

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZERTO, INC.
Petitioner

v.

EMC ISRAEL DEVELOPMENT CENTER, LTD.
Patent Owner

Case IPR2013-00458
U.S. Patent No. 7,577,867 B2

Before KARL D. EASTHOM, KRISTEN L. DROESCH, and
MICHAEL R. ZECHER, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Zerto, Inc. (“Petitioner”) filed a petition (“Pet.”) requesting *inter partes* review of claims 9-13, 16, 17, and 33-38 of U.S. Patent No. 7,577,867 B2 (“the ’867 patent”). Paper 1. EMC Israel Development Center, Ltd. (“Patent Owner”) timely filed a preliminary response (“Prelim. Resp.”). Paper 10. We have jurisdiction under 35 U.S.C. § 314.

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides:

THRESHOLD—The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

For the reasons set forth below, we conclude that the information presented in the petition does not establish that there is a reasonable likelihood that Petitioner will prevail in challenging claims 9-13, 16, 17, and 33-38 of the ’867 patent as unpatentable. We hereby deny the petition.

A. *Related Matters*

The parties indicate that the ’867 patent was asserted in *EMC Corporation and EMC Israel Development Center, Ltd. v. Zerto, Inc.*, Case No. 1:12-CV-00956, which was filed in the United States District Court for the District of Delaware. Pet. 1; *see* Paper 9.

B. The Invention of the '867 Patent (Ex. 1001)

The '867 patent application was filed on February 17, 2006, and issued as a patent on August 18, 2009. The invention of the '867 patent generally relates to data protection and disaster recovery and, in particular, to tracking and managing storage systems with dynamically changing data. Ex. 1001, 1:6-8. The '867 patent discloses that conventional data protection systems, such as large data enterprise systems, are complex and massive configurations that provide protection for the multiple production sites by distributing data replication over multiple protection systems. Ex. 1001, 1:50-53. While each individual protection system restores the data units that it replicates, often the need arises to restore a consistent image across all the data enterprise data units. Ex. 1001, 1:53-56. According to the '867 patent, unless a single data protection system replicates all the enterprise data, currently no solution exists for restoring a consistent image across the enterprise without having to shut down each production site. Ex. 1001, 1:59-62.

The invention of the '867 patent addresses this problem by performing data processing across more than one node of a storage area network ("SAN"). Ex. 1001, 1:66-2:2. The SAN includes a plurality of consistency groups, each of which is a logical representation of the following components: (i) at least one logical storage unit ("LU") at a production site; (ii) at least one host device at the production site that accesses the LUs; (iii) a data protection appliance ("DPA") at the production site; and (iv) a

replication site including LUs, host devices, and DPAs. Ex. 1001, 2:2-8. The DPAs are counterparts to those components at the production site and are used to replicate the production site data. Ex. 1001, 2:8-10.

The disclosed “invention uses tags to mark specific points in time in a journal, and the replication DPA of each consistency group can rollback the production site LUs to the states they were in at the time of a tag.” Ex. 1001, 2:14-17. By rendering the host devices in the consistency groups inactive or disabled during a common time interval, the consistency groups may be cross tagged in an overall consistent manner. Ex. 1001, 2:22-26. A consistent image across all consistency groups then may be recovered by rolling back the source storage systems to their states “at the times of the cross tags.” Ex. 1001, 2:26-28.

Figure 1 of the '867 patent illustrates data protection system 100 (Ex. 1001, 6:37-39; 7:43-45) and is reproduced below:

