UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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COMMVAULT SYSTEMS, INC.,
Petitioner,

v.

REALTIME DATA LLC,
Patent Owner.
_____

Case IPR2017-02006
Patent 7,415,530 B2
_____

Before CHRISTOPHER L. CRUMBLEY, KEVIN C. TROCK, and
AMANDA F. WIEKER, *Administrative Patent Judges*.

CRUMBLEY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a) and 37 C.F.R. § 42.108

I. INTRODUCTION

Commvault Systems, Inc. filed a Petition requesting an *inter partes* review of claims 1–26 of U.S. Patent No. 7,415,530 B2 (Ex. 1001, "the '530 patent"). Paper 1, "Pet." Realtime Data, LLC, the assignee of the '530 patent, filed a Preliminary Response to the Petition. Paper 10, "Prelim. Resp."

Pursuant to 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and Preliminary Response shows "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." Taking into account the parties' arguments, we conclude that the information presented establishes that there is not a reasonable likelihood that Commvault will prevail in challenging claims 1–26 of the '530 patent as unpatentable. Accordingly, we decline to institute trial.

II. BACKGROUND

A. Related Matters Before the Office

Various claims of the '530 patent have been challenged in several petitions for *inter partes* review, including: *Oracle America, Inc. v. Realtime Data LLC*, IPR2016-00375 (institution denied); *Oracle America, Inc. v. Realtime Data LLC*, IPR2016-00376 (institution denied); *Dell, Inc. v. Realtime Data LLC d/b/a IXO*, IPR2016-00878 (petition dismissed on petitioner's motion); *Dell, Inc. v. Realtime Data LLC d/b/a IXO*, IPR2016-00972 (trial instituted and pending); *Oracle America, Inc. v. Realtime Data LLC*, IPR2016-01671 (motion for joinder with IPR2016-00972 granted); *Veritas Technologies, LLC v. Realtime Data LLC*, IPR2017-00365 (motion

for joinder with IPR2016-00972 granted); *NetApp Inc. v. Realtime Data LLC*, IPR2017-01195 (institution denied); *Rackspace US, Inc. v. Realtime Data LLC*, IPR2017-01627 (institution denied, settled while request for reconsideration pending). Pet. 3; *see also* Paper 5, 2–5 (listing all *inter partes* review petitions filed against patents owned by Patent Owner, including the '530 patent).

The '530 patent was reexamined by the Office in Application No. 95/001,927, and a reexamination certificate issued August 16, 2013, confirming claims 1, 2, 16–21, and 23 and adding new claims 24–26. Ex. 1002.

B. Related Matters Before District Courts

Commvault advises us that Realtime Data has asserted the '530 patent against Commvault in patent infringement lawsuits styled *Realtime Data LLC d/b/a IXO v. Commvault Systems, Inc., et al.*, Nos. 1:17-cv-00925 (D. Del., pending) and 6:17-cv-00123 (E.D. Tex., dismissed). Pet. 2 (citing Exs. 1003, 1008).

Commvault states that the '530 patent has been asserted by Realtime Data against other alleged infringers, identified below, in the U.S. District Court for the Eastern District of Texas:[1] MetroPCS Texas, LLC (No. 6:10-cv-00493, related case in S.D. Cal. (No. 3:12-cv-01048)), Actian Corp. (No. 6:15-cv-00463), BMC Software, Inc. (No. 6:15-cv-00464), Dropbox, Inc. (No. 6:15-cv-00465), EchoStar Corp. (No. 6:15-cv-00466), Oracle America, Inc. (No. 6:15-cv-00467), Riverbed Technology, Inc. (No. 6:15-cv-00468),

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[1] Related cases in other jurisdictions are identified in parentheticals.

