

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.

SYMANTEC CORPORATION,  
Patent Owner.

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Case IPR2014-00090  
Patent 7,024,527 B1

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Before WILLIAM V. SAINDON, THOMAS L. GIANNETTI, and  
TRENTON A. WARD, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION

Final Written Decision  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

Denying Motion to Amend  
*37 C.F.R. § 42.121*

## I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

With respect to the grounds asserted in this trial, we have considered the papers submitted by the parties and the evidence cited therein. For the reasons discussed below, we determine that claims 1, 6, 8, 20, and 24 of U.S. Patent No. 7,024,527 B1 (Ex. 1001, “the ’527 patent”) are unpatentable. In addition, we deny the Motion to Amend for failing to discuss adequately how the proposed substitute claims are patentable in view of the prior art.

### *A. Procedural History*

Veeam Software Corporation (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 6, 8, 20, and 24 of the ’527 patent. Paper 1 (“Pet.”). Petitioner included a Declaration of Dr. Ahmed Amer. Ex. 1007. Symantec Corporation (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 8 (“Prelim. Resp.”).

In our Decision Instituting *Inter Partes* Review, we granted review as to all of the challenged claims. Paper 9 (“Dec. on Inst.”). Patent Owner filed a Response to the Petition (Paper 18, “PO Resp.”), which included a Declaration of Dr. John J. Levy (Ex. 2006). Petitioner filed a Reply to the Response (Paper 23, “Pet. Reply”), which included a Reply Declaration of Dr. Amer (Ex. 1011).

On December 18, 2014, all parties were present for an oral hearing. Paper 36 (“Tr.”).

This Decision includes our decision on Patent Owner's Motion to Amend (Paper 19, "Mot. Amend"), which was filed with a Declaration of Dr. Levy in support of the motion (Ex. 2010). Petitioner filed an opposition to Patent Owner's motion (Paper 24, "Opp. Mot. Amend") and Patent Owner filed its reply (Paper 29, "Reply Mot. Amend") and a Declaration of Dr. Levy in reply to the opposition (Ex. 2012).

*B. Related Matters*

Petitioner identifies the '527 patent as involved in concurrent litigation styled *Symantec Corporation v. Veeam Software Corporation*, No. 3:12-cv-5443-SI (N.D. Cal.) (consolidated with 3:12-cv-00700-SI (N.D. Cal.)). Pet. 1.

In addition to this Petition, Petitioner previously filed petitions challenging the patentability of certain claims of Patent Owner's U.S. Patent Nos. 6,931,558 B1 (IPR2013-00141, IPR2013-00142), 7,254,682 B1 (IPR2013-00144, IPR2013-00145), 7,191,299 B1 (IPR2013-00143, IPR2013-00151). In three of those proceedings, we denied institution on August 7, 2013. *See* IPR2013-00144, Paper 11; IPR2013-00145, Paper 12; IPR2013-00151, Paper 7. We entered final decisions in the remaining proceedings on July 29, 2014. *See* IPR2013-00141, Paper 50; IPR2013-00142, Paper 51; IPR2013-00143, Paper 48. Additionally, on October 22, 2013, Petitioner filed petitions challenging the patentability of certain claims of Patent Owner's U.S. Patent Nos. 7,480,822 B1 (IPR2014-00088), 7,831,861 B1 (IPR2014-00089), and 8,117,168 (IPR2014-00091). On March 20, 2015, we entered a final decision in IPR2015-00088 (Paper 45) and shall enter final decisions in the other cases concurrently with this decision.

### *C. Technology Background*

A “file” is a logical abstraction; a name used to identify a collection of data. Ex. 2006 ¶ 34; Ex. 1007 ¶ 28. A data storage device (e.g., a hard disk) is divided into small storage containers called blocks. Ex. 2006 ¶ 35; Ex. 1007 ¶¶ 27–28. A file is essentially a named collection of blocks, those blocks containing all of the data of the file. A file system keeps track of which blocks have been allocated to which files. Ex. 2006 ¶ 36; Ex. 1007 ¶ 28. If a program requests a file, the file system looks up which blocks hold the data of the file and sends the requestor the data in those blocks. Ex. 2006 ¶ 36; Ex. 1007 ¶ 28. This is called file-level access, with the file system acting as a translator between the logical file name and the physical collection of blocks. Ex. 1001, 1:41–48. Alternatively, if a program already knows which block has the data it needs, it is possible simply to ask for the data in that block, without consulting the file system. *Id.* at 1:41–42, 1:49–52. This is called block-level access. *See id.*

### *D. The '527 Patent*

The '527 patent is titled “DATA RESTORE MECHANISM” and generally relates to a system and method for performing restoration from backups, while applications are active and accessing the data being restored. Ex. 1001, Abstr. More particularly, the patent relates to determining if data blocks requested by an application have been restored, and if not, restoring those requested data blocks immediately. *Id.* at 3:40–45.

The '527 patent explains the benefits of using on-demand restoration that operates at the block level. According to the patent, prior art file-level restoration required an application to wait until an entire file was fully

restored before the application could access the data of that file. *Id.* at 3:57–60. By instead operating at the block level, the particular block requested by the application is restored immediately and the application does not have to wait until the entire file is restored. *Id.* at 3:38–45, 60–64. The patent explains that block-level restoration, versus file-level, is beneficial because a significant amount of time may be needed to restore an entire file. *Id.* at 1:66 to 2:8. With this benefit in mind, the patent describes a system for allowing an application to access blocks of data during a restoration.