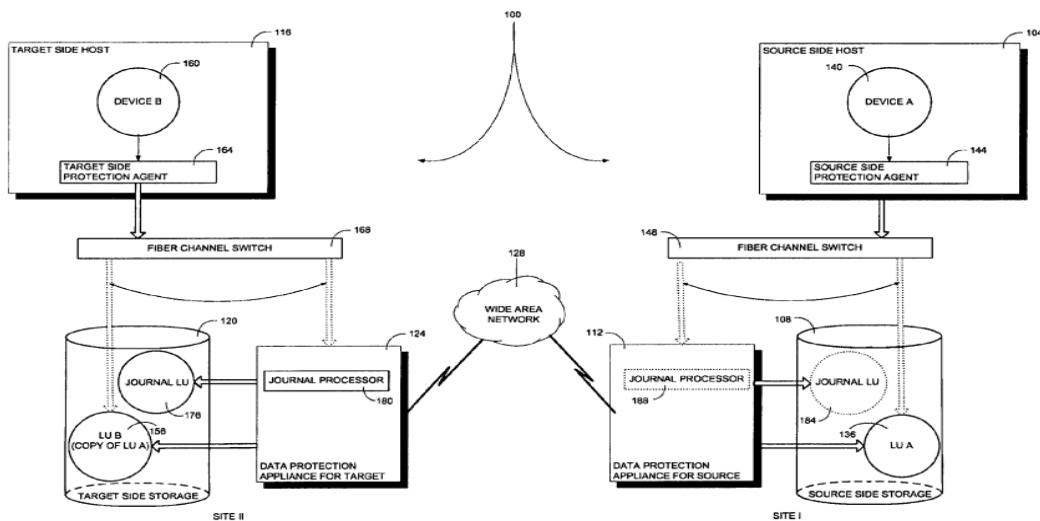


FIG. 1

As shown in Figure 1 of the '867 patent, data protection system 100 includes two sites: (1) Site I, which is a production or source site; and (2) Site II, which is the backup or target site. Ex. 1001, 7:45-50. The source and target sites communicate via wide-area network ("WAN") 128. Ex. 1001, 8:7-9. Each site of data protection system 100 includes three major components coupled via a SAN: (i) a storage system; (ii) a host computer; and (3) a DPA. Ex. 1001, 8:10-14. The source site includes source host computer 104, source storage system 108, and source DPA 112. Ex. 1001, 8:14-16. Similarly, the target site includes target host computer 116, target storage system 120, and target DPA 124. Ex. 1001, 8:17-18.

In one embodiment, storage system 108 includes LU 136, designated as LU A, and storage system 120 includes LU 156, designated as LU B. Ex. 1001, 8:45-48. LU B preferably is used for replicating LU A. Ex. 1001, 8:49-50. With respect to LU A, storage system 120 serves as backup for source storage system 108. Ex. 1001, 8:52-54. Source DPA 112 and target DPA 124 perform various data protection services, such as data replication of a storage system, and journaling of input/output ("I/O") requests issued by a host computer to source side storage system data. Ex. 1001, 9:27-31. Target DPA 112 also enables rollback of data to an earlier point in time, and processing of rolled back data at the target site. Ex. 1001, 9:32-34.

C. Illustrative Claims

Claims 9 and 33 are independent claims. Claims 10-13, 16, and 17 directly or indirectly depend from independent claim 9, and claims 34-38 directly or indirectly depend from independent claim 33. Independent

claims 9 and 33 are illustrative of the invention of the '867 patent and are reproduced below:

9. A method for consistent data recovery, comprising issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group **G1**, . . . , **Gn**,

(r1) to stop sending acknowledgement of I/O requests to host device agents of **G1**, . . . , **Gn**, and

(r2) to tag **G1**, . . . , **Gn**, wherein a tag is used to mark a consistency group at a specific point in time, wherein the consistency groups **G1**, . . . , **Gn** represent logical parts of a storage area network, and each consistency group **G1**, . . . , **Gn** represents a DPA, at least one device, at least one LU and at least one replication facility, the replication facility being operable to restore the at least one LU to its former state at the time of the tag, and wherein each host device is associated with a host device controller that is operable to:

forward the host device I/O requests;

halt such forwarding when it does not receive an acknowledgement of a current I/O request from a DPA; and

resume such forwarding after it does receive an acknowledgement of the current I/O request from the DPA.

Ex. 1001, 26:40-61.

33. A method for data protection, comprising issuing requests from a data protection appliance (DPA) manager, to at least one DPA within at least one consistency group, **G1**, . . . , **Gn**, the request comprising:

(r1) to cause host device controllers of **G1**, . . . , **Gn** to halt processing I/O requests; and

(r2) to initiate tags in **G1**, . . . , **Gn**, wherein a tag is used to mark a consistency group at a specific point in time, wherein the consistency groups **G1**, . . . , **Gn** represent logical parts of a network, and each consistency group **G1**, . . . , **Gn**

represents a DPA and at least one host device, and wherein each host device is associated with a host device controller that processes the host device I/O requests, and that can halt such processing and that can resume such processing.

Ex. 1001, 29:9-22.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Chen	US 7,464,126 B2	Dec. 9, 2008	Ex. 1003
		(filed July 21, 2005)	

CATHY WARRICK ET AL., IBM TOTALSTORAGE ENTERPRISE STORAGE SERVER: IMPLEMENTING ESS COPY SERVICES IN OPEN ENVIRONMENTS (5th ed., IBM 2004) (Ex. 1002) (“Warrick”).

Kashya KBX4000: Administrator’s Guide, Kashya Inc. (Aug. 4, 2004)¹ (Ex. 1004) (“Kashya”).

E. Alleged Grounds of Unpatentability

Petitioner challenges claims 9-13, 16, 17, and 33-38 of the ’867 patent based on the alleged grounds of unpatentability set forth in the table below.

¹ Kashya has a copyright date of 2013.

Reference(s)	Basis	Claims Challenged
Warrick	§ 102(b)	9-13, 16, 17, and 33-38
Chen	§ 102(e)	33-38
Warrick and Chen	§ 103(a)	9-13, 16, 17, and 33-38
Kashya	§ 102(b)	9-13, 16, 17, and 33-38
Kashya and Warrick	§ 103(a)	9-13, 16, 17, and 33-38
Kashya and Chen	§ 103(a)	9-13, 16, 17, and 33-38

II. CLAIM CONSTRUCTION

Consistent with the statute and legislative history of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (2011), the Board construes claims by applying the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.100(b); *see also* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). There is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). However, a “claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” *Id.* “Although an inventor is indeed free to define the specific terms used to describe his or her invention, this must be done with reasonable clarity, deliberateness, and precision.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes claim constructions for two claim phrases recited in the ’867 patent. We will address each claim phrase in turn.

