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Paper 10
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AMAZON.COM, INC., and
BLIZZARD ENTERTAINMENT, INC.,
Petitioner,

v.

AC TECHNOLOGIES S.A.,
Patent Owner.

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Case IPR2015-01802
Patent 7,904,680 B2

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Before MATTHEW R. CLEMENTS, PETER. P. CHEN, and JEFFREY W. ABRAHAM, *Administrative Patent Judges.*

CLEMENTS, *Administrative Patent Judge.*

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

# I. INTRODUCTION

Amazon.com, Inc. and Blizzard Entertainment, Inc. (collectively, "Petitioner") filed a Petition requesting *inter partes* review of claims 1–15 ("the challenged claims") of U.S. Patent No. 7,904,680 B2 (Ex. 1002, "the '680 patent"). Paper 1 ("Pet."). AC Technologies, S.A. ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp."). We review the Petition pursuant to 35 U.S.C. § 314, which provides that an *inter partes* review may be authorized only if "the information presented in the petition . . . and any [preliminary] response . . . 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." 35 U.S.C. § 314(a); 37 C.F.R. § 42.4(a). Upon consideration of the Petition and the Preliminary Response, we determine that the information presented by Petitioner establishes that there is a reasonable likelihood that Petitioner would prevail in showing the unpatentability of at least one of the challenged claims of the '680 patent. Accordingly, pursuant to 35 U.S.C. § 314, we institute an *inter partes* review of claims 1–15 of the '680 patent.

## *A. Related Proceedings*

The '680 patent is involved in several cases pending in the Western District of Texas, and in one case pending in the Northern District of California. Pet. 2; Paper 7, 2–3. Petitioner also has filed other petitions seeking *inter partes* review of this and related patents. Pet. 3; Paper 7, 3.

## *B. The '680 patent*

The '680 patent relates generally to a data access and management system as well as to a method for data access and data management for a

computer system. Ex. 1002, 1:21–23. In particular, it relates to a system and a method for optimizing the access to data and the processing of that data in distributed and networked computer structures. *Id.* at 1:23–26. According to the '680 patent, conventional distributed systems built on the client/server model were vulnerable to failure of the server, failure of network areas connecting the server to the clients, and different "lags" between the server and various clients. *Id.* at 1:28–62.

To address these and other problems, the '680 patent describes a distributed system in which data is stored in a redundant manner depending on parameters of data transmission between computer units and data storage means, and the computer units access one of the data storage means as a function of the data transmission parameters. *Id.* at 2:21–27. Figure 2 is reproduced below.

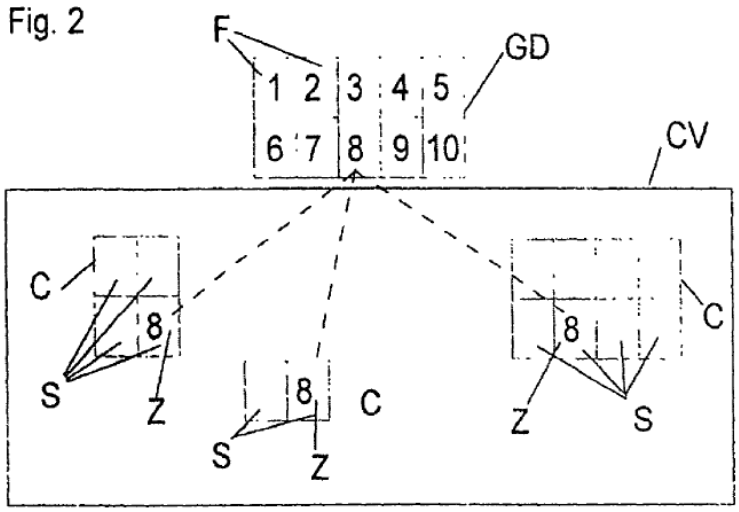


Figure 2 shows a schematic representation of a data structure and its division and assignment to cells. *Id.* at 6:53–55. Data quantity GD is divided into individual data subsets referred to as fields F. *Id.* at 7:1–3. A single field F is stored in several cells Z in a redundant manner. *Id.* at 8:1–2. A cluster C comprises one or more cells Z. *Id.* at 7:13–14. Each memory location of a

cluster is referred to as a slot S. All clusters C are combined for the representation of GD to form a cluster compound CV. *Id.* at 7:18–20.

Figure 1 is shown below.