Figure 2 of the '527 patent is illustrative, and is reproduced below:

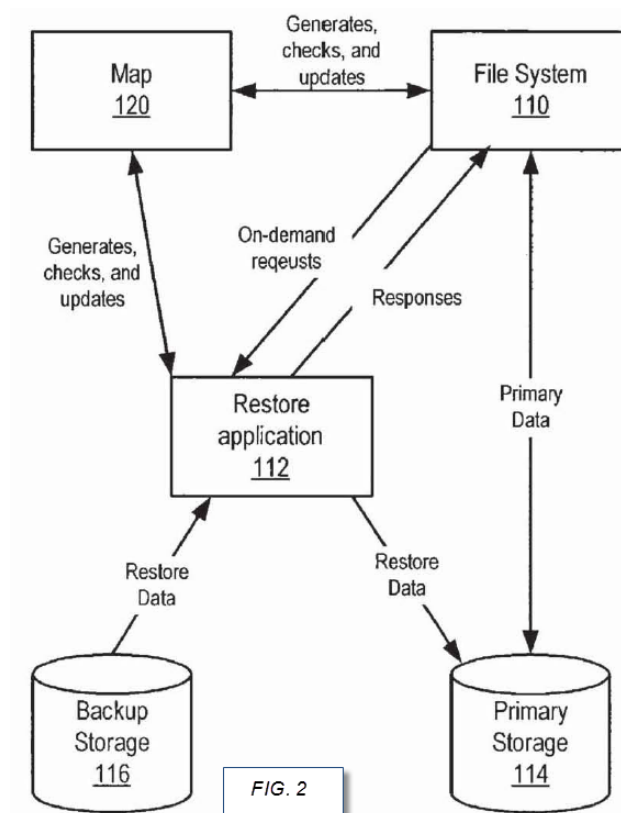


Figure 2 above illustrates file system 110 that checks map 120 to determine whether a requested data block has been restored on primary storage 114.

*Id.* at 7:33–35. If not, file system 110 sends a request to restore application 112, which in turn gets the block from backup storage 116 and restores that

block on primary storage 114. *Id.* at 7:37–44. Restore application 112 or file system 110 subsequently updates map 120 to indicate that the block has been restored on primary storage 114. *Id.* at 7:48–54.

*E. Illustrative Claims*

Claims 1 and 20 are independent. They are reproduced below:

1. A system, comprising:
  - a primary storage;
  - a backup storage;
  - a restore application configured to restore a set of files from the backup storage to the primary storage; and
  - a file server configured to, during said restore:
    - determine that one or more blocks of data of a file in the set of files needed by an application have not been restored; and
    - direct the restore application to restore the determined one or more blocks of data in response to said determination that the one or more blocks of data have not been restored;wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.
  
20. A computer-accessible medium comprising program instructions, wherein the program instructions are configured to implement:
  - a restore application starting a restore of a set of files from a backup storage to a primary storage;
  - during said restore:
    - a file server determining that one or more blocks of data of a file in the set of files needed by an application have not been restored; and

the file server directed the restore application to restore the determined one or more blocks of data in response to said determining that the one or more blocks of data have not been restored; and  
the restore application restoring the determined one or more blocks of data;  
wherein the restored one or more blocks of data are accessible by the application while said restore is in progress.

#### *F. Instituted Grounds and Prior Art*

We instituted an *inter partes* review on the following grounds:

- (1) Obviousness of claims 1, 6, 20, and 24 in view of Ohran<sup>1</sup> and WinNT;<sup>2</sup> and
- (2) Obviousness of claim 8 in view of Ohran, WinNT, and Curran.<sup>3</sup> Dec. on Inst. 19.

## II. ANALYSIS

### *A. Claim Construction*

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1279–83 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, claim

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<sup>1</sup> US Pub. 2002/0083366 A1, published June 27, 2002 (Ex. 1003).

<sup>2</sup> Rajeev Nagar, *Windows NT File System Internals—A Developer’s Guide*, 3–774 (1997) (hereinafter, “WinNT”) (Ex. 1006).

<sup>3</sup> US Patent No. 7,234,077 B2, issued June 19, 2007, filed June 24, 2003 (Ex. 1002).

terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

In our Decision to Institute this trial, we construed the following terms or phrases: “file server,” “restore application,” “restore,” “block of data of a file,” and “determine that one or more blocks of a file . . . have not been restored.” Dec. on Inst. 7–10. Patent Owner does not object to these constructions. PO Resp. 17. Likewise, Petitioner does not object specifically to these constructions. *See generally* Pet. Reply. These constructions are not at issue in this Decision. Accordingly, we do not discuss them further.

Patent Owner proposes a construction for “during said restore.” PO Resp. 17. In addition, one issue in the parties’ dispute over the prior art turns on the construction of “set of files.” PO Resp. 33–39; Pet. Reply 8–10. We address these terms below.