A. “*Replication facility*” (claims 9 and 16)

Petitioner contends that the claim phrase “replication facility” should be construed as “a facility where replicated data from the at least one logical unit (LU) is stored, and which may be located in a remote site or at the same location as the at least one LU.” Pet. 8. To support its claim construction, Petitioner directs us to various disclosures in the specification of the ’867 patent. *Id.* (citing Ex. 1001, 5:6-10, 7:43-54, 8:1-6.) Patent Owner does not challenge Petitioner’s proposed claim construction.

Upon reviewing the specification of the ’867 patent, we do not find an explicit definition for the claim phrase “replication facility.” Therefore, we refer to its 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). For purposes of this decision, we adopt Petitioner’s claim construction because it is consistent with the ordinary and customary meaning of “replication facility” as would be understood by one with ordinary skill in the art in light of the ’867 patent.

B. “*Host device controller*” (Claims 9-11, 13, 17, 33-36, and 38)

Petitioner contends that the claim phrase “host device controller” should be construed as “a program or device that handles I/O requests for a host and can be in the host or separate from the host.” Pet. 8-9. To support its claim construction, Petitioner directs us to various disclosures in the specification of the ’867 patent. *Id.* (citing Ex. 1001, 10:6-14, 51-56.) Patent Owner does not challenge Petitioner’s proposed claim construction.

Upon reviewing the specification of the '867 patent, we do not find an explicit definition for the claim phrase “host device controller.” Therefore, we refer to its ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *Translogic*, 504 F.3d at 1257. For purposes of this decision, we adopt Petitioner’s claim construction because it is consistent with the ordinary and customary meaning of “host device controller” as it would be understood by one with ordinary skill in the art in light of the '867 patent.

C. Remaining Claim Terms or Phrases

Petitioner admits that it must look to the specification of the '867 patent to determine whether it provides an explicit definition for claim terms or phrases, yet contends that the remaining claim terms or phrases “are presumed to take on their broadest reasonable ordinary meaning.” Pet. 7. In response, Patent Owner contends that Petitioner fails to account for the explicit definitions of certain claim terms or phrases set forth in the specification of the '867 patent. Prelim. Resp. 10-11. In particular, Patent Owner identifies explicit definitions for two claim terms or phrases. For purposes of this decision, because the claim constructions for the claim terms or phrases identified by Patent Owner are central to the dispute, we will address each claim term or phrase in turn.

1. “DPA” (claims 9-13, 16, 33, 34, 37, and 38)

Patent Owner contends that the specification of the '867 patent explicitly defines the claim term “DPA” as “a computer or a cluster of computers that serve as a data protection appliance, responsible for data

protection services including[,] *inter alia*[,] data replication of a storage system, and **journaling** of I/O requests issued by a host computer to the storage system.” Prelim. Resp. 11 (citing Ex. 1001, 5:18-22 (first emphasis added)). Patent Owner further argues that the definition of “DPA” relies upon the definition of “journal,” which is defined explicitly in the specification of the ’867 patent as “a record of write transactions issued to a storage system; used to maintain a duplicate storage system, and to rollback the duplicate storage system to a previous point in time.” *Id.* (citing Ex. 1001, 5:32-35). Based on that definition of “journal,” Patent Owner proposes that the claim term “DPA” should be construed as follows:

a computer or a cluster of computers that serve as a data protection appliance, responsible for data protection services including[,] *inter alia*[,] data replication of a storage system, and **journaling** of I/O requests issued by a host computer to the storage system by storing the I/O requests in a **journal**, which is a record of write transactions used to maintain and rollback a duplicate storage system to a previous point in time.

Id. at 11-12 (first emphasis added).

We note that the ’867 patent states that “[t]he following definitions are employed throughout the specification and the claims,” and then defines, *inter alia*, “DPAs” and “JOURNAL,” as set forth by Patent Owner according to the discussion above. Ex. 1001, 5:6-7, 18-22, 32-35. For purposes of this decision, we agree with the claim construction proposed by Patent Owner because the specification of the ’867 patent clearly and unambiguously defines the claim term “DPA,” and that definition includes “journaling.” *See Paulsen*, 30 F.3d at 1480.

2. “Consistency group” (claims 9, 10, 16, 33, and 34)

Patent Owner contends that the specification of the ’867 patent explicitly defines the claim phrase “consistency group” as follows:

a basic logical entity for which data protection services, such as replication, tagging and **journaling**, are provided by a **DPA**; a **consistency group** includes[:] (i) at least one logical storage unit for a source side storage system that is to be protected, (ii) corresponding logical units for a backup site, and (iii) at least one logical unit used for **journaling** at the backup site.

Prelim. Resp. 12 (quoting Ex. 1001, 5:11-17 (emphasis by Patent Owner)).