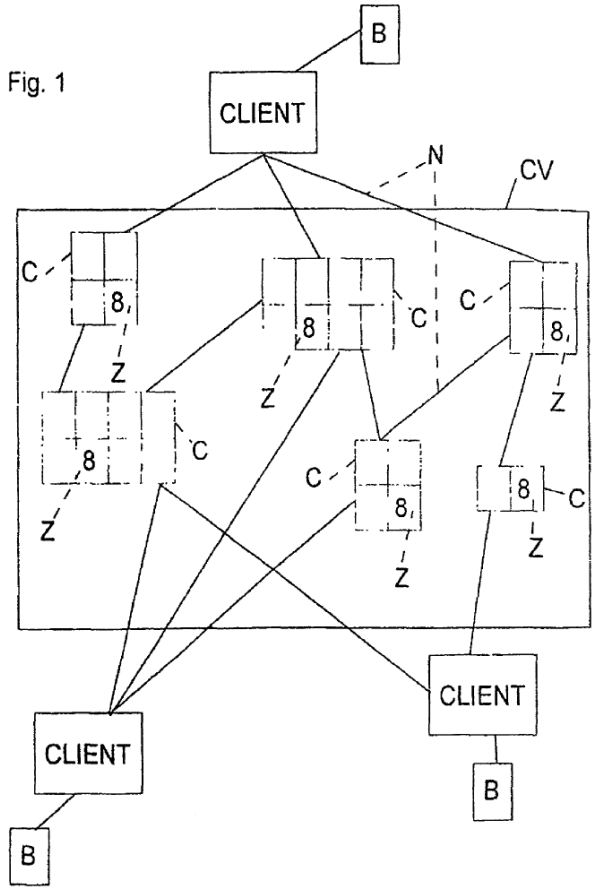


Figure 1 shows a schematic representation of a preferred embodiment. *Id.* at 6:50–52. Figure 1 depicts clients CL connected to clusters C via network N. *Id.* at 7:53–64. User B connects to a client CL generally through only one connection, which, according to the '680 patent, is usually a telephone line. *Id.* at 9:54–58. The system can be used to provide computer games over the Internet. *Id.* at 3:63–4:7, 9:48–51.

### *C. Illustrative Claim*

Of the challenged claims, claims 1, 3, 5, 7, 10, and 13 are independent. Claim 1 is illustrative and is reproduced below:

> 1. A data management system comprising:
>
> at least two data storage units;
>
> at least one computer unit that stores at least one complete file, each file including a plurality of individual pieces, the pieces containing parts of the files, wherein at least one piece is stored in a redundant manner in the at least two data storage units;
>
> a controller to enable data transmission between the data storage units and the computer unit;
>
> wherein at least one of the data storage units and computer unit measures a data transmission performance between at least one of the data storage units and the computer unit, the at least one piece being stored by the computer unit in a redundant manner in the data storage units as a function of the measured data transmission performance, and the computer unit accessing the at least one of the data storage units as a function of the measured data transmission performance; and
>
> wherein at least one of the at least two data storage units measures a data transmission performance between at least two of the at least two data storage units and the data storage units copy pieces that are redundantly stored in the system from one of the data storage units to another of the data storage units independently of an access of the computer unit based on the data transmission performance measured between the data storage units.

Ex. 1002, 25:64–26:24.

*D. Asserted Grounds of Unpatentability*

Petitioner argues that the challenged claims are unpatentable as obvious over Rabinovich.[1] Pet. 4. Petitioner also argues that, under an alternative construction of "computer unit," claims 1, 3, 5, and 7–15 are

[1] Rabinovich, M., et al., "Dynamic Replication on the Internet," Work Project No. 3116-17-7006, AT&T Labs Research Technical Memorandum HA6177000-980305-01TM (March 5, 1998). Exhibit 1006.

unpatentable as anticipated by Rabinovich, and claims 2, 4, and 6 are unpatentable as obvious over Rabinovich. *Id.* at 4–5.

## II. ANALYSIS

### *A. 35 U.S.C. § 325(d)*

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 325(d) to deny this Petition because "the grounds set forth in this Petition . . . are substantially the same as those in [IPR2015-01803]." Prelim. Resp. 32–34. Petitioner argues that the Petition in IPR2015-01803 challenges the same claims using the same base reference—Rabinovich—and, therefore, those grounds are vertically redundant to those of this Petition. *Id.* at 33. Petitioner contends that, "in the event that the Board grants *inter partes* review in the related case IPR2015-01803, the Board should exercise its discretionary authority under 35 U.S.C. § 325(d) and not institute an *inter partes* review on the grounds set forth in this Petition." *Id.* at 34.

We have considered Patent Owner's arguments, but we are not persuaded that exercise of our discretion under § 325(d) warrants denying the Petition in this circumstance. Patent Owner acknowledges that the Petition in IPR2015-01803 involves references—Carter and Akizawa—not asserted in this Petition (Prelim. Resp. 33). We are, therefore, not persuaded that the prior art asserted in this Petition is "substantially the same" as the prior art asserted in IPR2015-01803. The fact that the grounds of unpatentability asserted in this Petition and those asserted in the Petition filed in IPR2015-01803 all include Rabinovich does not, by itself, persuade us to exercise our discretion under § 325(d).

