

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VMWARE, INC.,
Petitioner

v.

INTELLECTUAL VENTURES I LLC,
Patent Owner

Case IPR2020-00470
Patent 7,949,752

**PATENT OWNER'S RESPONSE
PURSUANT TO 37 C.F.R. § 42.120**

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PATENT OWNER'S UPDATED EXHIBIT LIST

Exhibit No.	Description
2001	Joint Claim Construction Statement, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 17, 2020.
2002	Defendant's Preliminary Invalidity Contentions, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, January 15, 2020.
2003	Order Resetting Markman Hearing, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 16, 2020.
2004	Exhibit C-1: Invalidity Chart for U.S. Patent No. 7,949,752, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, filed July 31, 2019.
2005	Preliminary Claim Construction Rulings, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, May 14, 2020.
2006	Disputed Claim Terms, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 17, 2020
2007	Plaintiffs' Claim Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, March 6, 2020
2008	Defendant VMware, Inc.'s Opening Claim Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, March 6, 2020

Exhibit No.	Description
2009	Defendant VMware, Inc.’s Responsive Claim Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, March 27, 2020.
2010	Plaintiffs’ Reply Claim Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 10, 2020.
2011	Defendant VMware Inc.’s Reply Claim Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 10, 2020.
2012	Plaintiffs’ Supplemental Construction Brief, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, May 13, 2020.
2013	Defendant’s Supplemental Claim Construction Statement, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, May 13, 2020.
2014	Intellectual Ventures’ Technology Tutorial of the ’752 patent, <i>Intellectual Ventures I, LLC et. al. v. VMware, Inc.</i> , No. 1:19-cv-01075, U.S. District Court for the Western District of Texas, April 24, 2020.
2015	Curriculum Vitae of Prashant Shenoy, PH.D.
2016	Declaration of Prashant Shenoy, PH.D. in Support of Patent Owner’s Response
2017	Nieva, Richard, “At Premiere of General Magic Doc, Tech Icons Consider the Future,” Cnet.com (July 27, 2018)
2018	U.S. Trademark Registration No. 4,425,780 (filed Dec. 15, 2007)

Exhibit No.	Description
2019	Remote Deposition Transcript of Darrell Long, Ph.d. (October 28, 2020)
2020	Milojčić et al., “Process Migration,” ACM Computing Surveys, Vol. 32, No. 3, 241-299 (September 2000)

I. Introduction

The Petition asks the Patent Trial and Appeal Board (“PTAB”) to believe that a junior programmer in 1998 would have *simply* and *predictably* converted a local web client designed to respond to a static web site’s pages (Chow) into a remote programming agent that could install itself on servers across the internet to create dynamic content (allegedly, White). Of course, this is not the case.

Grounds 3 and 4 of the Petition, arguing the combination of Chow and White (with Bauer), fail both because there is no rationale to combine the references and because the combination renders Chow inoperable for its intended purpose.

Grounds 1 and 2 of the Petition require the PTAB to adopt a claim construction that is different from the one the Petitioner agreed to and several courts have adopted. Under the proper construction, the Chow reference (with Bauer) fails to teach or suggest an “agent.”

And separately, Grounds 1 through 4 of the Petition require the Board to accept that a “service resource” can be money despite intrinsic evidence to the contrary and the lack of any evidence in support of such a construction. Because none of the prior art teaches or suggests such a combination, the Board should find the challenged claims patentable.

II. Background

A. Summary of the '752 patent

U.S. Patent No. 7,949,752 (“the '752 patent”) represents a substantial leap over the prior art. The closest prior art reference, Chow, has no server side agent, no mobile programming at all, and is only concerned with downloading static web pages. White does not cure these defects.

1. General Magic

The invention of the '752 patent was conceived by a team at a company called General Magic—a company founded in the 1990s by members of the original team that created the Macintosh Computer. EX1002, 163, 170. The team at General Magic created the enabling technology that underpins modern smart devices. EX2017, 2. The inventors of the '752 patent recognized the limitations of the prior art and improved upon it.