*1. “during said restore”*

Patent Owner proposes a construction for the term “during said restore” (independent claims 1, 20): “while the set of files are in the process of being restored from the backup storage to the primary storage (i.e., after some, but not all, of the data blocks in the set of files have been copied to primary storage).” PO Resp. 17; *see also id.* at 17–23 (setting forth Patent Owner’s analysis); Ex. 2006 ¶¶ 54–59 (Dr. Levy testifying in support of Patent Owner’s construction). Petitioner disagrees with this construction,



and instead proposes: “at some point in the entire time of; in the course of.” Pet. Reply 2–3; *see also* Ex. 1010 (listing a dictionary definition of “during” consistent with Petitioner’s proffered construction); Ex. 1011 ¶¶ 6–9 (Dr. Amer testifying for Petitioner’s construction). We note that the proposed constructions are similar, except that the qualification expressed in the parenthetical of Patent Owner’s construction effectively precludes at least the first two blocks restored from being “during said restore.” *See* Pet. Reply 2.

We conclude that Patent Owner’s construction is overly narrow. Patent Owner proposes to limit “during said restore” based on an example in the specification wherein several blocks have been restored before the file server determines that an unrestored block has been requested. PO Resp. 20 (citing Ex. 2006 ¶¶ 57–58). Patent Owner’s analysis here is contrary to the well-settled principle of claim construction that, “[a]bsent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). The example provided in the specification upon which Patent Owner relies is nothing more than an example; it provides no basis to limit the claim to that exact situation. *See also SuperGuide Corp. v. DirecTV Enter., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (discussing cases wherein the court expressly rejected the contention that even if a patent describes only a single

embodiment, the claims of the patent are not construed as being limited to that embodiment).

In view of the above, we determine that the broadest reasonable interpretation of “during said restore” consistent with the specification is “at some point in the entire time of; in the course of.”

## 2. “*set of files*”

Independent claim 1 requires a “restore application configured to restore a *set of files*” and a “file server configured to . . . determine that one or more blocks of data of a file in the *set of files* . . . have not been restored” (emphasis added). Independent claim 20 has similar limitations. Patent Owner does not offer explicitly a definition of the term but instead makes several arguments that implicitly convey Patent Owner’s proposed construction of the term. In general, Patent Owner argues that the presence of the term “set of files” means that those files must be selected, defined, or specified in advance, and must be selected from a larger whole. PO Resp. 38.

Patent Owner first argues that, “until a set of files has been specified or identified, the restore application would not know which files to start restoring from the backup storage.” *Id.* Patent Owner’s argument presumes that the claims require additional implicit steps—that “the files in the ‘set of files’ have been selected or defined prior to beginning the restore process.” *Id.*

We are not persuaded that the claims include a step of selecting or defining files to be restored. Ex. 1011 ¶ 16 (Petitioner’s declarant, Dr. Amer, testifying that “[t]here is no requirement that these files must first be selected”); Ex. 1009, 43 (Patent Owner’s declarant, Dr. Levy, testifying that

“claim [1] doesn’t discuss passing information to the restore application”). If an entire disk volume were being restored, for example, that disk would define the set of files being restored. Ex. 1011 ¶ 17 (Dr. Amer testifying that “the entirety of a storage medium would include the files stored [thereon]”); PO Resp. 37 (admitting that “it may be true in certain cases that restoring every block could result in files being restored”). In other words, there is no need to individually select or define files in order to perform a restore of a set of files.

Patent Owner offers no persuasive reason why the claims would include such a step, given that the claims do not recite such a step. Indeed, the ’527 patent is directed to a “disk-based backup” using a “block-level restore” (Ex. 1001, 3:34–40), and Patent Owner characterizes the ’527 patent as having a process wherein, “during the restore, an application . . . may request access to a particular data block within a file (i.e., ‘an on-demand request’).” PO Resp. 14 (citing Ex. 1001, 3:40–42); *see also* Prelim. Resp. 5 (setting forth the same argument). Accordingly, as Patent Owner acknowledges, we conclude that the specification describes a disk-level backup done at a block level, which requires no identification of files to be included in the set of files. *See also* PO Resp. 15 (“unlike prior backup-restore systems, applications are able to access data ‘on-demand’ at the block-level . . . , rather than having to wait until the entire file is restored”) (citing Ex. 1001, 7:33-47); Prelim. Resp. 2-3 (the ’527 patent “enables data to be restored and accessed ‘on demand’ at a data block-level” and the prior art “did not allow applications to request access to the individual data blocks”).

Patent Owner lastly argues that a “set of files” implies something less than all files available, such that restoring all of the blocks of a disk teaches “restoring everything,” whereas the claim requires restoring a “set of files.” PO Resp. 37–38. Patent Owner’s argument is unconvincing; the claims do not recite a “subset of files” or include language that precludes all files. We are persuaded that a “set of files” includes a set of all files. Ex. 1011 ¶ 17; *see* Ex. 1009, 15:8–10 (Patent Owner’s declarant, Dr. Levy, testifies that “[a] set is one or more of something”).

For the reasons set forth above, no limitation in claims 1 and 20, read in light of the specification, requires that the “set of files” be identified or specified, nor is such an identification required from a technical standpoint. Instead, a “set of files” is simply those files that are restored by the restore application. We construe “set of files,” consistent with the broadest reasonable interpretation in light of the specification, to be “one or more files.”

#### *B. The Declaration of Dr. Amer*

Patent Owner argues that we should give little or no weight to the declarations of Petitioner’s declarant, Dr. Amer. PO Resp. 44–47. Patent Owner argues that: (1) his testimony is “conclusory” (*id.* at 44); (2) he did not author his own declarations (*id.* at 44–45); (3) he used the word “obvious” in a manner inconsistent with the legal term (*id.* at 45–46); (4) he “refused to provide straightforward responses” (*id.* at 46); (5) he “provided very lengthy responses” with “qualifi[cations]” (*id.*); and (6) he only had experience with a “specific type of storage technology that was different from the traditional data backup and restore systems, such as those used in the ‘527 Patent” (*id.* at 46–47).