SAP America, Inc. (No. 6:15-cv-00469), Teradata Corp. (No. 6:15-cv-00470, related cases in N.D. Cal. (No. 3:16-cv-01836) and C.D. Cal. (No. 2:16-cv-02743)), Apple Inc. (No. 6:15-cv-00885, related case in N.D. Cal. (No. 3:16-cv-02595)), Hewlett Packard Enterprise Co. (No. 6:16-cv-00086), Savvis Communications Corp. (No. 6:16-cv-00087), Dell Inc. (No. 6:16-cv-00089), Rackspace US, Inc. (No. 6:16-cv-00961), Fujitsu America, Inc. (No. 6:16-cv-01035, related case in N.D. Cal. (No. 3:17-cv-02109)), Vembu Technologies, Inc. (No. 6:16-cv-01037), Silver Peak Systems, Inc. (No. 6:17-cv-00071, related case in N.D. Cal. (No. 4:17-cv-02373)), Acronis, Inc. (No. 6:17-cv-00118, related case in D. Del. (No. 1:17-cv-11279)), Array Networks, Inc. (No. 6:17-cv-00119, related case in D. Del. (No. 1:17-cv-00800)), Barracuda Networks, Inc. (No. 6:17-cv-00120, related case in D. Del. (No. 1:17-cv-0893)), Carbonite, Inc. (No. 6:17-cv-00121), Circadance Corp. (No. 6:17-cv-00122), Exinda Inc. (No. 6:17-cv-00124), NETGEAR, Inc. (No. 6:17-cv-00125), Synacor Inc. (No. 6:17-cv-00126), and Evault, Inc. in D. Del. (No. 1:17-cv-00972). Pet. 2–3.

C. The '530 Patent

The '530 patent relates to "systems and methods for improving data storage and retrieval bandwidth utilizing lossless data compression and decompression." Ex. 1001, 1:15–18. Data compression "can reduce the time to transmit data by more efficiently utilizing low bandwidth data links," and also "allows more information to be stored for a fixed memory size by representing information more efficiently." *Id*. at 2:13–18. One problem discussed in the '530 patent is that the bandwidth of existing memory storage devices was significantly lower than the bandwidth of computer

system buses. *Id.* at 2:19–42. The specification describes how a system according to the claimed invention can adjust system parameters relating to the compression process to achieve compatibility between the output bandwidth of a data compressor and the bandwidth, i.e., storage rate, of a memory device. *Id.* at 9:38–67.

D. Illustrative Claim

Of the challenged claims, claims 1 and 24 are independent. Claim 1 is reproduced below, with line breaks added for readability:

1. A system comprising:

a memory device; and

a data accelerator,

> wherein said accelerator is coupled to said memory device,

> a data stream is received by said data accelerator in received form,

> said data stream includes a first data block and a second data block,

> said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique,

> said first and second compression techniques are different,

> said compressed data stream is stored on said memory device,

> said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form,

> a first data descriptor is stored on said memory device indicative of said first compression technique, and

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> said first descriptor is utilized to decompress the portion of
> said compressed data stream associated with said first
> data block.

Ex. 1001, 18:24–42.

E. Asserted Grounds of Unpatentability

Commvault challenges claims 1–26 of the '530 patent as unpatentable

under 35 U.S.C. § 103(a)[2] on the grounds of unpatentability set forth in the

table below. Pet. 8.

References	Challenged Claim(s)
Chu[3] and Fox[4]	1–5, 13–21, 23, and 25
Chu, Fox, and Wood[5]	6–12
Chu, Fox, and Rynderman[6]	22 and 26
Chu, Fox, Rynderman, and Clark[7]	24

Commvault asserts that each of the cited references is prior art to the

'530 patent under 35 U.S.C. § 102(b) because each was published or issued

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[2] The relevant sections of the Leahy-Smith America Invents Act ("AIA"),
Pub. L. No. 112–29, took effect on March 16, 2013. Because the application
to which the '530 patent claims priority was filed before that date, our
citations to Title 35 are to its pre-AIA version.

[3] U.S. Patent No. 5,467,087 to Chu, issued Nov. 14, 1995 (Ex. 1004).

[4] Armando Fox et al., *Adapting to Network and Client Variability via On-
Demand Dynamic Distillation*, ACM Sigplan, Vol. 31, No. 9, Sept. 1996
(Ex. 1005).

[5] Chris Wood et al., *DASD Trends: Cost, Performance, and Form Factor*,
IEEE Proceedings, Vol. 81, No. 4, Apr. 1993 (Ex. 1006).

[6] U.S. Patent No. 5,563,961, to Rynderman et al., issued Oct. 8, 1996
(Ex. 1012).