Thus, under the circumstances presented by this case, we decline to exercise our discretion under § 325(d) to deny this Petition.

### *B. Claim Construction*

We interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 84 U.S.L.W. 3218 (U.S. Jan. 15, 2016) (No. 15-446). In applying a broadest reasonable construction, claim terms generally 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. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner proposes constructions under a broadest reasonable interpretation for "data storage [unit/device]," "computer unit," "a controller to enable data transmission between the data storage units and the computer unit," "data transmission performance," "means for storing at least one complete file, each file including a plurality of individual pieces," "data storage means for storing data," and "control means for enabling data transmission." Pet. 17–26. For purposes of this decision, we determine that only four of those terms require express construction.

*1. "computer unit"*

Independent claims 1, 3, 7, 10, and 13 recite a "computer unit." Petitioner proposes to construe the term to mean "a client computer, for example, an Internet Service Provider, personal computer, or network computer." Pet. 18–19 (citing Ex. 1001, Abstract ("("parameters of data transmissions between the computer units (CL)"), 8:5–6 (""[a] client CL

(e.g. Internet provider, personal computer, network computer, and the like) is a unit"), 9:28–30 ("clients CL check the parameters for data transmissions").[2] Petitioner also argues, in the alternative, that if "computer unit" is construed broadly based upon Patent Owner's infringement contentions in the corresponding litigations, it encompasses any computing device. Pet. 45–46. Although Petitioner believes this construction is overly broad (Pet. 18–19), it nevertheless argues that, under such a construction, the challenged claims would be anticipated by and/or obvious over Rabinovich (Pet. 4–5, 45–57).

Patent Owner argues that Petitioner's proposal to limit "computer unit" to a client computer is overly narrow, and "represents an effort to limit the patent claims to examples in the specification" and to depictions in the drawings. Prelim. Resp. 15–16. Patent Owner does not, however, propose an explicit construction of "computer unit."

The '680 patent does not define the term "computer unit." As Petitioner points out, the term appears only in the Abstract, Background, Summary of the Invention, and claims. Pet. 18. The closest that the '680 patent comes to defining "computer unit" is in the Abstract, where "computer units" is used three times and followed each time in parentheses by "CL," which the '680 patent uses as an abbreviation for "client" (Ex. 1002, 7:53–54 ("A client CL (e.g., Internet provider, personal computer, network computer, and the like)"). *Id.* at Abstract. Such usage does not amount, however, to a definition of the term "computer unit" to mean "CL."

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[2] Petitioner appears to cite to US RE40,521 E (Exhibit 1001), of which the '680 patent is a continuation, rather than to the corresponding disclosure in the '680 patent.

Moreover, the ’680 patent’s description of a “client CL” as a “unit” (*id.* at 7:53) does not imply that all “computer units” are necessarily clients. In addition, the ’680 patent states that the “computer unit” can perform functions traditionally associated with servers rather than clients, such as providing Internet services. *Id.* at 3:28–30 (“[T]he computer unit can also be a system which provides Internet services such as e.g. data base access operation and computer games.”); *see also id.* at 3:57–62 (in a preferred embodiment, at least one “computer unit” is an Internet service provider). The ’680 patent also, in places, distinguishes “computer units” from the computing devices used by users. *See, e.g., id.* at 4:1–4 (“Preferably, data for executing the computer game is transmitted from the computer units to the users so that the computer game can also be carried out--at least partially--independent of the computer units.”).

Accordingly, on this record, and for purposes of this Decision, we determine that “computer unit” is not limited to a client computer and, instead, encompasses any computing device.

*2. “controller”*

Petitioner contends that this is a means-plus-function limitation that should be construed in accordance with 35 U.S.C. § 112, ¶ 6. Pet. 19–21. Petitioner contends that the function of this limitation is to “enable data transmission between the data storage units and the computer unit.” *Id*. at 21. Petitioner contends that the structure corresponding to this function is a network between the data storage units and the computer unit(s). *Id.*

Patent Owner argues that this phrase does not employ the word “means” and thus does not give rise to a presumption of means-plus-function treatment. Prelim. Resp. 16. According to Patent Owner, “[a] ‘controller’ is

a specific class of structures known to a person of skill in the art, entailing a computer running control software." *Id.* (citing Ex. 2002 (Microsoft's Computer Dictionary, Third Edition (1997))).

On this record, and for purposes of this Decision, we are persuaded by Patent Owner that "controller" is not a "nonce" word like "module," but rather is understood by a person of ordinary skill in the art to have sufficiently definite meaning as the name for structure.