Patent Owner further argues that the definition of “consistency group” relies upon the definition of “journal” set forth above, and, therefore, the claim phrase “consistency group” should be construed as follows:

a basic logical entity for which data protection services, such as replication, tagging, and **journaling**, are provided by a **DPA**; a **consistency group** includes[:] (i) at least one logical storage unit for a source side storage system that is to be protected, (ii) corresponding logical units for a backup site, and (iii) at least one logical unit used for **journaling** at the backup site by storing a **journal**, which is a record of write transactions used to maintain and rollback a duplicate storage system to a previous point in time.

Id.

We note that the ’867 patent states that “[t]he following definitions are employed throughout the specification and the claims,” and then defines, *inter alia*, “CONSISTENCY GROUP” as set forth by Patent Owner according to the discussion above. Ex. 1001, 5:6-7, 11-17. For purposes of this decision, we agree with the claim construction proposed by Patent

Owner because the specification of the '867 patent clearly and unambiguously defines the claim phrase “consistency group,” and that definition includes “at least one logical unit used for journaling at the backup site.” *See Paulsen*, 30 F.3d at 1480.

III. ANALYSIS

A. 35 U.S.C. §§ 102 (b) and 103(a) Grounds of Unpatentability Based in Whole or in Part on Warrick

Petitioner contends that: (1) claims 9-13, 16, 17, and 33-38 are anticipated under 35 U.S.C. § 102(b) by Warrick; and (2) claims 9-13, 16, 17, and 33-38 are unpatentable under 35 U.S.C. § 103(a) over the combination of Warrick and Chen. Pet. 9-29, 37-40. In particular, Petitioner relies upon claim charts, as well as the Declaration of Dr. Ahmed Amer (Ex. 1005), to explain how Warrick, either standing alone or in combination with Chen, allegedly discloses the claimed subject matter. *Id.* We have considered Petitioner’s analysis and supporting evidence, as well as Patent Owner’s arguments, but are not persuaded that Warrick discloses “issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G1, . . . , Gn,” as recited in independent claims 9 and 33.

We begin our analysis with a general discussion of Warrick, the position taken by Petitioner explaining how Warrick allegedly discloses the aforementioned claim limitations recited in independent claims 9 and 33, and then we turn to the arguments presented by Patent Owner that are

directed towards whether Warrick accounts properly for those claim limitations.

1. Warrick (Ex. 1002)

Warrick is a guide that describes the Copy Service functions available with the International Business Machine (“IBM”) TotalStorage Enterprise Storage Server (“ESS”). Ex. 1002, p. 29.² In particular, the Copy Service functions provided by ESS provide “replication of mission critical data, point-in-time and incremental FlashCopy, and dynamic synchronous and asynchronous mirroring to a remote site.” Ex. 1002, p. 36. Warrick discloses three main features of the ESS Copy Service functions: (1) Peer-to-Peer Remote Copy (“PPRC”); (2) Peer-to-Peer Remote Copy Extended Distance (“PPRC-XD”); and (3) FlashCopy. Ex. 1002, p. 44.

Warrick discloses that the FlashCopy feature makes a single point-in-time copy of an ESS logical volume, or LUN, as it existed at a specific point-in-time. Ex. 1002, pp. 46, 70. Figure 3-6 of Warrick, which is reproduced below, illustrates an offline database backup scenario that includes copying data from copy (A) to copy (B). Ex. 1002, p. 86.

² All references to the page numbers in Warrick refer to the page numbers located in the bottom, middle of each page.

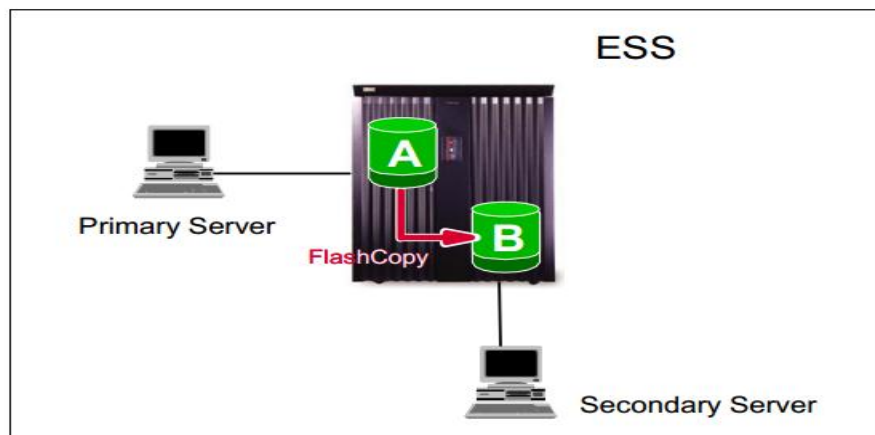


Figure 3-6 Database Backup scenario

As shown in Figure 3-6 of Warrick, a FlashCopy pair is established by allowing a prospective user to select a source volume, i.e., Volume A, and a target volume, i.e., Volume B. Ex. 1002, p. 260. A FlashCopy tasks and options feature allows the user to select a number of additional options. Ex.1002, p. 261. One of the options available for selection is the option to freeze write activity to each local subsystem (“LSS”) containing FlashCopy source volumes that are in a Consistency Group. Ex. 1002, p. 262, 285-88. According to Warrick, “[a] Consistency Group is a group of volumes participating in FlashCopy relationships that need to be kept in a consistent state to ensure data integrity.” Ex. 1002, p. 262. Once the desired FlashCopy options are selected, the user runs the FlashCopy, which, in turn, establishes a FlashCopy relationship between the source and target volume, i.e., between Volume A and Volume B illustrated in Figure 3-6 of Warrick. Ex. 1002, p. 263-64.

