing device.” *Id.* (quoting Ex. 1004 ¶ 40) (citing Ex. 1004 ¶¶ 16, 42) (emphasis omitted).

Petitioner asserts Field describes identifying files that need to be restored and determining when a client device does not have data that needs to be restored. Pet. 32 (citing Ex. 1004 ¶ 10). Petitioner points to Field’s example of a lost or damaged file and that backup database 106 “tracks which files are associated with the target computing device 104 and restores copies of those files when needed.” *Id.* at 32–33 (quoting Ex. 1004 ¶ 24) (citing Ex. 1004 ¶¶ 1, 2, 4). Petitioner contends one of ordinary skill in the art “would have understood that ‘lost data’ would indicate the absence of data on the second client device . . . [and, therefore,] Field’s description of recovering and restoring this lost data would thus teach the claimed ‘determining that the second remote storage medium does not have the electronic data.’” *Id.* at 33 (citing Ex. 1002 ¶¶ 101–103) (emphasis omitted).

Patent Owner’s Response does not raise an argument specifically directed to limitation 1E of claim 1. *See generally* PO Resp.

For the reasons explained by Petitioner, we find that Field teaches limitation 1E.

*viii. Limitation 1F*

Limitation 1F recites “determining that the second remote storage medium is permitted to have the electronic data that is uniquely identified by the cryptographic signature.” Ex. 1001, 20:7–9. Petitioner contends limitation 1F “does not include a restriction on where the determining must occur” and therefore “can occur at either the backup server or client.” Pet. 33. Petitioner relies on its discussion of limitation 1E regarding determining when files are lost or damaged and further asserts Field “discloses ‘determining that the second remote storage medium is permitted to have . . . the data’ in the form of a ‘table’ of ‘pointers’ that tracks which client devices can have access to which data.” *Id.* (citing Ex. 1002 ¶¶ 104–107). Petitioner asserts:

Field explains that “the backup database 104 maintains an entry for each user of the backup service” with pointers associating access to stored files. *See* EX1004, ¶40. The pointers “track[] files stored by [the back end computing device] on behalf of a user of the backup service.” *Id.*, ¶10. This allows the backup database “to identify files that need to be restored to the target computing device when a restore command is issued.” *Id.*; *see also id.*, ¶8.

Pet. 33–34 (alterations by Petitioner).

Additionally, Petitioner relies on Dr. Shenoy’s testimony that identifying files in need of restoration is important in the case of shared files because “the only way Field would be able to determine that a particular client is entitled to have a file restored is by consulting the ‘pointers’ in Field’s backup database.” Pet. 34 (citing Ex. 1002 ¶ 106). “In other words, using the table of pointers, the backup database is able to determine whether the target computing device (i.e., client) should receive a file based on whether there is a pointer for that client or not.” *Id.* (citing Ex. 1002 ¶ 106).

Thus, Petitioner contends, that by maintaining a table that tracks the files associated with each client (and each client's associated storage medium) and then later consulting the table to determine whether to restore a file to a particular client, Field teaches limitation 1F. *Id.*

Patent Owner's Response does not raise an argument specifically directed to limitation 1F of claim 1. *See generally* PO Resp.

For the reasons explained by Petitioner, we find that Field teaches limitation 1F.

*ix. Limitation 1G*

Limitation 1G recites “providing the electronic data that is uniquely identified by the cryptographic signature from the backup server to the at least a second client device so that the electronic data that is uniquely identified by the cryptographic signature can be stored on the second remote storage medium.” Ex. 1001, 20:10–15. Petitioner contends that Field's restore operation teaches limitation 1G. Pet. 34 (citing Ex. 1004 ¶¶ 9, 18; Ex. 1002 ¶¶ 108–111). Specifically, Petitioner asserts that Field describes storing one copy of a file for multiple client devices and restoring the file for multiple client devices, during which backup database 106 tracks the files associated with a target computing device and restores copies of the files when needed. *Id.* at 35 (citing Ex. 1004 ¶¶ 1, 2, 4, 24, 40). Petitioner contends that, as part of this process, Field generates a cryptographic signature that uniquely identifies the file that is backed up and stores the signature in backup database 104. *Id.* (citing Ex. 1004 ¶ 37). Petitioner asserts “when that same file is later restored by Field's ‘restore operation,’ that file corresponds to the unique ‘cryptographic signature’ that was generated when the file[] was backed-up.” *Id.*

Additionally, Petitioner contends “a user may issue a command to restore copies of files or a volume of data to a previous state,” which results in the data being transmitted back to the target computing device and restored. Pet. 35 (citing Ex. 1004 ¶¶ 9, 18, 24). Because Field only maintains one copy of a file, Petitioner contends the restoration process allows for the restoration of files to multiple different clients. *Id.* at 35–36 (citing Ex. 1002 ¶ 111; Ex. 1004 ¶ 40). Petitioner asserts:

when a particular client is backing up its files, Field’s backup system will not actually back-up a file that has already stored in its backup database. EX1002, ¶111; EX1004, ¶40. When a restoration occurs for that particular client, for any files that were deemed duplicative, Field will simply restore the version of that file that was backed-up from a different client because it is the same file. EX1002, ¶111; EX1004, ¶40. Thus, Field also discloses that the restored data is provided to a “second” remote storage medium (different from the “first”) in instances where the original file backed-up did not originate from the client it is ultimately restored to. EX1002, ¶111; EX1004, ¶40.