[7] U.S. Patent No. 5,319,682, to Clark, issued June 7, 1994 (Ex. 1013).

more than a year prior to the earliest filing date of the '530 patent. Pet. 5–7. Realtime Data does not, at this stage of the proceeding, challenge the prior art status of any cited reference.

III. ANALYSIS

A. *Discretionary Denial of Institution*

Realtime Data asks that we exercise our discretion to deny institution of trial under 35 U.S.C. § 325(d), which permits us to deny petitions where "the same or substantially the same prior art or arguments previously were presented to the Office." Prelim. Resp. 6–20. Specifically, Realtime Data points out that the references primarily relied upon by Commvault, Chu and Fox, were submitted to the Office via Information Disclosure Statements during prosecution of the application that led to the '530 patent, or during the reexamination proceeding. *Id.* at 9–12. Realtime Data also observes that Chu was discussed in the specification of a related patent, which was incorporated by reference in the specification of the '530 patent. *Id.* at 7–8.

Alternatively, Realtime Data asks that we deny institution of trial under 35 U.S.C. § 314(a), pursuant to the doctrine of *General Plastic Industries Co. v. Canon Kabushiki Kaisha,* IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential). Prelim. Resp. 20–23. Realtime Data reviews the various *General Plastic* factors and contends that the factors favor denial, even though Commvault has not previously challenged the '530 patent. *Id.*

Because we find below that the Petition does not establish a reasonable likelihood of success on the merits, we do not reach either of Realtime Data's discretionary denial arguments.

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B. Claim Construction

In an *inter partes* review, we construe claims by applying the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 136 S. Ct. 2131 (2016). Only those terms in controversy need to be construed, however, and 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).

Commvault contends that no claim terms appearing in the '530 patent require explicit construction. Pet. 12. Realtime Data does not address claim construction in its Preliminary Response. Upon review of the claims and the parties' contentions, we find that we need not construe explicitly any terms in order to resolve the question of whether trial should be instituted.

C. Obviousness

As summarized above, Commvault contends that all claims of the '530 patent are unpatentable under 35 U.S.C. § 103(a), over various combinations of prior art, each of which involves the combination of Chu and Fox.[8] Pet. 19–68. Commvault provides claim charts that set forth the teachings of each reference relied on in the combination, and discusses the reason why a person of ordinary skill in the art would have combined the teachings. *Id.* Commvault also relies upon the testimony of Dr. James Storer to support its positions. Ex. 1016.

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[8] Though the latter grounds articulated in the Petition involve the combination of additional references, our determination on the basis of Chu and Fox resolves all grounds advanced by Commvault.

1. The Law of Obviousness and the Person of Ordinary Skill

A patent claim is invalid as obvious if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a).

The ultimate determination of obviousness is a question of law, but that determination is based on underlying factual findings. The underlying factual findings include (1) "the scope and content of the prior art," (2) "differences between the prior art and the claims at issue," (3) "the level of ordinary skill in the pertinent art," and (4) the presence of secondary considerations of nonobviousness such "as commercial success, long felt but unsolved needs, failure of others," and unexpected results. *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (citing, *inter alia*, *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)).

In assessing the prior art, the Board must consider whether a person of ordinary skill would have been motivated to combine the prior art to achieve the claimed invention. *Nuvasive*, 842 F.3d at 1381. As stated in *Personal Web Technologies, LLC v. Apple, Inc.*, 848 F.3d 987, 991–992 (Fed. Cir. 2017):

> The Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S. Ct. 1727, 167 L.Ed.2d 705 (2007), explained that, "because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known," "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant

field to combine the elements in the way the claimed new invention does." *Id.* at 418–19, 127 S. Ct. 1727.

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to the patent owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Furthermore, "[t]o satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. at 418 (obviousness grounds "must be [supported by] some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.").

Thus, in order to institute *inter partes* review, Commvault must explain how the proposed combinations of prior art would have rendered at least one of the challenged claims unpatentable. *See* 35 U.S.C. § 314(a). Commvault alleges "[a] person of ordinary skill in the art of the '530 patent would have had an undergraduate degree in computer science and two years of industry experience or a graduate degree in the field of computer science." Pet. 12 (citing Ex. 1016 ¶¶ 28–30). Realtime Data does not propose a level of ordinary skill or comment on Commvault's proposal. For

purposes of this decision, we adopt Commvault's proposal for the level of ordinary skill.