Warrick discloses that once the FlashCopy is completed, the data may be copied back to the source volume using either the standard operating

system or performing a reverse FlashCopy. Ex. 1002, p. 85. A reverse FlashCopy entails copying data from the original target volume back to the source volume. *Id.* In this case, the data would be copied from Volume B back to Volume A.

2. Petitioner's Contentions

Petitioner's take the position that Warrick discloses "issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G1, . . . , Gn," as recited in independent claims 9 and 33. Pet. 11-12, 22-23. In particular, Petitioner contends that each ESS in Warrick constitutes the claimed "DPA," and the workstation, which issues requests to each ESS using the web user interface to specify tasks to be performed by each ESS, constitutes the claimed "DPA manager." *Id.* at 12, 23 (citing Ex. 1002, pp. 2, 13-14, and 48). Petitioner also contends that the tasks performed by Warrick's Consistency Groups can be created using the web user interface and, therefore, Warrick discloses the claimed "at least one consistency group." *Id.* (citing Ex. 1002, pp. 251-54; Ex. 1005 ¶¶ 35, 91). We note that paragraphs 35 and 91 in the Declaration of Dr. Amer merely repeat the positions taken by Petitioner in its claim chart.

3. Patent Owner's Contentions

In response, Patent Owner contends that Warrick does not disclose "issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G1, . . . , Gn," as recited in independent claims 9 and 33. Prelim. Resp. 15-16. Patent Owner

presents the following arguments: (1) the petition fails to show that Warrick discloses “at least one DPA,” as defined and claimed; (2) the petition fails to show that Warrick discloses “at least one consistency group,” as defined and claimed; and (3) Warrick does not, in fact, disclose a “DPA” or “consistency group,” as defined and claimed. *Id.* at 16-20. For the reasons set forth below, we agree with Patent Owner that Warrick does not disclose “at least once consistency group,” as claimed.

4. Analysis

As previously discussed, the claim term “consistency group” requires the following features: “(i) at least one logical storage unit for a source side storage system that is to be protected, (ii) corresponding logical units for a backup site, and (iii) at least one logical unit used for **journaling** at the backup site.” While Warrick discloses a Consistency Group, that group has a different meaning in the context of Warrick than a “consistency group,” as defined in the specification of the ’867 patent, and recited in independent claims 9 and 33. According to Warrick, its “Consistency Group is a group of volumes participating in FlashCopy relationships that need to be kept in a consistent state to ensure data integrity.” Ex. 1002, p. 262. At best, the Consistency Group disclosed in Warrick amounts to multiple volumes or logical storage units (“LUs”) participating in FlashCopy relationships. However, Petitioner does not explain sufficiently, nor can we find, how Warrick discloses a LU located at a source site and a corresponding LU located at a backup site, much less whether there is another LU that is used for journaling at the backup site. In other words, Petitioner does not direct

us to a specific disclosure in Warrick that indicates that its Consistency Group includes at least one LU that is used to rollback a duplicate LU to a previous point in time, as required by the claimed “consistency group” that includes “at least one logical unit used for journaling at the backup site.”

In addition, although Warrick discloses that its Consistency Group may be capable of being “used with a journaled file system” (Ex. 1002, p. 74), Petitioner does not direct us to a disclosure in Warrick that indicates its Consistency Group actually includes a LU that is used for journaling at the backup site. Finding the required LU and journaling in Warrick would require us to resort to speculation or unfounded assumptions. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967). We will not resort to such speculation or assumptions to cure the deficiencies in the factual basis in order to support Petitioner’s alleged grounds of unpatentability based in whole or in part on Warrick.

Based on the record before us, because Petitioner does not present sufficient evidence to support a finding that Warrick discloses “at least one consistency group,” as recited in independent claims 9 and 33, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertion that these independent claims are anticipated under 35 U.S.C. § 102(b) by Warrick. Chen does not remedy the above-noted deficiencies in Warrick. As a result, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertion that independent claims 9 and 33 are unpatentable under 35 U.S.C. § 103(a) over the combination of Warrick and Chen. Claims 10-13, 16, 17, and 34-38 directly or indirectly depend from

independent claims 9 and 33. For the same reasons discussed above with respect to independent claims 9 and 33, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertions that dependent claims 10-13, 16, 17, and 34-38 are: (1) anticipated under 35 U.S.C. § 102(b) by Warrick; and (2) unpatentable under 35 U.S.C. § 103(a) over the combination of Warrick and Chen.