2. Prior art systems required extensive customization by the service provider

Before the '752 patent, conventional systems integrating networked services had a number of deficiencies. For example, the existing systems integrating networked services of computers and telephones (like email and PIM vs. voice-mail and directory, etc.) came pre-packaged from service providers. EX1001, 1:56–2:4. Customers of the service providers could not customize or add features or integrations to the existing systems. At most, customers of existing systems could

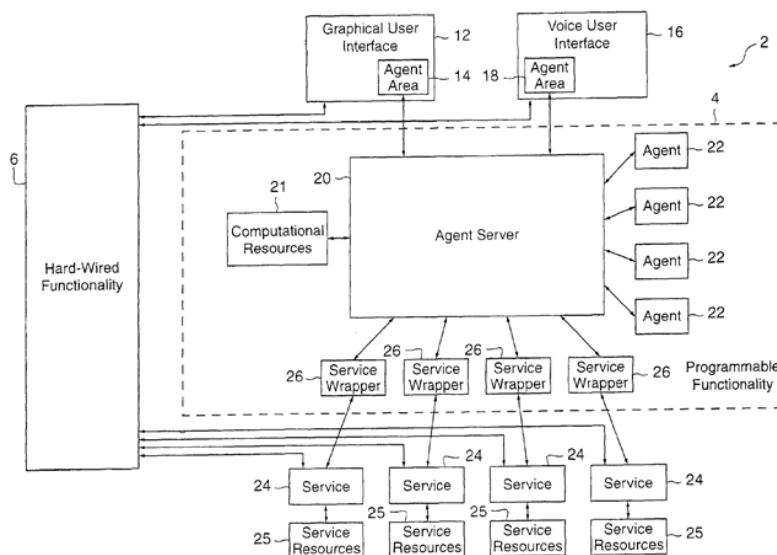
request that the service providers perform specific customizations or upgrades. *Id.*, 2:5–34. These systems did not allow control for server-side programming; they certainly did not allow an agent to traverse from one computer to another. And the programming paradigm of this art was largely focused on dealing with static content on a server, not dynamically programming a remote computer. EX2016, ¶28.

Because of these problems, service providers incurred significant overhead to remain competitive. Although some systems allowed end users to request that the service providers add desired customizations or upgrades, service providers' existing systems did not easily allow this. EX1001, 2:12–25. Service providers instead created bespoke solutions for each requesting customer, incurring costs and delays, or risked losing the customer to competing service providers able to provide the desired functionality with more agility—no existing systems allowed users to directly customize services. *Id.*, 2:25–34.

Due to the above-noted deficiencies, prior-art systems failed to provide users a convenient system that was efficient for service providers to operate competitively.

3. The '752 patent is an improvement over the prior art because it allows end-user customization of network-based services

Recognizing these problems with prior systems, the inventors of the '752 patent invented a novel network-based agent architecture that allowed users to implement their own customized services and to contract with third parties to provide customized services, without including the service provider. EX1001, 2:38–3:43; *see also id.*, FIG. 1 (reproduced below). The '752 patent describes a sophisticated architecture for service providers to implement, independent from client infrastructure of subscribers (users). EX1001, 2:42–51. In this way, users do not need to redesign the service provider's infrastructure or demand that the service provider make changes to its own architecture to accommodate each end user.



EX1001, FIG. 1

As shown above in Figure 1, a service provider operates a network system 2 to provide technological services to users (or subscribers). EX1001, 5:32–42. Communication lines allow access for users to interact with network system 2 via various interfaces. *Id.*, 6:5–27, 6:49–60 (interfaces 12 and 16 connect to network system 2 by communication lines as described in column 6 but not labeled in Figure 1.) Programmable functionality component 4 can be programmed “by subscribers or third parties,” *id.*, 5:55–6:4, unlike prior art systems including those cited by the Petition.