In reply, Petitioner states that Dr. Amer was involved with the creation of his testimony and was available for cross-examination. Pet. Reply 12. Petitioner states that Dr. Amer's use of the term "obvious" in its technical context rather than its legal context is appropriate. *Id.* Petitioner states that Dr. Amer was prepared for deposition and provided testimony commensurate in scope with the questions asked and the context of the documents about which he was asked. *Id.* at 13–14. Lastly, Petitioner states that Dr. Amer's work is on the "cutting-edge" of the relevant technology, but that does not mean he could not testify as to the well-known and traditional areas of the relevant technology. *Id.* at 14.

We have reviewed the testimony of Dr. Amer, and find his testimony supported by the evidence and his experience and, therefore, relevant and useful. In view of the above, we give due weight to his testimony in each instance as befits his expertise, the nature and content of his testimony, and the degree of evidentiary support for his testimony. 37 C.F.R. § 42.65; Fed. R. Evid. 705.

*C. Obviousness of Claims 1, 6, 20, and 24 in View of Ohran and WinNT*

For the reasons set forth below, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 1, 6, 20, and 24 is obvious in view of Ohran and WinNT. We first provide a brief overview of Ohran and WinNT. We then discuss Petitioner's asserted ground and Patent Owner's arguments against.

*1. Ohran*

Ohran describes a system that allows on-demand access to lost data blocks while lost data blocks are being restored. Ex. 1003 ¶ 20. When an

application requests a data block that has not yet been restored on the primary storage, the system retrieves the data block from the backup storage and writes that block to the primary storage. *Id.* ¶ 39. From a user's perspective, this first restoration channel provides for on-demand restoration, as if the primary storage had no lost data. *See id.* ¶ 41.

While this on-demand channel is available, a second restoration channel acts to restore all lost data (e.g., the entire volume, not just the data requested). *Id.* ¶ 45. This second channel utilizes a snapshot copy of the primary storage, held in backup storage and taken prior to the data being lost. *Id.* This snapshot copy is transferred, typically physically, from the geographic location of the backup storage to the geographic location of the primary storage. *Id.* ¶¶ 44–45. In order to prevent updated blocks written to the primary storage using the first channel from being overwritten by old blocks from the restoration using the second channel (e.g., due to on-demand restores occurring during the time it takes for the snapshot to be driven to the primary storage location), an overwrite map is used to track the status of the blocks during the restoration. *Id.* ¶ 42 (describing the overwrite map); *see also id.* ¶¶ 63–64 (describing an example of the overwrite map in use). Figure 1 of the '527 patent (reproduced below) provides an exemplary configuration:

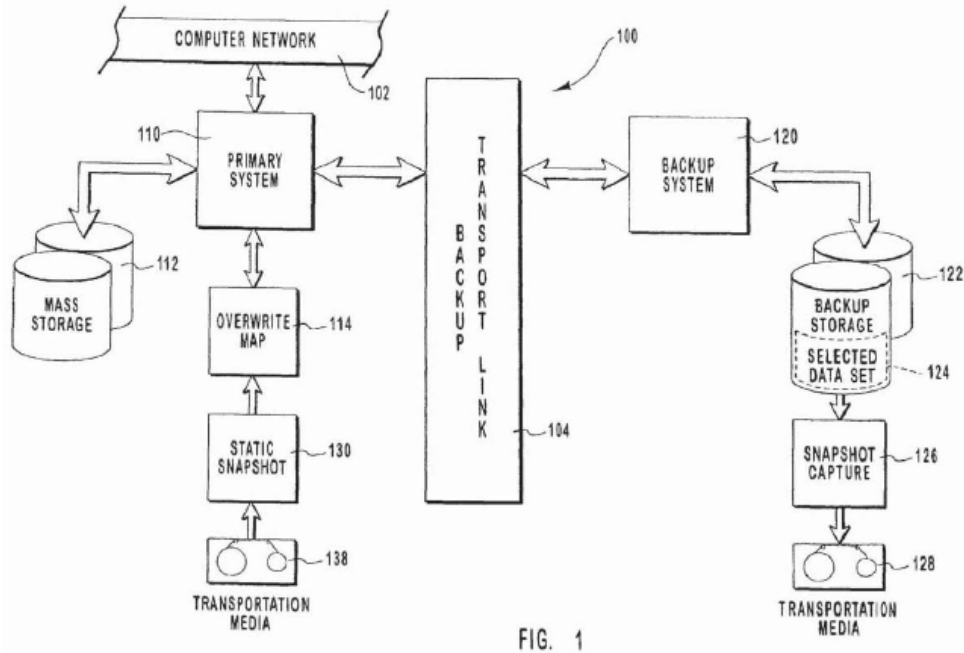


Figure 1 of the '527 patent depicts a system as described above.