1. Chu

Chu is entitled "High Speed Lossless Data Compression System." Ex. 1004, (54). More specifically, Figure 4 depicts a block diagram for "a high speed lossless data compression and decompression process." *Id.* at 4:24–26, *see also id.* at 4:5–7 (describing Figure 4 as "a lossless data compression and decompression process"). In the context of a system, Figure 8's embodiment illustrates "a lossless data compression and decompression system." *Id.* at 4:15–17.

2. Fox

In order to provide "meaningful" access to the Internet through "smart cellular phones and handheld wireless devices," Fox describes "how to perform on-demand datatype-specific lossy compression on semantically typed data, tailoring content to the specific constraints of the client." Ex. 1005, 160 (Abstract). The compression architecture, on-demand distillation, occurs "in the network infrastructure rather than at clients or servers." *Id.* at 160 (§ 1). Fox defines "distillation" as "highly lossy datatype-specific compression that preserves most of the semantic content of a data object while adhering to a particular set of constraints." *Id.* at 161 (§ 1.3.1). Three important data types are formatted text, images, and video streams. *Id.*

Table 4 of Fox is reproduced below.

Original Image (GIF)		Reduce to <8KB		Reduce, +map to 16 grays		Reduce, map, +convert to PICT	
size, KB	col-ors	size (%)	time	size (%)	time	size (%)	time
48	87	15.0	3.27	7.7	2.18	27.3	2.66
153	254	5.0	6.72	1.9	3.26	5.8	3.73
329	215	1.8	6.17	1.0	5.18	2.1	5.70
492	249	1.5	8.31	<1.0	6.25	1.4	6.75

Table 4

Ex. 1005, 163. Table 4 illustrates how much time, i.e., latency, it takes for an original GIF image to be distilled under three different distillation parameters, "size reduction to under 8KB, color quantizing to 16 grays, and format conversion to Macintosh PICT." *Id.* at 163 (§ 3.1). For example, where the original image is 48 KB, application of the parameters results in a "time" for distillation of 3.27, 2.18, and 2.66 seconds.

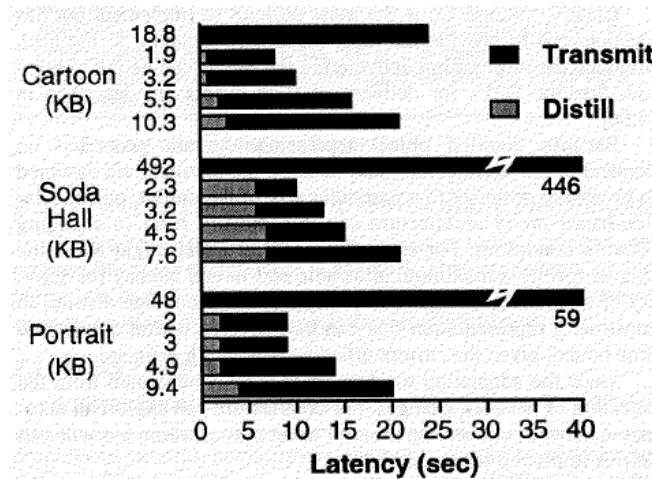Figure 3 of Fox is reproduced below.

Figure 3: End-to-end latency for images with and without distillation. Each group of bars represents one image with 5 levels of distillation; the top bar represents no distillation at all. The y-axis number is the distilled size in kilobytes (so the top bar gives the original size). Note that two of the undistilled images are off the scale; the Soda Hall image is off by an order of magnitude.