The ’752 patent specifically refers to users being subscribers of the provider. That is to say the user, not a service provider, is in charge of customization. The Petition’s prior art—Chow (EX1018), Bauer (EX1019), or White (EX1020)—does not show the novel user customization of the ’752 patent. Instead, the art shows a service provider performing alleged custom agent functionality for users, which would be inapposite to the primary purpose of the invention of the ’752 patent.

Here is an exemplary claim of the ’752 patent:

1. A system for performing user customized network-based operations, comprising:

means for receiving data for creating a network-based agent;

means for invoking, in response to receiving a URL defining a type of event and identifying the network-based agent, an execution of the network-based agent;

means, including the network-based agent, for using a service and a service resource configured to be consumed by the network-based agent for performing the operation,

wherein an amount of the service resource is exhausted upon being consumed by the network-based agent; and

means for communicating a result of the operation over a network communications link.

EX1001, 25:55–26:2.

The '752 patent thus describes and claims a novel and innovative feature set that allows end-user customization of network-based services. These features of the '752 patent were crucial to the development of modern integrations of network-based systems like telephone, e-mail, and Personal Information Management a decade before the iPhone debuted. *See* EX2018 (first used in commerce on June 29, 2007).

B. There is no dispute over the level of skill in the art.

The Patent Owner agrees that, for the purposes of this *inter partes* review (“IPR”), a person of ordinary skill in the relevant art (“POSA”) at the time of filing would have had “a bachelor’s degree in computer science or electrical engineering

and at least two years of experience in computer software systems.” EX2016, ¶¶14–18.

III. Claim Construction

A. Agent means a process that occupies a place and that is mobile, i.e., can move from a first place to a second place

1. Agent as defined by the Specification

“Agent” means “a process that occupies a place and that is mobile i.e. can move from a first place to a second place.” EX1020, 15:59–67, *incorporated by*, EX1001, 5:27–31; EX2016, ¶¶85–87. The Petitioner has stipulated in the accompanying district court case that this claim construction is correct. EX2001, 2. The district judge issued an order adopting this construction. EX3001, 1. A magistrate judge reached this same claim construction in an earlier case. EX1009, 24–26. And the Board has adopted this construction in its Institution Decision. ID, 13. Neither party has presented the Board with any reason to deviate from this definition. *See* 37 C.F.R. 42.100(b) (“Any prior claim construction determination concerning a term of the claim in a civil action... will be considered.”).

Indeed, the Petition tacitly agrees with this by recognizing that its alternative construction of agent is sufficiently weak as to require an entirely duplicative set of arguments.

For these reasons, the Board should continue to use the construction of agent that it previously adopted.

2. Agent according to the plain meaning

In the event the Board incorrectly construes agent according to its plain and ordinary meaning, this meaning must be narrower than merely any program. *See, infra*, Section V.C.

B. Service resource means a resource which enables a service to be performed

The specification of the '752 patent defines “service resource” as “a resource which enables a service to be performed.” EX1001, 10:62–63; EX2016, ¶70. Every example in the specification of the patent is consistent with this definition. *Id.*, 10:61–66; EX2016, ¶¶71–73. And the great weight of evidence also supports this.

Money is not a “service resource.” The '752 patent states that a “service resource... is a resource which enables a service to be performed.” EX1001, 10:61–63; EX2016, ¶70. Examples of a service resource include “call processing service,” “a telephone, answering machine, a telephone line, a local telephone provider service, a long distance telephone provider services, etc.” *Id.*, 10:63–66; EX2016, ¶¶71–73.

The specification repeatedly discusses “service resource[s]” in contexts that do not identify costs, let alone monetary cost. For example, the '752 patent teaches that service resources associated with on-line data retrieval “may comprise units of data-access time or inquiry... (e.g., stock quotes, newspaper articles, etc.).” EX2016, ¶72. Thus, “service resource[s]” are limited to things related to services

and exclude money. EX2016, ¶¶74–84. The specification is clear that “service resource[s]” have, at best, a distal relationship with money: “a service wrapper [] may maintain a record of the amount of service resources [] consumed by the various agents so that the appropriate users/principles can be billed accordingly.” EX1001, 12:6–12.