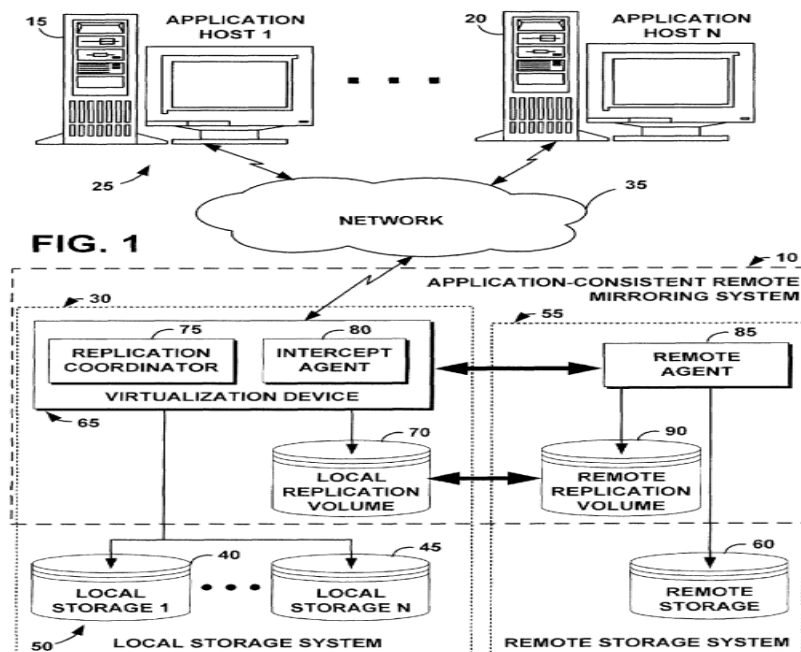
*B. 35 U.S.C. § 102(e) Ground of Unpatentability
Based on Chen*

Petitioner contends that claims 33-38 are anticipated under 35 U.S.C. § 102(e) by Chen. Pet. 29-37. In particular, Petitioner relies upon claim charts, as well as the Declaration of Dr. Amer (Ex. 1005), to explain how Chen allegedly discloses the claimed subject matter *Id.* We have considered Petitioner's analysis and supporting evidence, as well as Patent Owner's arguments, but are not persuaded that Chen discloses "issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G₁, . . . , G_n," as recited in independent claim 33.

We begin our analysis with a general discussion of Chen, the position taken by Petitioner explaining how Chen allegedly discloses the aforementioned claim limitation recited in independent claim 33, and then we turn to the arguments presented by Patent Owner that are directed towards whether Chen discloses that claim limitation.

1. Chen (Ex. 1003)

Chen generally relates to data protection and backup, and, in particular, to protecting data through remote mirroring in an integrated system that includes heterogeneous hosts and storage devices. Ex. 1003, 1:8-12. Figure 1 of Chen, which is reproduced below, illustrates the operating environment in which a system and an associated method for creating an application-consistent remote copy of data using remote mirroring may be used. Ex. 1003, 3:27-29; 3:66-4:3.



As shown in Figure 1 of Chen, application-consistent remote mirroring system 10 includes local storage system 30 and remote storage system 55. Ex. 1003, 4:35-36. Local storage system 30 includes a virtualization device 65 and local replication volume 70. Ex. 1003, 4:36-38. Virtualization device 65 includes replication coordinator 75 and intercept

agent 80. Ex. 1003, 4:38-39. Replication coordinator 75 is responsible for coordinating among application hosts 25, local storage devices 50, and remote storage device 60 to generate a consistency point. Ex. 1003, 4:39-42. Remote storage system 55 includes remote agent 85 and remote replication volume 90, as well as remote storage device 60. Ex. 1003, 4:22-25, 43-44. According to Chen, system 10 replicates data stored in local storage devices 50 to remote storage system 55. Ex. 1003, 4:21-22.

Chen discloses that during an initial system setup time, a registration phase informs replication coordinator 75 that the application hosts, e.g., application hosts 1, 15 and application hosts N, 20, are included in the generation of a consistency point. Ex. 1003, 4:49-52. Application hosts 25, included in the generation of a consistency point, are referred to as an application-consistent host group. Ex. 1003, 4:52-53. Chen also discloses that replication coordinator 75 may communicate periodically with application hosts 25 to declare an application consistency point. Ex. 1003, 6:54-56.

Chen discloses that system 10 provides application consistency using the following protocol support: (1) RegisterConsistencyGroup; (2) PrepareConsistencyPoint; and (3) CompleteConsistencyPoint. Ex. 1003, 8:7-9. When replication sessions are initiated, all the application components that belong to an application-consistent host group register with replication coordinator 75 using the RegisterConsistencyGroup protocol. Ex. 1003, 8:10-13. The RegisterConsistencyGroup protocol enables

replication coordinator 75 to know which application components are involved in an application-consistent host group. Ex. 1003, 8:13-16.