*3. "means for storing at least one complete file"*

The parties agree that this is a means-plus-function limitation that should be construed in accordance with § 112, ¶ 6. Pet. 24; Prelim. Resp. 19. Petitioner contends, and Patent Owner does not dispute, that the function of this limitation is "storing at least one complete file, each file including a plurality of individual pieces." Pet. 24. With respect to structure, Petitioner contends that the structure corresponding to this function is the "computer unit" claimed in claims 1 and 3, or the "client" described in the '680 patent. Pet. 24–25 (citing Ex. 1005 ¶ 88). Petitioner contends, in the alternative, that the limitation is indefinite. *Id.* at 24 ("[T]he specification does not contain a description of the computer unit or any other structure storing a complete file."). Patent Owner faults Petitioner for ignoring Figure 2, and the description thereof (Ex. 1002, 7:1–3), which depict storage of "[t]he entire data quantity GD," which Patent Owner contends corresponds to the recited "at least one complete file." Prelim. Resp. 19. According to Patent Owner, the '680 patent discloses the following structures that are capable of performing the recited function: "cells; control units; individual memory areas; clusters; cluster

pools/compounds; memory units; conventional storage means; non-volatile memories; and random access memories." *Id.*

The '680 patent states that "[c]omputer units (CL) are able to access the redundantly stored data." Ex. 1002, Abstract. The '680 patent also states that "it is an object of the invention to optimise the transmission quality between *clients* and means of a networked distributed computer structure which provide data in such a manner that each *client* is provided with the respectively requested data in a desired application-specific manner." *Id.* at 2:1–5 (emphases added). Moreover, the depiction in Figure 2 of data quantity GD being allocated within cluster compound CV parallels the depiction in Figures 1 and 4 of client CL networked to cluster compounds CV. *Id.* at Figs. 1, 2, 4.

On this record, and for purposes of this decision, we are persuaded that the structure disclosed in the '680 patent as performing the recited function is the client CL.

*4. "second data storage means for storing data"*

Petitioner contends, and Patent Owner does not dispute, that this is a means-plus-function limitation that should be construed in accordance with § 112, ¶ 6. Pet. 25. Petitioner contends, and Patent Owner does not dispute, that the function of this limitation is "storing data." *Id.* With respect to structure, Petitioner contends, and Patent Owner does not dispute, that the structure corresponding to this function is the "data storage unit" recited in independent claims 1 and 3, or the "data storage device" recited in independent claims 7, 10, and 13. Pet. 25 (citing Ex. 1005 ¶ 89).

Neither "data storage unit" nor "data storage device" appears in the Specification apart from the claims. This limitation of claim 5 further

specifies that "at least one piece [of the at least one complete file] is stored in a redundant manner in the at least two second data storage means." Ex. 1002, 26:65–67. The '680 patent describes data quantity GD being divided into fields F that are stored redundantly in cells Z. *See, e.g.*, *id.* at 7:1–24.

On this record, and for purposes of this decision, we are persuaded that the structure disclosed in the '680 patent as performing the recited function is cell Z.

*5. "control means"*

The parties agree that this is a means-plus-function limitation that should be construed in accordance with § 112, ¶ 6. Pet. 25–26; Prelim. Resp. 19–20. The parties further agree that the function of this limitation is "enabling data transmission between the second data storage means and the first means." *Id*. With respect to structure, Petitioner contends that the structure corresponding to this function is the "network between the data storage unit(s) and the computer unit(s)." Pet. 26. Patent Owner contends that "the structure corresponding to this function is a computer system running algorithms disclosed in the specification of the '680 patent, namely the copy, shift, read, write and/or mirror commands." Prelim. Resp. 20 (citing Ex. 1002, 18:30–25:54, Fig. 4).

We are not persuaded by Petitioner that the structure corresponding to the recited function is a network. Although the '680 patent, in one place, describes a "network" as including buses (Ex. 1002, 7:58–60 ("As network N any means which transmit data can be employed, such as e.g. proprietary busses, local networks, or the Internet."), the '680 patent elsewhere distinguishes "computer networks" from "electrically conductive connections, and/or bus systems." *Id.* at 3:41–46 ("The individual

components of the inventive system according to an embodiment of the present invention are connected with each other via data transmission means, which can comprise electrically conductive connections, and/or bus systems, and/or computer networks, and/or wired or wireless (mobile) telephone networks, and/or the Internet."). In the same passage, the '680 patent refers to a computer network as a "data transmission means" rather than as a "control means." In contrast, the '680 patent describes how "the data storage means comprise [a] control unit for controlling the data access and the data management in order to work independent of other means of the computer system." *Id.* at 2:31–35. The '680 patent explicitly states that "cluster C can operate as a higher-level control unit for the cells Z contained in it." *Id.* at 7:16–17.