Tracking who should be billed or the amount to be billed is far from spending actual money in real time. Here, the specification unambiguously only associates money (e.g., billing) with whether and what a user is being charged for the consumption of “service resource[s]”. Money is not the service resource itself. The ’752 patent provides additional support for this understanding throughout the specification. For example, one embodiment taught by the ’752 patent is a “web server service [] and its associated service resources.” *Id.*, 17:1–15, 17:41–43; EX2016, ¶73. This does not mean a web server and its associated *costs*. Rather, it refers to a resource that enables a service to be performed.

The Petitioner’s own expert testimony supports Patent Owner’s construction. Dr. Long testified that a POSA used the term “cost” to mean monetary cost (and many other things). EX2018, 40:6–41:2 (“So typically, it’s very common to think we just often in computer science just say cost. Or we will say a resource is consumed and we will say it’s more expensive to use this resource this way than that other way.”). But Dr. Long cannot point to anything illustrating why the

claimed “service resource” should include a monetary cost. *Id.*, 41:2–9. Indeed, Dr. Long testified repeatedly that “cost” is a *resource* without ever referring to it as a “service resource,” or explaining how a cost equates to the use of a service resource including a monetary cost. EX2018, 40:6–41:9; *see* EX2016, ¶76 (discussing use of “cost” for overhead without referring to “monetary cost”). In other words, Dr. Long’s testimony appears to use the term “cost” to quantify the expenditure of resources resulting from using a service resource, which is consistent with Patent Owner’s position and contrary to Petitioner’s.

Finally, claim differentiation supports the proposition that a service resource cannot be money. Specifically, claim 13, which depends from claim 9, refers to invoking an agent using a “service wrapper” to act upon the service resource. EX1001, 27:3–4; 26:55–60; EX2016, ¶¶83–84. This is completely consistent with the specification, which discusses service wrappers as linking service resources with agents. EX1001, 11:18–21. This makes sense in the context where service resources are characteristics of a service. A construction of “service resources” that includes money is inconsistent with all these points and is wrong.

Service resources cannot be money or monetary cost regardless of whether the Board adopts the Patent Owner’s proposed claim construction or construes it according to its plain and ordinary meaning. EX2016, ¶82. No reasonable

construction of this term can possibly define service resources to include money.

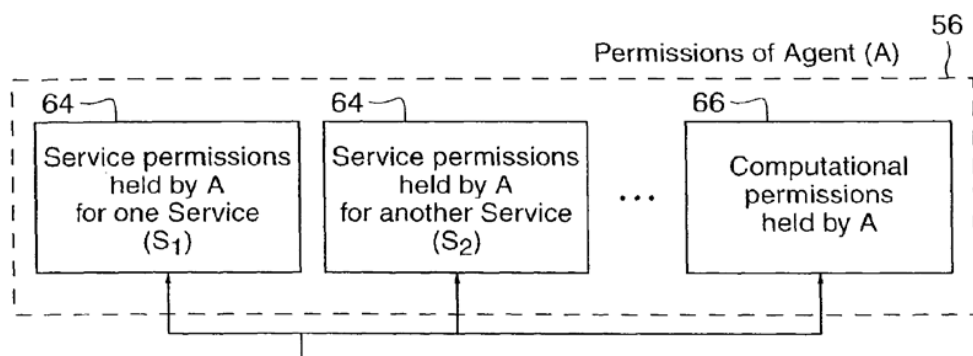
Id., ¶78.

C. Service permission means permissions to ensure that other agents have adequate service resources

The '752 patent, in claim 14, adds the limitation “identifying, using the service wrapper, service permissions associated with the network-based agent.”

The '752 patent teaches that “service permissions” mean “permissions [to] ensure that other agents... have adequate... service resources.” EX1001, 9:45–51;

EX2016, ¶105. Figure 13 shows this diagrammatically, depicting various “service permissions” within the category of “Permissions of Agent (A)”:



EX1001, FIG. 13 (excerpt); see EX2016, ¶108.