In one embodiment, Chen discloses that system 10 includes an on-demand initiation of a consistency point declaration. Ex. 1003, 9:65-66. The consistency point is triggered at the request of remote agent 85. Ex.1003, 9:66-10:1. When replication coordinator 75 receives such a request from remote agent 85, it coordinates with application hosts 25 to declare a consistency point. Ex. 1003, 10:6-9. According to Chen, this embodiment maximizes system capability and minimizes the performance impact on application hosts 25. Ex. 1003, 10:9-11.

2. *Petitioner's Contentions*

Petitioner takes the position that Chen discloses “issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G1, . . . , Gn,” as recited in independent claims 9 and 33. Pet. 31-32. In particular, Petitioner contends that Chen’s virtualization device 65, which includes replication coordinator 75 and intercept agent 80, constitutes the claimed “DPA.” *Id.* at 31. Petitioner further contends that, because Chen’s virtualization device 65 is within a consistency group, Chen discloses the claimed “at least one consistency group.” *Id.* (citing Ex. 1003, 4:49-53; Ex. 1005 ¶ 122). Petitioner also argues that Chen’s replication coordinator 75 manages a consistency group by allowing application hosts 25 to register for the consistency group, and communicates with the application hosts 25 to declare consistency points. *Id.* at 31-32 (citing Ex. 1003, 4:49-53, 6:54-58;

Ex. 1005 ¶ 122). We note that paragraph 122 in the Declaration of Dr. Amer merely repeats the positions taken by Petitioner in its claim chart.

3. Patent Owner's Contentions

In response, Patent Owner contends that the petition fails to demonstrate a reasonable likelihood of showing that Chen discloses “issuing requests from a data protection application (DPA) manager to at least one DPA within at least one consistency group G1, . . . , Gn,” as recited in independent claim 33. Prelim. Resp. 25. Patent Owner presents the following arguments: (1) the petition fails to show that Chen discloses “at least one DPA,” as defined and claimed; (2) the petition fails to show that Chen discloses “at least one consistency group,” as defined and claimed; and (3) Chen does not, in fact, disclose a “DPA” or “consistency group,” as defined and claimed. *Id.* at 26-29. For the reasons set forth below, we agree with Patent Owner that Warrick does not disclose “at least once consistency group,” as claimed.

4. Analysis

As previously discussed, the claim term “consistency group” requires the following features: “(i) at least one logical storage unit for a source side storage system that is to be protected, (ii) corresponding logical units for a backup site, and (iii) at least one logical unit used for **journaling** at the backup site.” Although Chen discloses an application-consistent host group, that group does not constitute a “consistency group,” as defined in the specification of the '867 patent, and recited in independent claim 33. Chen discloses that application hosts 25 that generate or declare a consistency

point are referred to as an application-consistent host group. Ex. 1003, 4:49-53, 6:54-58, fig. 1. As shown in Figure 1 of Chen, reproduced previously, application hosts 25 are merely hosts 15 and 20 that access local storage system 30 via network 35. Ex. 1003, 4:12-15. Chen's application-consistent host group does not include at least one LU located at a source site and a corresponding LU located at a backup site, much less at least one LU that is used for journaling at the backup site, as required by the claim term "consistency group." In other words, Petitioner does not direct us to a specific disclosure in Chen that indicates that the application-consistent host group includes at least one LU that is used to rollback a duplicate LU to a previous point in time, as required by the claimed "consistency group" that includes "at least one logical unit used for journaling at the backup site."

Based on the record before us, because Petitioner does not present sufficient evidence to support a finding that Chen discloses "at least one consistency group," as claimed, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertion that independent claim 33 is anticipated under 35 U.S.C. § 102(e) by Chen. Claims 34-38 directly or indirectly depend from claim 33. For the same reasons discussed above with respect to independent claim 33, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertion that dependent claims 34-38 are anticipated under 35 U.S.C. § 102(e) by Chen.

*C. 35 U.S.C. §§ 102 (b) and 103(a) Grounds of Unpatentability
Based in Whole or in Part on Kashya*

Petitioner contends that: (1) claims 9-13, 16, 17, and 33-38 are anticipated under 35 U.S.C. § 102(b) by Kashya; (2) claims 9-13, 16, 17, and 33-38 are unpatentable under 35 U.S.C. § 103(a) over the combination of Kashya and Warrick; and (3) claims 9-13, 16, 17, and 33-38 are unpatentable under 35 U.S.C. § 103(a) over the combination of Kashya and Chen. Pet. 40-55. In particular, Petitioner relies upon claim charts, as well as the Declaration of Dr. Amer (Ex. 1005), to explain how Kashya, either alone or combination with other cited prior art references, allegedly discloses the claimed subject matter. *Id.* We have considered Petitioner's analysis and supporting evidence, as well as Patent Owner's arguments, but are not persuaded that Kashya qualifies as a prior art printed publication.