Pet. 36.

Patent Owner’s Response does not raise an argument specifically directed to limitation 1G of claim 1. *See generally* PO Resp.

For the reasons explained by Petitioner, we find that Field teaches limitation 1G.

*b. Dependent Claims 2–5 and 7*

Petitioner contends that Field would have rendered the subject matter of dependent claims 2–5 and 7 of the ’146 patent obvious to one of ordinary skill in the art at the time of the invention. Pet. 36–40, 41–42. Petitioner provides a detailed discussion of claims 2–5 and 7 and identifies how Field satisfies the limitations of those claims. *Id.*

Patent Owner does not raise a separate argument addressing any of claims 2–5 and 7. *See generally* PO Resp.

On the complete record before us, for the reasons explained in the context of claim 1 and Petitioner’s discussion of the additional limitations recited expressly by dependent claims 2–5 and 7, we find that Petitioner has established that Field teaches the subject matter of claims 2–5 and 7.

*c. Dependent Claim 6*

Claim 6 depends from claim 1 and recites “[t]he method of claim 1, wherein the first client device and the at least a second client device are associated with a common user.” Ex. 1001, 20:30–32. Petitioner contends that Field would have rendered the subject matter of dependent claim 6 of the ’146 patent obvious to one of ordinary skill in the art at the time of the invention. Pet. 40–41. In particular, Petitioner asserts that “Field describes different types of client devices that would have implemented the backup process,” *id.* at 40 (citing Ex. 1004 ¶¶ 21, 25), and one of ordinary skill in the art “would have understood that a common user would have used these different client devices and would have synchronized data among the different devices,” *id.* at 30 (citing Ex. 1002 ¶¶ 119–122).

Petitioner asserts the following regarding Field’s teachings and suggestions pertaining to the subject matter of claim 6:

Field explains that its client computers or “target computing devices” may be “any one of a variety of devices including . . . personal computing devices, server-based computing devices, personal digital assistants, cellular telephones, other electronic devices having some type of memory.” EX1004, ¶25. A [person of ordinary skill in the art] would have recognized that because Field’s invention tracks data according to a “specific user” and is applied to many different devices, a single user could and often would have

multiple devices that are backed-up. EX1004, ¶40; EX1002, ¶120. Moreover, that Field describes devices like [personal data assistants] and cellular telephones being backed up further suggests that a user would have more than one device backed-up. Certainly, an “enterprise user” such as disclosed in Field would not have only a PDA or cellular telephone with valuable data that needed to be backed-up. EX1002, ¶¶120-22. Rather, that user would also have additional devices, such as desktop computers, laptops, etc., that also have valuable information needed to be backed-up. *Id.* Based on the disclosures of Field, a POSA certainly would have understood that it would be advantageous for a single user to be able to access the same files across multiple devices. *Id.*

Pet. 40–41.

In its Response, Patent Owner asserts that “Field does not explicitly disclose or suggest that a user performs synchronization of electronic data with the use of multiple devices.” PO Resp. 44 (citing Ex. 2015 ¶ 114). Patent Owner contends that “Field, owned by Microsoft, is primarily concerned with files for an operating system and application program and thus teaches away from allowing the same user to synchronize such files across multiple devices.” *Id.* at 44–45 (citing Ex. 1004 ¶¶ 24, 26–27, 40; Ex. 2015 ¶ 114). Thus, Patent Owner contends, Field does not teach or suggest the subject matter of claim 6. *Id.* at 45.

In its Reply, Petitioner asserts that Field “manages ‘user level data’ and ‘metadata’ that is specific to each user.” Pet. Reply 20 (citing Ex. 1004 ¶ 40). Petitioner contends that by storing user data specific to a particular user (e.g., a user’s files), Field teaches synchronizing (e.g., restoring) data to another device belonging to the same user. *Id.* (citing Ex. 1019 ¶ 57). Additionally, Petitioner notes that, during his deposition, Dr. Weissman

expressly withdrew his original testimony, from his declaration, in support of Patent Owner’s argument. *Id.* at 20–21 (quoting Ex. 1020, 20:3–13).