On this record, and for purposes of this decision, we are persuaded that the structure disclosed in the '680 patent as performing the recited function is cluster C.

*6. Other Claim Terms*

Only terms which are in controversy in this proceeding need to be construed, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). For purposes of this Decision, no other claim terms require express construction.

### *C. Whether Rabinovich is a Printed Publication*

Under 35 U.S.C. § 311(b), a petitioner in an *inter partes* review may only challenge the claims of a patent based on "prior art consisting of patents or printed publications." 35 U.S.C. § 311(b). Petitioner has the initial burden of production, i.e., "going forward with evidence," to establish that

there is prior art that renders the claims unpatentable. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008)).

Rabinovich is an AT&T Technical Memorandum, Work Project No. 3116-17-7006 and titled "Dynamic Replication on the Internet." Ex. 1006, 1. Petitioner styles the memorandum as an "article" and takes the position that Rabinovich is a "printed publication" under 35 U.S.C. § 102(b) because, as of December 1998, Dr. Rabinovich had (1) posted the article on his webpage on a publicly-available AT&T website; and (2) directed interested members of the public to the article by referencing it in an article on a related topic that was published in a journal in 1998. Pet. 26–27; Ex. 1011, 13.[3] To substantiate its position, Petitioner relies on a declaration from Dr. Rabinovich describing his practices regarding posting articles on his webpage in 1998. *See* Ex. 1004.

In its Preliminary Response, Patent Owner argues Petitioner has failed to establish that Rabinovich is a prior art printed publication to the '680 patent. Prelim. Resp. 20–32. Specifically, Patent Owner contends that the Rabinovich Declaration "reveals the complete absence of any sworn testimony by the witness that [Rabinovich] was in fact accessible to any member of the public prior to January 11, 1999." *Id.* at 22–23. In this regard, Patent Owner notes that Petitioner does not provide any information from anyone at AT&T or from any colleague supporting the assertion that

[3] Unless otherwise indicated, exhibit page numbers refer to those assigned by Petitioner.

Rabinovich would have been accessible to the public on Dr. Rabinovich's webpage, or that anyone from the public was able to access Rabinovich on-line, including, for example, direct evidence that the URL listed in the December 1998 IEEE Bulletin article actually linked to Rabinovich. *Id.* at 24–25.

Patent Owner takes the position that Rabinovich itself contains no indication that it was accessible to the public, and that Petitioner does not cite to any evidence demonstrating that "Rabinovich was ever actually accessed by any member of the public." *Id.* at 22–23. Rather, according to Patent Owner, Rabinovich was intended to be an in-house AT&T document. *Id.* Patent Owner also argues that, "astonishingly," Dr. Rabinovich himself does not consider Rabinovich to be one of his "publications" because he did not include it on a "complete" list of publications provided in his curriculum vitae, which he submitted in connection with the aforementioned district court litigations involving the '680 patent and in the present proceeding. *Id.* at 29–30 (*see* note 3). Patent Owner further contends that the absence of Rabinovich on the Wayback Machine[4] undermines Petitioner's arguments that Rabinovich was publicly available as of December 1998. *Id.* at 30–32.

According to the Federal Circuit:

> The statutory phrase "printed publication" has been interpreted to give effect to ongoing advances in the technologies of data storage, retrieval, and dissemination. Because there are many ways in which a reference may be disseminated to the interested public, "public accessibility" has been called the touchstone in

[4] Patent Owner identifies the Wayback Machine as a product of the Internet Archive Company (accessible at https://archive.org/web/). Prelim. Resp. 25.

> determining whether a reference constitutes a "printed publication" bar under 35 U.S.C. § 102(b).

*In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986) (internal citations omitted). The determination of whether a given reference is publicly available is made on a case by case basis based on the particular facts and circumstances regarding the particular reference at issue. *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012); *SRI Int'l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008). "The ultimate question is whether the reference was 'available to the extent that persons interested and ordinarily skilled in the subject matter or art[,] exercising reasonable diligence, can locate it." *Voter Verified*, 698 F.3d at 1380 (quoting *SRI*, 511 F.3d at 1194).

Here, Petitioner presents testimony from Dr. Rabinovich that indicates Rabinovich was posted to a specific URL no later than December 1998, which is more than one year before the earliest priority date (January 11, 2000) of the '680 patent. Ex. 1004 ¶¶ 2, 4, 6, and 8. Dr. Rabinovich testifies that he authored an article that was published in the December 1998 IEEE Bulletin, cited Rabinovich in footnote 16 of that article, and included the URL on his webpage from which the general public could download Rabinovich. *Id.* Petitioner provides a copy of Dr. Rabinovich's article published in the December 1998 IEEE Bulletin as Exhibit 1011, which includes a citation to Rabinovich in footnote 16, and states that the article is available at a specific URL. Ex. 1011, 13 n.16. Dr. Rabinovich further testifies that his practice was, "for each cited article identified as being available on my website at a specific URL, [to] confirm the article's actual availability at that URL." Ex. 1004 ¶ 6.