We begin our analysis with a brief discussion of Kashya, the position taken by Petitioner explaining how Kashya qualifies as a prior art printed publication under either 35 U.S.C. §§ 102(a) or (b), and then we turn to the arguments presented by Patent Owner that are directed towards whether Petitioner has established sufficiently that Kashya is a prior art printed publication.

1. Kashya

Kashya is a comprehensive guide for administrators of the Kashya KBX4000 system. Ex. 1004, p. 9. The title page of Kashya shows a date of August 4, 2004. Ex. 1004, p. 1. Kashya has a copyright date of 2013. Ex. 1004, p. 2. Kashya further discloses that “[a]ll information contained in

or disclosed by this document is considered confidential and proprietary by Kashya Inc.” *Id.* Kashya includes edits shown in track changes on a number of pages throughout the document. Ex. 1004, pp. 56, 71, 72, 76-78, 84, and 101.

2. Petitioner’s Contentions

Petitioner contends that Kashya bears a publication date of August 4, 2004, which is more than a year before the ’867 patent was filed on February 17, 2006. Pet. 40. Therefore, Petitioner asserts that Kashya qualifies as a prior art printed publication under either 35 U.S.C. § 102(a) or (b). *Id.*

3. Patent Owner’s Contentions

Patent Owner contends that Petitioner has not established sufficiently that Kashya qualifies as a prior art printed publication under 35 U.S.C. § 102. Prelim. Resp. 33. Patent Owner presents the following arguments: (1) Kashya contains a notice of its “confidential and proprietary” status; (2) Kashya has a copyright date of 2013; and (3) Kashya includes edits shown in track changes of the type that appear in working drafts of electronic documents. *Id.* at 33-34. For the reasons set forth below, we agree with Patent Owner that Petitioner has not established sufficiently that Kashya qualifies as a prior art printed publication.

4. Analysis

When determining whether to deny a ground of unpatentability on the basis that a reference is not a prior art printed publication, we decide each case on the basis of its own facts. In particular, the determination of whether a given reference qualifies as a prior art printed publication involves a case-

by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004).

An *inter partes* review may be requested only on the basis of prior art consisting of patents or printed publications. 35 U.S.C. § 311(b). While Petitioner asserts that Kashya has a publication date of August 4, 2004, (Ex. 1004, p. 1), Petitioner does not address the other evidence in Kashya that indicates it has not been disseminated publicly and, therefore, should not be accorded a publication date of August 4, 2004. For instance, the “confidential and proprietary” notice in Kashya (Ex. 1004, p. 2) suggests that it was not generally available. *See Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 936-37 (Fed. Cir. 1990) (holding that documents containing the legend “Reproduction or further dissemination is not authorized . . . not for public release” were not printed publications because there was not sufficient evidence indicating that anyone could access the documents by exercise of reasonable diligence). Petitioner does not provide credible or sufficient evidence that shows otherwise. Moreover, Petitioner does not reconcile how Kashya has an alleged publication date of August 4, 2004 (Ex. 1004, p. 1), yet also has a copyright date of 2013 (Ex. 1004, p. 2). Finally, the track changes in Kashya (Ex. 1004, pp. 56, 71, 72, 76-78, 84, and 101) suggest a working draft that is not yet ready for public dissemination.

Based on the record before us, because Petitioner does not provide a reasonable explanation for the “confidential and proprietary” notice, the

inconsistent dates, or the track changes in Kashya, we are not persuaded that Petitioner has established sufficiently that Kashya qualifies as a prior art printed publication. Consequently, Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertions that: (1) claims 9-13, 16, 17, and 33-38 are anticipated under 35 U.S.C. § 102(b) by Kashya; (2) claims 9-13, 16, 17, and 33-38 are unpatentable under 35 U.S.C. § 103(a) over the combination of Kashya and Warrick; and (3) claims 9-13, 16, 17, and 33-38 are unpatentable under 35 U.S.C. § 103(a) over the combination of Kashya and Chen.

D. Assignor Estoppel

Patent Owner contends that the petition is barred by the equitable doctrine of assignor estoppel. Prelim. Resp. 49. Patent Owner's argument raises the following issues: (1) whether the equities of this case are appropriate for applying assignor estoppel; and (2) whether assignor estoppel should apply to an *inter partes* review. *Id.* at 49-56. The current situation does not require us to assess the merits of Patent Owner's argument because, as we discussed above, Petitioner has not established a reasonable likelihood of prevailing on its assertions that the alleged grounds of unpatentability proposed in the petition renders claims 9-13, 16, 17, and 33-38 unpatentable.

IV. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the petition does not establish that there is a reasonable likelihood that

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Petitioner would prevail in showing that claims 9-13, 16, 17, and 33-38 of the '867 patent are unpatentable.

V. ORDER

Accordingly, it is ORDERED that the petition for *inter partes* review is hereby denied, and no *inter partes* review will be instituted pursuant to 35 U.S.C. § 314(a) with respect claims 9-13, 16, 17, and 33-38 of the '867 patent on the alleged grounds of unpatentability proposed in the petition.

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