## 2. WinNT

WinNT discusses the Windows NT file system, and the interaction of the file system with other core operating system components. Ex. 1006, 3. The file system uses a logical disk, which is “a linear sequence of fixed-size . . . blocks of storage.” *Id.* at 22. Applications can access file data residing in shared logical volumes/disks. *Id.* at 27. Implementation of file system operations is through the use of drivers. These file system drivers provide for, among other things, the ability to share files and information, as well as to identify the files by symbolic/logical name rather than physical name. *Id.* at 21.<sup>4</sup> A particular type of driver is a filter driver, which can

<sup>4</sup> Symbolic/logical name is analogous to “file-level” and physical name is analogous to “block-level.” See, e.g., Ex. 1007 ¶¶ 25–28.

intercept and modify existing file system requests. *Id.* at 33. This allows for the re-routing and modification of requests, to provide additional functionality without necessitating alteration of the software that generated the original request. *See id.* at 618.

### 3. *Petitioner's Ground*

Petitioner asserts that the subject matter of claims 1, 6, 20, and 24 is obvious in view of Ohran and WinNT. Pet. 18–29. As to independent claims 1 and 20, Petitioner asserts that the claimed restore application restoring a set of files from secondary to primary storage reads on Ohran's second channel, which restores a snapshot of the entire backup (secondary) data set to the primary storage device. *Id.* at 18–19, 21–22. Petitioner asserts that the claimed file server, determining that a requested block has not been restored and directing the restore application to restore that block from backup storage, reads on Ohran's first channel, which restores an unrestored data block to primary storage from backup storage upon request. *Id.* at 18, 22–27. Petitioner asserts that this first, on-demand restoration channel operates during the time when the second restoration channel is being operated. *Id.* at 25–27. Petitioner acknowledges that the claims require that the restoration is of “a set of files” and that Ohran does not describe the blocks it restores as part of a “set of files” explicitly. *Id.* at 24. Petitioner reasons, however, that it would have been obvious to a person of ordinary skill in the art that a restoration of blocks generally will be a restoration of files, because a person of ordinary skill in the art knows that files are made of blocks and the typical use of blocks is to store the information of files. *Id.* at 20, 24–25.



As to dependent claims 6 and 24, Petitioner asserts that the claimed filer system and driver for access to the file system read on those same items found in WinNT. *Id.* at 27–29. Petitioner asserts that it would have been obvious to include in Ohran’s system these known ways to implement file servers. *Id.*

The ’527 patent characterizes itself as directed to block-level restoration, and discusses the shortfalls of file-level restoration. Section I.D, above. Patent Owner represented during prosecution of the application leading to the ’527 patent that it was directed to block-level restoration.<sup>5</sup> Patent Owner represented in its Preliminary Response that the ’527 patent was directed to block-level restoration, and successfully argued that certain of Petitioner’s grounds were unlikely to succeed because they relied on prior art that performed file-level restorations.<sup>6</sup> Dec. on Inst. 11–12 (determining Patent Owner’s arguments that the prior art was directed to file-level restoration, not block-level, was persuasive). Notwithstanding, Patent Owner now characterizes the ’527 patent as directed to both file-level and

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<sup>5</sup> Prosecution History of US 7,024,527, Response to Office Action of August 11, 2005 at 11 (“In contrast, in [the prior art cited], restoration appears to be performed at the granularity of files, rather than at the granularity of individual data blocks of files.”) (Sept. 23, 2005) (Ex. 3001).

<sup>6</sup> *See, e.g.*, Prelim. Resp. 15 (“The claimed restoration mechanisms require data restoration and access at the block-level.”); *id.* at 55 (“As explained above, the specification and claims of the ’527 Patent, as well as its prosecution history, make clear that claimed restore mechanisms are performed at a data block level, which is significantly different from data restoration and access at a file level. In particular, the claimed functionality requires block-level determinations, restorations, and access during the restore process”).

block-level restorations. *See, e.g.*, PO Resp. 36 (“the challenged claims require both block-level and file-level access and restoration”). Specifically, Patent Owner’s first principal argument is that Ohran does not teach file-level restoration and thus does not teach restoring a “set of files.” Patent Owner’s second principal argument is that Ohran’s two restoration channels do not operate at the same time and thus do not teach an on-demand restoration during a general restoration. Patent Owner’s third principal argument is that the teachings of Ohran and WinNT cannot be combined in the manner proposed. We now address these arguments.

*a. “Set of Files”*

Independent claims 1 and 20 both require “a restore application” to “restore a set of files” from the backup storage to the primary storage. Patent Owner’s argument is, essentially, that Ohran is concerned only with block-level restoration, not file-level restoration, such that it does not restore a “set of files” but rather a set of blocks. PO Resp. 34–39.

Patent Owner’s argument is predicated on the claims requiring a file server to determine which blocks correspond to a requested file. *See* PO Resp. 38 (“determining whether or not certain data blocks of a file . . . have already been restored requires . . . knowing which files are being restored . . . and what data blocks make up those files.”). As we determined above in our construction of “set of files,” however, the claims are broad enough to encompass the case wherein the application specifically requests a particular block from the file server.

Patent Owner’s argument also is predicated on the claims requiring a set of files to be selected or defined prior to the restoration process. *See id.* (“until a set of files has been specified or identified, the restore application

would not know which files to start restoring”). As we determined above in our construction of “set of files,” however, the file server handles the on-demand restoration by directing the restore application to restore one or more blocks and by doing so, the restore application restores a set of files.

In view of the above, we are not persuaded by Patent Owner’s argument that the claim requires “file-level” restoration. *See* PO Resp. 38. Patent Owner conflates restoration of files with file-level restoration; they are not the same. The ’527 patent specification (and Patent Owner, in its Preliminary Response) differentiate the block-level restoration of the ’527 patent with the file-level restoration techniques of the prior art. *See, e.g.*, Ex. 1001, 1:66–2:8 (disparaging file-level restorations as slow); n.6, *supra*. Accordingly, we determine that, although the claims require a restoration of files, Patent Owner is incorrect that that means file-level restoration.