In its Sur-reply, Patent Owner reiterates its position that Field’s disclosure does not support “Petitioner’s argument that user data backed up on one device may then be restored on a different device operated by the same user.” PO Sur-reply 18. Additionally, Patent Owner contends that Petitioner “mischaracterizes” Dr. Weissman’s retraction, asserting that Dr. Weissman was “only referring to a backup / restore operation, and not synchronization.” *Id.*

We find Petitioner’s argument persuasive that Field suggests the subject matter of claim 6 to one of ordinary skill in the art. In particular, as recited above, claim 6 simply adds that the first and second client devices of claim 1 are associated with a common user. Field discloses multiple computing devices, including “laptop computers, tablet computers, [and] personal digital assistants (PDAs),” and expressly states that its teachings “can be practiced on other kinds of computing devices” of which those identified are mere examples. Ex. 1004 ¶ 21; *see also id.* ¶ 25 (further identifying cellular telephones and “other electronic devices having some type of memory, and the like”). Although Field does not expressly state that two devices may be associated with a common user, Petitioner presents persuasive, *unrebutted*,<sup>24</sup> evidence that Field’s listing of particular devices,

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<sup>24</sup> We find that Dr. Weissman withdrew his opinion in support of Patent Owner’s position. In particular, during his deposition, Dr. Weissman expressly stated, “[s]o now I am offering no opinions as of today on whether in Field, or in Field in combination with the other references, discloses the following: A client device or user can restore data backed up by a different client device or user.” Ex. 1020, 20:3–8. We reject Patent Owner’s attempt to minimize Dr. Weissman’s change of opinion, as it applies to claim 6,

including PDAs and cellular telephones, would *suggest* to one of ordinary skill in the art that two devices (e.g., a cellular telephone and a laptop computer or a desktop workstation and a laptop computer) may be associated with a common user. *See* Ex. 1002 ¶¶ 120–121; *see also* Ex. 1019 ¶ 57 (“By storing user data specific to the user (e.g., a user’s files), Field *suggests* that the specific user is able to synchronize or restore data to another device belonging to the same user.” (emphasis added)).

On the complete record before us, for the reasons explained above, we find that Petitioner has established that Field suggests the subject matter of claim 6 to one of ordinary skill in the art.

#### 4. *Objective Considerations of Nonobviousness*

Neither party presents evidence of objective considerations of nonobviousness.

#### 5. *Weighing the Graham Factors*

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Arctic Cat*, 876 F.3d at 1361. On balance, considering the complete record

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based on an alleged distinction between synchronizing and backing-up/restoring. *See* PO Sur-reply 18. Patent Owner expressly admitted and we have determined that the preamble of claim 1, which includes the only recitation of “synchronizing” (or any form thereof), is not limiting. *See supra* §§ II.A., III.B.3.a.i. We agree with Petitioner that the steps of claim 1 (and claim 6) are directed to backing-up and restoring data. *See, e.g.*, Pet. 10–12 (discussing the meaning of the preamble of claim 1). As properly understood, Dr. Weissman’s withdrawal applies to claim 6 as well. Nonetheless, even if Dr. Weissman had not withdrawn his testimony, we still find Petitioner’s argument and evidence persuasive for the reasons discussed above.

before us, Petitioner has established, by a preponderance of the evidence, that Field would have rendered the subject matter of claims 1–7 of the ’146 patent obvious to one of ordinary skill in the art at the time of the invention.

*C. Obviousness over Strong and Field*

Petitioner also contends that the combination of Strong and Field would have rendered the subject matter of claims 1–7 of the ’146 patent obvious to one of ordinary skill in the art. Pet. 42–72. Because Petitioner’s challenge based on Field is dispositive as to all of the Challenged Claims, we need not reach this additional asserted ground. *See SAS Inst. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (nonprecedential) (stating that the “Board need not address issues that are not necessary to the resolution of the proceeding,” such as “alternative arguments with respect to claims [the Board] found unpatentable on other grounds”); *SK Hynix Inc. v. Netlist, Inc.*, IPR2017-00692, Paper 25 at 40 (PTAB July 5, 2018) (determining all challenged claims to be unpatentable and not addressing additional grounds).

IV. SUMMARY<sup>25</sup>

For the foregoing reasons, Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–7 of the ’146 patent are unpatentable.

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<sup>25</sup> 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*

Our conclusions regarding the Challenged Claims are summarized below:

| <b>Claims Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s) /Basis</b> | <b>Claims Shown Unpatentable</b> | <b>Claims Not Shown Unpatentable</b> |
|--------------------------|--------------------|----------------------------|----------------------------------|--------------------------------------|
| 1–7                      | 103(a)             | Field                      | 1–7                              |                                      |
| 1–7                      | 103(a)             | Field, Strong              |                                  |                                      |
| <b>Overall Outcome</b>   |                    |                            | 1–7                              |                                      |

#### V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–7 of U.S. Patent No. 9,679,146 B2 are determined to be unpatentable; and

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

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*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).*

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