Ex. 1005, 164. Figure 3 illustrates three images, "Cartoon," "Soda Hall," and "Portrait," and depicts how transmission time is impacted by distillation. *Id.* The transmission time, shown in Figure 3 in seconds, is shown without distillation in the top bar for each image and in the four bars below with distillation. For example, for the Cartoon, the latency for the un-distilled image, having a size of 18.8 KB, is approximately 23 seconds. When distilled to a size of 10.3 KB, the lowest bar for the Cartoon, distillation takes approximately three seconds and transmission another 18 seconds for a total of approximately 21 seconds.
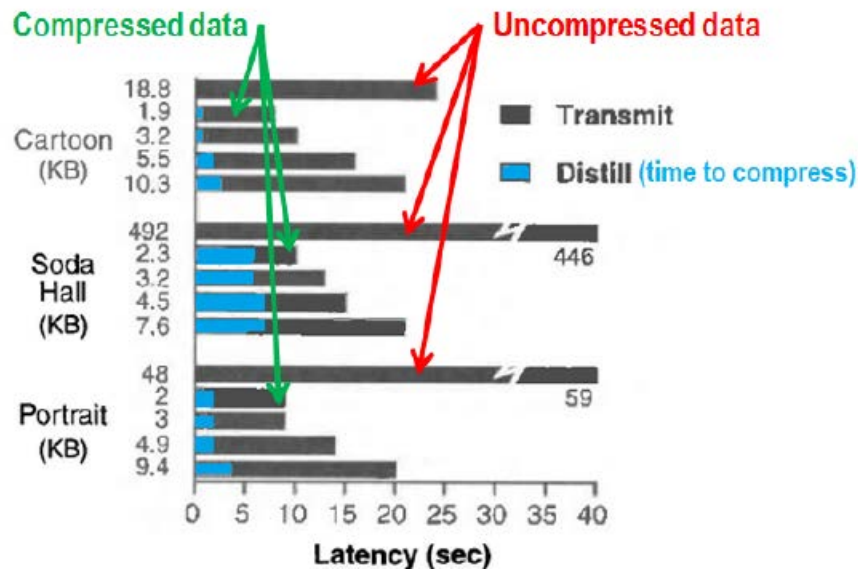
3. The "Faster-Than" Limitation

Claim 1 of the '530 patent requires that "said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form." In other words, the time required for the system to compress and then store the compressed data is less than the time required to store the uncompressed data. Claim 24 contains an identical limitation, and thus all challenged claims of the '530 patent include this "faster-than" limitation.

Commvault does not contend that the faster-than limitation is taught by Chu;[9] rather, "Fox teaches [the faster-than limitation] in describing a

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[9] Both the Petition and Dr. Storer hint at a belief that Chu discloses the faster-than limitation, but neither clearly articulates this position and neither advances an anticipation ground of unpatentability. The Petition states "Chu teaches *nearly all* of the limitations" of the claims, but that "[t]o the extent the Board concludes that Chu does not expressly disclose [the faster-than limitation], the limitation is supplied by Fox." Pet. 19. Dr. Storer states, in discussing the faster-than limitation, "[t]o the extent that Chu is deemed not to expressly disclose this limitation, Fox does." Ex. 1016 ¶ 163. Given their

system with 'greatly reduced end-to-end latency' where data compression allows data to be transmitted and stored considerably faster than uncompressed data." Pet. 22–23 (citing Ex. 1005, 164; Ex. 1016 ¶ 80). Commvault provides the following annotated version of Fox's Figure 3:

Fox's Figure 3, as annotated by Commvault, highlights in blue the time required to distill (compress) each image, while the remainder of the bar in grey is the time required to transmit the image. Pet. 23. Commvault contends that "Fox provides data showing that compressing and transmitting data occurs faster than transmitting the uncompressed data." *Id*.

Dr. Storer testifies that a person of ordinary skill in the art would have understood Fox's "transmit" time to include both transmission and storage in the client. Ex. 1016 ¶¶ 82–83. Alternatively, Commvault contends that

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ambiguity, neither of these statements are sufficient meet the requirement that the Petition "identif[y], in writing and with particularity . . . the grounds on which the challenge to each claim is based, and the evidence that supports the grounds" as to a ground based solely on Chu. 35 U.S.C. § 312.

even if "transmission" in Fox does not include storage time, "the storage would occur so quickly that it would not materially affect the system latency." Pet. 25. Dr. Storer observes that Fox discloses transmission speeds at the time of 14.4Kb/s, whereas memory devices at the time had data rates measured in MB/s. Ex. 1016 ¶ 84. Dr. Storer testifies that, even assuming a "conservative" 1 MB/s storage data rate,[10] the uncompressed 18.8 Kb "Cartoon" file of Fox would require 0.02 seconds to store, while the compressed 1.9 Kb file would require .002 seconds to store and 10 seconds to transmit. *Id*. ¶¶ 84–85.