*b. “Determining” / “Directing” During a Restore*

Independent claim 1 requires a file server configured to “determine that one or more blocks . . . have not been restored,” and if not, to “direct the restore application to restore the . . . blocks.” Independent claim 20 has similar limitations. Patent Owner points out that these “steps” occur *during* a restore of a set of files (the “general” restore). PO Resp. 39. Patent Owner argues that, if the second restoration channel in Ohran corresponds to the general restore, and the first restoration channel in Ohran corresponds to the on-demand restore, then Ohran does not satisfy the “during” limitation because, according to Patent Owner, the first restoration channel does not operate during the second restoration channel, but rather before it. *Id.* at 39–42.

Patent Owner's argument is unpersuasive because it misapprehends the Ohran reference. Patent Owner relies on the testimony of Dr. Levy, Ex. 2006 ¶¶ 65–76, but that testimony is refuted by the disclosure of Ohran and the testimony of Petitioner's declarant, Dr. Amer. We first turn to the relevant portions of Ohran and then explain why we credit the testimony of Dr. Amer over that of Dr. Levy.

As we explained above, Ohran discloses two restoration channels. The first, on-demand channel pulls data into the primary system from the backup system over the network. Ex. 1003 ¶ 21. The second channel takes the data in the backup system and places it directly into the primary system. *Id.* ¶ 22. Because the first channel pulls data over a network, it is slower than if the data were physically already at the primary system. *Id.* ¶ 41, 43. Thus, the second channel is used to transport a large amount of data. *Id.* ¶¶ 42–43. A difficulty with the second channel is that it typically requires physically transporting a copy of the backup system data to the location of the primary system (e.g., by vehicle), which can be in a geographically distinct location. *Id.* ¶¶ 22, 27, 44–45.

Patent Owner's argument hinges on its assertion that when the second channel is used, the first channel is no longer used (thus, purportedly failing to meet the “during” requirement of the claims). PO Resp. 42; Ex. 2006 ¶¶ 72–76, 78–86. This assertion is without support in the evidence.

We are not convinced that Ohran's first channel would stop working when the second channel is activated. The goal of Ohran is to “allow[] for computer operations to continue even though data blocks are lost.” Ex. 1003 ¶ 20. If the first channel were to shut down while waiting for the second channel to finish, computer operations would not be able to continue. Patent

Owner cites to no portion of Ohran for support of its assertion. PO Resp. 42. Instead, Patent Owner relies solely on the testimony of Dr. Levy. *Id.* (citing Ex. 2006 ¶¶ 72–76, 78–86); Pet. Reply 6 (pointing out that Patent Owner “provides no . . . explanation” aside from the Levy declaration). Dr. Levy supports his assertion by providing his analysis of Figures 2 and 3 of Ohran, as well as his analysis that, if the two channels operated simultaneously, a “race condition” might exist. Ex. 2006 ¶¶ 72–76, 78–86. This analysis is unpersuasive; we address each portion in turn.

*(1) Figure 2 of Ohran*

Dr. Levy concludes that, in Figure 2 of Ohran, “it is clear that any subsequent read requests will wait until the completion of the ‘second channel’ restore.” Ex. 2006 ¶ 73. Dr. Levy cites only to Figure 2 itself and paragraph 42 of Ohran for support. Figure 2 is reproduced below:

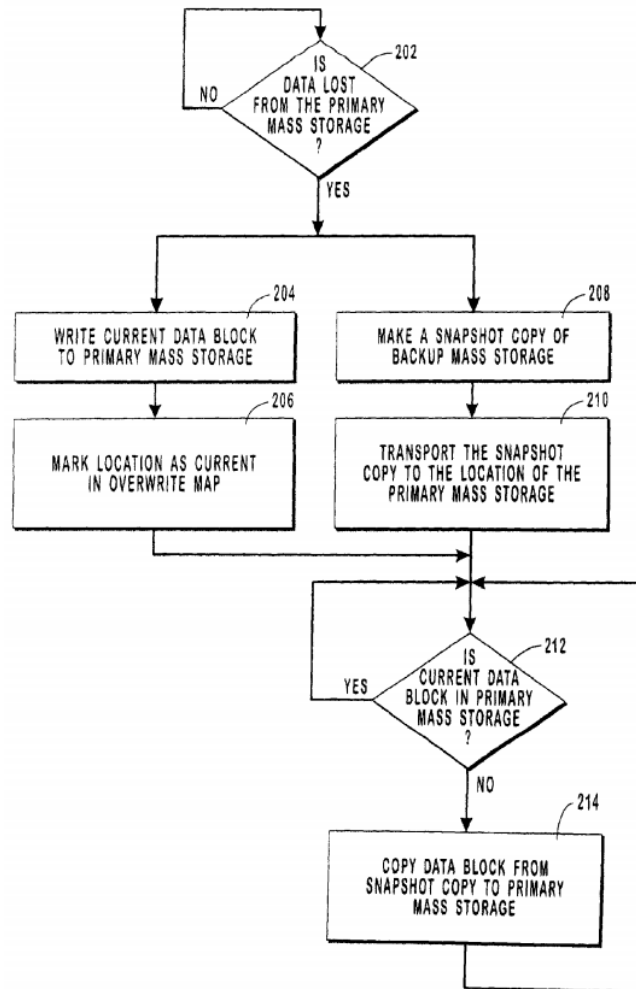


FIG. 2

Figure 2 of Ohran depicts a flow chart explaining the two-channel restoration process of Ohran. If an application program generates a data request, that request triggers decision block 202, which establishes whether the request is of a block that is lost from the primary mass storage. Ex. 1003 ¶¶ 37–38. If the block is lost, then the first channel (blocks 204 and 206) restores the block by accessing the backup over the network. *Id.* ¶¶ 39–43. Figure 2 also shows the second channel (blocks 208, 210, 212, and 214), in which a snapshot of the backup is physically transported to the primary storage and all blocks are updated. *Id.* ¶¶ 44–46.

Paragraph 42, the only paragraph Dr. Levy cites to, merely describes how the first channel updates an overwrite map after data is restored over the first channel, so that the second channel does not overwrite the more recent data provided through the first channel. Nothing in this paragraph sufficiently supports Dr. Levy's position that the first channel pauses once the second channel is activated.

The only other disclosure Dr. Levy relies on is Figure 2 itself, but Dr. Levy's explanation is given without discussion of the textual portions of Ohran. Dr. Levy testifies that Figure 2 shows that the steps in the first channel (blocks 204, 206) only occur once, because no arrow takes the flowchart operation back to the top. Ex. 2006 ¶ 73. However, Dr. Levy fails to discuss the passage in Ohran that explains how step 202 triggers when an application requests data. Ex. 1003 ¶¶ 39, 41; *see also* Ex. 1011 ¶¶ 10–13 (Dr. Amer testifying that one of ordinary skill would understand that the two channels occur simultaneously). Thus, each time an application requests data, the Figure 2 flowchart goes back to the top and on-demand restorations will occur using the first channel, in the midst of the general restoration using the second channel.

In view of the above, we are persuaded that Dr. Levy's interpretation of Figure 2 of Ohran is unsupported by the evidence, and we therefore give his testimony on this matter little weight. Instead, we credit the testimony of Dr. Amer (Ex. 1011 ¶¶ 10–13), whose position that the two channels occur simultaneously is consistent with the disclosure in Ohran outlined above.

*(2) Figure 3 of Ohran*

Figures 3A and 3B of Ohran depict an exemplary method of Ohran. Ex. 1003 ¶ 19. Dr. Levy testifies that this example does not show an on-

demand read operation being performed during the snapshot restore procedure. Ex. 2006 ¶ 74. Although this is true, it is immaterial. There is no requirement that claims may only read on exemplary embodiments of prior art references. The focus of Figures 3A and 3B merely is to depict an example of how the system works. See Ex. 1003 ¶ 19. As we discussed above, Figure 2 of Ohran, when read in the proper context with its written description, explains that the first channel remains open while the second channel is running. Accordingly, Dr. Levy's testimony with respect to Figures 3A and 3B is unpersuasive in showing that Ohran's first channel does not operate while the second channel is running.

*(3) "Race Condition"*

Dr. Levy testifies that the two channels in Ohran could not operate simultaneously because it may result in a race condition. Ex. 2006 ¶ 76. We do not find this testimony persuasive. Instead, we credit the testimony of Dr. Amer on this point, who testifies that Ohran's overwrite map is designed to alleviate such a problem (Ex. 1011 ¶¶ 12, 14; see also Ex. 1003 ¶¶ 45–46 (describing the overwrite map)), and that preventing race conditions in computer systems is within the level of ordinary skill in the art (Ex. 1011 ¶ 15). Dr. Amer's testimony accounts for the disclosure of Ohran (e.g., the overwrite map) and the level of ordinary skill in the art, whereas we find Dr. Levy's testimony to be speculative and without adequate consideration of Ohran's map or the level of skill in the art.

*(4) Conclusion Regarding "Determining" /  
"Directing" During a Restore*

In view of the above, we determine that Petitioner has shown that Ohran's two-channel restoration system meets the "determining" and



“directing” steps because the first restoration channel operates “during” the operation of the second restoration channel, as required by the claims.

*c. Proposed Combination of Ohran and WinNT*

Petitioner asserts that, although Ohran does not state explicitly that the blocks it is restoring are “of a file,” that:

[a] person of ordinary skill in the art would have recognized that Ohran’s restoration process of data blocks needed by an application could also be used to restore data blocks of a file needed by an application since the file is composed of data blocks and files are commonly accessed by applications.

Pet. 24–25 (citing Ex. 1007 ¶¶ 58–59).

Patent Owner argues that the claimed invention requires file-level *and* block-level restoration, and that, because Ohran only describes block-level restoration, Petitioner’s proposed combination “would have required, at a minimum, a major overhaul of *Ohran’s* block-level mirroring systems” in order to “track what files are stored on the system.” PO Resp. 42–43. As we explain above in Section II.C.a, however, claims 1 and 20 do not require file-level knowledge or a file-level restoration. Accordingly, Patent Owner’s arguments are unpersuasive.

Moreover, Petitioner’s obviousness analysis states that it would have been obvious that the blocks in Ohran were part of files, such that when Ohran’s block-level restore process was running, the result is the restoration of files. Thus, the evidence Petitioner offers suggests that a person of ordinary skill in the art would understand that, in many instances, Ohran’s two-channel block-level restoration process will result in a restoration of a set of files. Considering this evidence, we are persuaded that it would have

been obvious to a person of ordinary skill in the art to operate Ohran's restoration process to restore a set of files.