Our review of the evidence on the present record, including the footnote in the December 1998 IEEE Bulletin article and Dr. Rabinovich's testimony, indicates that, at this stage, Petitioner has shown sufficiently that Rabinovich was publicly accessible to one of ordinary skill in the art[5] as of December 1998. In particular, the fact that the 1998 IEEE Bulletin article expressly cites Rabinovich in footnote 16, which indicates that Rabinovich is a technical report from AT&T labs and is available at a specific URL, suggests that a person of ordinary skill in the art interested in the subject matter at issue, exercising reasonable diligence, could have located Rabinovich. *See Blue Calypso, LLC. v. Groupon, Inc.*, No. 2015-1391, -1393, -1394, slip op. at 32 (Fed. Cir. March 1, 2016) (stating that "a published article with an express citation to the potentially invalidating reference would similarly provide the necessary guidance" to allow a person of ordinary skill in the art to arrive at the potentially invalidating reference). At this stage of the proceeding, we credit Dr. Rabinovich's testimony that he confirmed, prior to December 1998, the availability of Rabinovich at the URL listed in footnote 16 of the 1998 IEEE Bulletin article.

We disagree with Patent Owner's contention that the Rabinovich Declaration "reveals the complete absence of any sworn testimony by the witness that the Rabinovich Technical Memorandum was in fact accessible to any member of the public prior to January 11, 1999." Prelim. Resp. 22–

[5] According to Petitioner, a person of ordinary skill in the art would have had "an undergraduate degree in Computer Science or a related field, such as Electrical Engineering, and two to three years of experience working in the field." Pet. 18. Patent Owner does not address the level of ordinary skill in the art in the Preliminary Response.

23. Dr. Rabinovich testified that he made Rabinovich publicly available via his webpage, cited Rabinovich in another publication, and confirmed Rabinovich's actual availability as of December 1998. Ex. 1004 ¶¶ 4–6. On the present record, we also are not persuaded by Patent Owner's contention that Rabinovich was intended to be an in-house AT&T document because Patent Owner fails to direct us to sufficient evidence to support such a conclusion. For example, Patent Owner does not direct us to any confidentiality designation on Rabinovich itself or to any language limiting the distribution of the article.

With regard to Patent Owner's arguments regarding the lack of evidence demonstrating Rabinovich was actually accessed by a member of the public, we note that such evidence is not required to support a determination that a reference was publicly accessible to persons skilled in the art. *See, e.g.*, *In re Wyer*, 655 F.2d 221, 226–27 (CCPA 1981) (holding that "the contents of the application were sufficiently accessible to the public and to persons skilled in the pertinent art to qualify as a 'printed publication'" even though "no fact appears . . . respecting actual viewing . . . of any copy of the application"). Furthermore, at this stage of the proceeding, we are not persuaded by Patent Owner's arguments regarding the omission of Rabinovich from Dr. Rabinovich's CV and the absence of Rabinovich on the Wayback Machine approximately 17 years after the alleged date of publication of Rabinovich (Prelim. Resp. 29–32), in view of the testimony of Dr. Rabinovich regarding the availability of the reference via his website as of 1998, and the content of footnote 16 of the article published in the December 1998 IEEE Bulletin.

Therefore, on this record, we determine that Petitioner has made a sufficient showing to establish that Rabinovich is a prior art printed publication within the meaning of 35 U.S.C. § 102(b).

### *D. Claims 1–15 — Obviousness over Rabinovich (Ground 1)*

Petitioner argues that claims 1–15 are unpatentable under 35 U.S.C. § 103 as obvious over Rabinovich. Pet. 31–45.

*1. Rabinovich (Ex. 1006)*

Rabinovich describes

> a protocol suite for dynamic replication and migration of Internet objects. It consists of an algorithm for deciding on the number and location of object replicas and an algorithm for distributing requests among currently available object replicas. Our approach attempts to place replicas in the vicinity of a majority of requests while ensuring at the same time that no servers be overloaded. The request distribution algorithm uses the same simple mechanism to take into account both server proximity and load, without actually knowing the latter. The replica placement algorithm executes autonomously on each node, without the knowledge of other object replicas in the system.

Ex. 1006, 1.

*2. Analysis*

In light of the arguments and evidence of record, Petitioner has established a reasonable likelihood that claims 1–15 are unpatentable as obvious over Rabinovich.

As discussed above, we determine that "computer unit" encompasses any computing device. Although Petitioner's contentions are predicated upon a narrower construction of "computer unit," we nevertheless analyze Petitioner's assertions under our broader construction of "computer unit" in

order to assess whether Petitioner has established a reasonable likelihood of showing the unpatentability of claims 1–15 as obvious over Rabinovich.