Commvault's evidence of record suffers from a fundamental deficiency. As noted above, and as recognized by Commvault, Fox discloses the time required for two operations: *compressing* data, and *transmitting* data. There is no explicit disclosure of the time required to store data. The claims of the '530 patent, by contrast, are concerned only with the time required to compress and store data; the claims do not address transmission time.

Throughout the '530 patent, it is clear that the concepts of transmission and storage are distinct. The specification uses the terms in several places in sequential lists, suggesting they are distinct concepts. *See, e.g.,* Ex. 1001, Abstract ("time required to store, retrieve, or transmit data"), 1:38–40 ("data is more readily processed, stored, and transmitted"), 15:5–9 (embodiment that compresses data "for subsequent data processing, storage,

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[10] Commvault terms this a "very conservative data storage rate," (Pet. 26) while Realtime Data assumes the same data rate for the sake of argument (Prelim. Resp. 38).

or transmittal"). Furthermore, when discussing the drawbacks of the prior art, the patent specifically notes the rate limitations of storage on disk drives (17.1 Mb/s), in contrast to the significantly faster transmission speed of a PCI bus (264 MB/s), and that the patent is specifically intended to address the former. *Id*. at 2:20–32. Finally, we note that the claims themselves refer to data "stored on said memory device," which suggests that "storage" within the scope of the claims does not include transmission.

The disclosure in Fox relied upon by Commvault, by contrast, only discusses the time required to "transmit" data, and is focused specifically on the slow latency of the 14.4 Kb/s data modems of the time. Ex. 1005, 164. Commvault and Dr. Storer attempt to address this lack of disclosure of storage time by explaining that Fox's "transmission" time also includes the time required to store data. Pet. 23; Ex. 1016 ¶¶ 82–83. Accepting, *arguendo*, this assumption as correct, we still cannot conclude that Fox teaches the claim limitation in question. Fox provides no basis to discern *what portion* of the "transmit" time shown in each of the bars of Figure 3 is devoted to storing the data, rather than transmitting it via modem. For instance, there is no way to know whether the first, approximately 23-second bar of Figure 3 includes 20 seconds of transmission time and 3 seconds of storage time, or 1 second of transmission time and 22 seconds of storage time, or something in between. Without this key piece of information, we cannot know whether Fox's compression and *storage* of compressed data is faster than its storage of uncompressed data—we can only know that the compression and *transmission* of the data is faster.

Even if we were to further accept Dr. Storer's "conservative" estimate that the storage rate of Fox was 1 MB/s, we cannot conclude that Fox

teaches the faster-than limitation. As Commvault recognizes, this assumption leads to an estimated storage time of 0.02 seconds for Fox's uncompressed 18.8 KB "Cartoon" file, and a storage time of 0.002 seconds for the compressed 1.9 KB file. But as Fox's Table 4 shows, using Fox's methods to compress the files took on the order of *multiple seconds*, with the shortest reported time being 2.66 seconds. Ex. 1005, 163, Table 4. Even assuming that the compression of the 18.8 KB "Cartoon" file took only a single second, the total time required to compress and store the file would have been 1.002 seconds, while the uncompressed file would have been stored in 0.02 seconds. Therefore, even accepting Commvault's contentions and assumptions as true, the compression and storage in Fox (1.002 seconds) is not "faster than" the storage of the uncompressed data (0.02 seconds).

As noted above, Commvault relies only on Fox for the disclosure of the faster-than limitation in the independent claims. Pet. 40–42 (claim chart for element 1[g]), 68 (claim 24 chart reciting "*See* Claim 1[g]"). Commvault's analysis of the dependent claims relies on additional references such as Wood, Rynderman, and Clark, but Commvault does not assert that any of these secondary references teach the faster-than limitation.

4. Conclusion

In view of Commvault's failure of proof as to the claim limitation, present in all challenged claims, that "said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form," we cannot conclude that the Petition provides evidence sufficient to establish a reasonable likelihood of success in proving unpatentable claims 1–24 of the '530 patent. For this reason, we deny institution of trial.

V. ORDER

Accordingly, it is ORDERED that pursuant to 35 U.S.C. § 314(a) the petition is denied, and no *inter partes* review trial is instituted.

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