#### *4. Conclusion Regarding Claims 1, 6, 20, and 24*

In view of the above, we are persuaded that Petitioner has demonstrated, by a preponderance of the evidence, that the subject matter of claims 1 and 20 would have been obvious in view of the teachings of Ohran and WinNT.

Claims 6 and 24 add limitations directed to the file server further comprising a file system and a driver. Petitioner explains that WinNT discloses file systems and drivers as claimed and how it would have been obvious to include these features in Ohran's system. Pet. 27–29; Ex. 1006, 3, 21, 33, 618, 621; Ex. 1007 ¶¶ 68–69. Patent Owner does not challenge explicitly the factual assertions by Petitioner. Reviewing the prior art and the relevant testimony of Dr. Amer, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 6 and 24 would have been obvious in view of the teachings of Ohran and WinNT.

#### *D. Obviousness of Claim 8 in View of Ohran, WinNT, and Curran*

Claim 8 depends from claim 1 and states that the system in claim 1 is a Storage Area Network (SAN) system. Petitioner asserts that Curran discloses a SAN restoring system. Pet. 29–31. Petitioner reasons that it would have been obvious to deploy Ohran as a SAN because Ohran already contemplates using multiple storage devices, and simply re-deploying them in the form of a SAN is a substitution of one known element for another. Pet. 30 (citing Ex. 1007 ¶ 70). Patent Owner does not challenge explicitly

either the factual assertions or the rationale offered by Petitioner in this obviousness ground. Reviewing the prior art and the relevant testimony of Dr. Amer, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 8 would have been obvious in view of the teachings of Ohran, WinNT, and Curran.

### III. MOTION TO AMEND

Patent Owner's Motion to Amend is contingent upon a determination that claims 1 and/or 20 are unpatentable. Mot. Amend 1. We now consider the Motion because we determined that those claims are unpatentable in Section II.

Patent Owner in its Motion to Amend bears the burden of proof to establish it is entitled to the relief requested. 37 C.F.R. § 42.20(c). Although a patent owner's discussion does not have to be exhaustive, we consistently have reminded patent owners that, to meet their burden of proof, they must discuss the features added to the claim. *Toyota Motor Corp. v. American Vehicular Sciences LLC*, IPR2013-00419, slip op. at 4–5 (Paper 32) (PTAB March 7, 2014); *Idle Free Systems, Inc. v. Bergstrom, Inc.*, IPR2012-00027, slip op. at 6–8 (Paper 26) (PTAB June 11, 2013). This is because exploring the differences between the scope and content of the prior art (represented by the claim found unpatentable<sup>7</sup>) and the claimed invention (represented by the proposed substitute claim) is fundamental to any obviousness analysis, and thus, fundamental to any motion to amend. *See*

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<sup>7</sup> We only reach a contingent Motion to Amend if a claim is shown to be unpatentable, i.e., within the level of ordinary skill of the art.

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*Graham v. John Deere Co.*, 383 US 1, 17 (1966). For example, the motion should discuss, to the extent Patent Owner is aware, “whether the feature was previously known anywhere, in whatever setting, and whether or not the feature was known in combination with any of the other elements in the claim.” *Toyota*, IPR2013-00419, Paper 32 at 4.

Patent Owner offers no discussion of whether the newly added features were known in the art. “A mere conclusory statement by counsel, in the motion to amend, to the effect that one or more added features are not described in any prior art, and would not have been suggested or rendered obvious by prior art, is on its face inadequate.” *Idle Free Sys. Inc.*, IPR2012-00027, Paper 26 at 8. Here, Patent Owner provides one sentence that states that the newly added feature *in combination with other known features* was not in the prior art:

None of these prior art systems disclose any restoration process that restores a particular subset of files and, during the restore, determines whether a requested file is in this set of files before checking whether needed blocks in the file have been restored.

Mot. Amend 14.

None of these prior art systems disclose any mechanisms for a restore process that passes various information back and forth between a restore application and a file server prior to starting a restore of a set of files and, during this file restoration provides on-demand restorations of requested blocks by restoring them ahead of a standard order in which the blocks that make up the files are being restored.

*Id.* at 14–15.

Patent Owner's declarant, Dr. Levy, makes the same type of assertion—that the prior art does not describe something having many of the claimed features in combination. Ex. 2010 ¶¶ 92, 95. Patent Owner and its declarant do not discuss whether the *newly added features* were known (in the art or otherwise). Accordingly, Patent Owner has failed to meet its burden of showing that it is entitled to an award of a patent on a system having those features.

In view of the above, Patent Owner's Motion to Amend is denied.

#### IV. CONCLUSION

- A. Petitioner has shown by a preponderance of the evidence that claims 1, 6, 20, and 24 of the '527 patent are obvious in view of Ohran and WinNT.
- B. Petitioner has shown by a preponderance of the evidence that claim 8 of the '527 patent is obvious in view of Ohran, WinNT, and Curran.
- C. Patent Owner has not met its burden of proof in its Motion to Amend.

#### V. ORDER

In view of the foregoing, it is hereby:

ORDERED that claims 1, 6, 8, 20, and 24 of U.S. Patent No. 7,024,527 B1 are unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Amend is denied; and

FURTHER ORDERED that this is a final written decision and that parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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