For example, independent claim 1 recites "at least two data storage units." Petitioner relies upon Rabinovich's teaching of hosts. Pet. 31 (citing Ex. 1006, 5, 7, Fig. 1 (h1, h2, h3, s); Ex. 1005 ¶¶ 231–233).

Independent claim 1 further recites "at least one computer unit that stores at least one complete file, each file including a plurality of individual pieces, the pieces containing parts of the files, wherein at least one piece is stored in a redundant manner in the at least two data storage units." Petitioner relies upon Rabinovich's teaching of clients as the recited "computer unit," and of objects that are stored, replicated, and served to the clients as the recited "complete file." *Id.* at 32–33 (citing Ex. 1006, 1, 20, 24, Table 2; Ex. 1005 ¶¶ 235–241).

Independent claim 1 further recites "a controller to enable data transmission between the data storage units and the computer unit." Petitioner's primary contentions are based on construing "controller" as a means-plus-function term, which we decline to do for the reasons discussed above, but Petitioner argues in the alternative that even if "controller" is not a means-plus-function term, Rabinovich still discloses a "controller" because "Rabinovich would necessarily have such software that controls communication between the servers and the clients." Pet. 33 (citing Ex. 1005 ¶ 234[6]). In this regard, Petitioner's expert, Dr. David H. Ratner, testifies that the "controller" limitation is met by Rabinovich's teaching of

[6] We understand Petitioner's citation to paragraph 234 to be a typographical mistake because the "controller" limitation is discussed in paragraph 243—not 234—of Dr. Ratner's Declaration.

"the redirector and network connecting client computer, distributor, redirector and host server that performs the function of enabling transmission of Internet object data content between a data storage units [host servers] and a computer unit [the user's client computer]." Ex. 1005 ¶ 244. Rabinovich teaches that "a *redirection service* keeps the *mapping database* that maps URLs to replica sets," and that the database is partitioned among multiple redirectors. Ex. 1006, 33. "Redirectors implement the request distribution algorithm of Figure 2 for their portion of the URL namespace. In response to the above query, the redirector chooses a physical replica for the requested object and sends its ID (a 'physical URL' back to the distributor." *Id.* at 34. On this record, we are persuaded that Rabinovich's redirector is a "controller to enable data transmission between the data storage units and the computer unit" for the reasons argued by Petitioner.

Independent claim 1 further recites:

> wherein at least one of the data storage units and computer unit measures a data transmission performance between at least one of the data storage units and the computer unit, the at least one piece being stored by the computer unit in a redundant manner in the data storage units as a function of the measured data transmission performance, and the computer unit accessing the at least one of the data storage units as a function of the measured data transmission performance

Ex. 1002, 26:6–15. Petitioner argues that "the redirector directs the request to one of the replica servers based on transmission parameters, including proximity of the client to the replica server and distribution of load." Pet. 33–34 (citing Ex. 1006, 9–10; Ex. 1005 ¶¶ 244–247). Specifically, Petitioner contends that "data transmission performance" is measured "by

examining the proximity to the requesting client (and therefore communication costs/delay) and the request count/affinity ratio (which is a proxy for load)." *Id.* at 34 (citing Ex. 1005 ¶¶ 244–247). With respect to "the computer unit accessing . . . as a function of the measured data transmission performance," Petitioner states that "[t]he clients in Rabinovich then access the hosts/servers based on the measured performance." *Id.* (citing Ex. 1006, 9–10; Ex. 1005 ¶¶ 248–250). With respect to "the at least one piece being stored by the computer unit . . . in the data storage unit as a function of the measured data transmission performance," Petitioner argues that "it would have been obvious to a [person having ordinary skill in the art] to use the same technique to select a server for an upload operation." *Id.* at 34–35.

Finally, independent claim 1 recites:

> wherein at least one of the at least two data storage units measures a data transmission performance between at least two of the at least two data storage units and the data storage units copy pieces that are redundantly stored in the system from one of the data storage units to another of the data storage units independently of an access of the computer unit based on the data transmission performance measured between the data storage units.

Ex. 1002, 26:16–24. Petitioner argues that "each host/server will periodically measure the data transmission performance between themselves and other hosts/servers in the system for each of the data objects stored, to decide whether to redundantly store the object based on the measured performance." Pet. 35 (citing Ex. 1006, 11; Ex. 1005 ¶¶ 253–256). Specifically, Petitioner argues that "the host/server will create a new replica of the stored object in a new server," "[b]ased in part on the loads of both hosts/servers and measures of proximity to requesting clients," and that

"[t]he determination of where to make a new replica is independent of an access by a client at that time." *Id.* at 35–36 (citing Ex. 1006, 2, 10–17; Ex. 1005 ¶¶ 257–260).