This claim term specifically refers to permissions, within computer systems, to execute certain tasks. This cannot mean (nor does the Petition seem to allege it means) that the agent can determine what web pages it can (or cannot) access.

EX2016, ¶¶104–113. This distinction is not trivial. Whether a computer program

(or agent) has authority to access a certain web page might concern *some* type of permission. EX2016, ¶112. But the requirement that these permissions must “ensure that other agents have adequate resources” makes it plain that the POSA would have understood that web page access permissions on a remote web server was not within the claim scope. *Id.*, ¶113. The service permissions claimed are authorizations that permit the agent to run on a computer and not, as the Petition contends, an agent’s ability to ascertain what web pages a user can access.

IV. Asserted References

A. Chow teaches a stationary program on a Revision Manager that periodically checks for static content unrelated to Remote HTTP Servers

U.S. Patent No. 6,029,175 (EX1018, “Chow”) purports to describe “a software agent for automatically retrieving changed documents previously accessed from network and internetwork servers.” EX1018, 3:60–64. Chow may retrieve static web pages or documents from private sources, comparing changes and considering “costs associated with retrieval,” including various charges. *E.g.*, *id.*, 18:50–19:7, 25:52–26:17, 28:2–52; *see* EX2016, ¶115.

The purpose of Chow, though, is a system that is entirely “backwards compatibl[e]” and does not require “[c]hanging the behavior of the standard browser and server software.” EX1018, 3:52–57; EX2016, ¶126. Chow recognized that its options are necessarily limited because it cannot change web servers “now

in use by millions of people.” EX1018, 3:54–56. Accordingly, Chow teaches a separate computer—a Revision Manager—that “acts as an intermediary between a browser client... and a Remote HTTP [S]erver.” *Id.*, 9:53–54; EX2016, ¶127. The Revision Manager is “linked” to the client and the Remote HTTP Server “by standard internet connections.” EX1018, 9:25–27.

Dr. Long’s explanation of Chow was consistent. During cross-examination, Dr. Long stated that “the idea” of Chow “was *not* to replace the [Remote] HTTP [S]erver but to add an additional functionality that would provide the stateful behavior.” EX2019, 32:1–7 (emphasis added); *accord* EX2016, ¶128. Dr. Long reiterated this point, saying that Chow was only about “interpos[ing] a stateful Revision Manager” and that “Chow didn’t modify the [Remote] HTTP [S]erver.” EX2019, 32:8–17. This undercuts the Petition’s entire motivation-to-combine theory, which says that a POSA would understand that Chow would be modified to reprogram the Remote HTTP Servers. Pet., 59 (“Given the teaching that remote programming was preferable to remote procedure calling, a POSITA would have been motivated to modify the remote procedure calling agent process in Chow with a remote programming agent process like the one taught in White....”); *see* EX1005, ¶89 (discussing the combination of Chow and White). Since the explicit purpose of Chow was to find a way to mediate between unmodified HTTP servers and clients, changing Chow to instead modify said servers is illogical and would

render Chow inoperable for its intended purpose. EX2016, ¶¶125–128.

Furthermore, the Chow disclosure does not teach any server side agent being executed.

To the contrary, as confirmed by Petitioner’s expert, all of Chow’s scripts actually reside on the Revision Manager. Dr. Long was clear that “[y]ou cannot execute a script that is not on your computer.” EX2019, 37:10–38:6. Knowing that Chow’s Revision Manager could not execute programs on the Remote HTTP Server was—according to the Petitioner’s expert—“freshman computer science.” *Id.*, 37:10–38:6; EX2016, ¶130. In fact, Dr. Long went far beyond characterizing this as a limitation of just Chow.

Dr. Long’s own words tell us that for a POSA at the time of Chow, using a remote programming paradigm might even have been impossible. Dr. Long told the Board, on cross-examination, that Chow’s inability to execute a script that is not on its own computer is a “mental experiment,” given after an offer of “do[ing] a little tutorial of computer architecture.” EX2019, 36:22–37:9.