At this stage, Patent Owner does not dispute Petitioner's contentions.

On this record, we are persuaded that Petitioner's citations support Petitioner's contentions with respect to claim 1. Having reviewed the arguments and evidence with respect to claims 2–15 (Pet. 36–45), we also are persuaded that Petitioner's citations support Petitioner's contentions with respect to those claims.

*3. Conclusion*

On this record, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in showing that claims 1–15 are unpatentable under 35 U.S.C. § 103 as obvious over Rabinovich.

### *E. Claims 1, 3, 5, and 7–15 — Anticipation by Rabinovich (Ground 2)*

Petitioner argues that, under a broad construction of "computer unit," which we have adopted for purposes of this Decision, claims 1, 3, 5, and 7–15 are unpatentable under 35 U.S.C. § 102 as anticipated by Rabinovich. Pet. 45–56.

*1. Analysis*

In light of the arguments and evidence of record, Petitioner has established a reasonable likelihood that claims 1, 3, 5, and 7–15 are unpatentable as anticipated by Rabinovich.

For independent claim 1, for example, Petitioner's contentions largely mirror its contentions for Ground 1, discussed above, except for elements 1[b] and 1[d], which we address in detail. Pet. 45–48.

Element 1[b] of independent claim 1 recites "at least one computer unit that stores at least one complete file, each file including a plurality of individual pieces, the pieces containing parts of the files, wherein at least one piece is stored in a redundant manner in the at least two data storage units." Instead of relying on Rabinovich's client, as it did in Ground 1, Petitioner argues that Rabinovich's host discloses a computing device, as encompassed by a broad construction of "computer unit." Pet. 46–47 (citing Ex. 1006, 11). With respect to storing a complete file, Petitioner argues that "[w]hen the object is a file, such as an Internet webpage, then a complete file is stored." Pet. 47. Petitioner contends that Rabinovich's objects are inherently composed of pieces—i.e., bits and bytes that are assembled into packets for transmission—and that "[t]he sheer existence of replicas means that objects are redundantly stored in the hosts/servers." *Id.* (citing Ex. 1006, 1, 24 (Table 2); Ex. 1005 ¶ 325).

Element 1[d] of independent claim 1 recites:

> wherein at least one of the data storage units and computer unit measures a data transmission performance between at least one of the data storage units and the computer unit, the at least one piece being stored by the computer unit in a redundant manner in the data storage units as a function of the measured data transmission performance, and the computer unit accessing the at least one of the data storage units as a function of the measured data transmission performance

Ex. 1002, 26:6–15. Because Petitioner is relying on Rabinovich's hosts, rather than its clients, as the recited "computer unit," it argues that this limitation is met by Rabinovich's disclosure of hosts "determin[ing] whether to replicate or migrate data based upon the data transmission performance measurements between itself and other hosts/servers (the "data storage

units") for each of the data objects stored." *Id.* at 48 (citing Ex. 1006, 2, 10–17; Ex. 1005 ¶¶ 330–333).

At this stage, Patent Owner does not dispute Petitioner's contentions.

On this record, we are persuaded that Petitioner's citations support Petitioner's contentions with respect to claim 1. Having reviewed the arguments and evidence with respect to claims 3, 5, and 7–15 (Pet. 48–56), we also are persuaded that Petitioner's citations support Petitioner's contentions with respect to those claims.

*2. Conclusion*

On this record, we are persuaded that Petitioner has established a reasonable likelihood that it would prevail in showing that claims 1, 3, 5, and 7–15 are unpatentable under 35 U.S.C. § 102 as anticipated by Rabinovich.

### *F. Claims 2, 4, and 6 — Obviousness over Rabinovich (Ground 3)*

Petitioner argues that claims 2, 4, and 6 are unpatentable under 35 U.S.C. § 103(a) as obvious over Rabinovich. Pet. 56–57. Petitioner presents this as a third ground based upon an alternative claim construction of the term "computer unit." We addressed Petitioner's contentions in our analysis above of Ground 1 and determined that Petitioner has established a reasonable likelihood of showing that claims 2, 4, and 6 are unpatentable as obvious over Rabinovich under our construction of "computer unit." As a result, this ground is moot.

## III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 1–15 of the '680 patent.

## IV. ORDER

Accordingly, it is

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted on the following grounds:

1. Claims 1–15 under 35 U.S.C. § 103 as obvious over Rabinovich; and
2. Claims 1, 3, 5, and 7–15 under 35 U.S.C. § 102 as anticipated by Rabinovich;

FURTHER ORDERED that trial is not instituted on any other ground; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(d) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial on the grounds of unpatentability authorized above; the trial commences on the entry date of this Decision.

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