Chow’s Revision Manager is not a server that controls or otherwise issues agents to control the Remote HTTP Server. Quite the opposite, from the perspective of the Remote HTTP Server, the Revision Manager is just another a client. EX2016, ¶129. This is not an incidental omission. Rather, it is an essential feature of Chow’s system and framework. Chow is clear—the Revision Manager is

merely another computer that asks a Remote HTTP Server for a web page.

EX2016, ¶¶129–131.

Chow’s agent is also not “mobile”—the Petition does not contend otherwise—a critical omission, as shown below. Pet., 21–22; *see, infra*, Section V.C. Indeed, the program of Chow resides—and executes—on the Revision Manager alone, a fact Dr. Long essentially admits. EX2019, 36:22–37:9.

Further, the Revision Manager of Chow has very simple functionality. It is strictly limited to monitoring static content on Remote HTTP Servers. EX2016, ¶¶114–131. The Revision Manager does not (and cannot) execute complicated scripts on the Remote HTTP Server. EX2016, ¶130.

B. White teaches that there are two unrelated, different system paradigms regarding remote computing and teaches an improved system for one of those paradigms

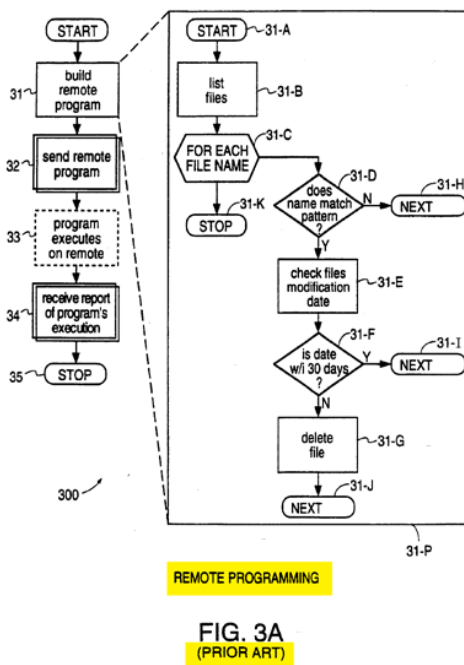
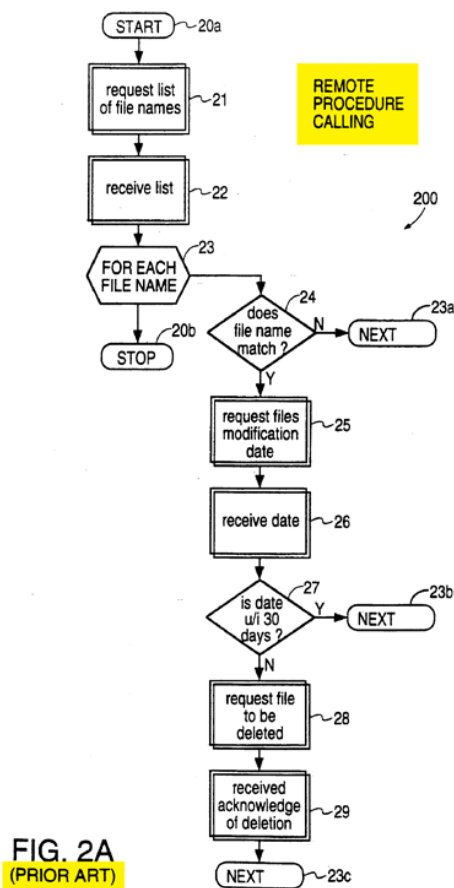
U.S. Patent No. 5,603,031 (EX1020, “White”), which is commonly owned by Patent Owner and incorporated by reference by the ’752 patent, describes “an agent” that is enabled to “transport itself from a first place process... in [a] network to a second place process in the network.” EX1020, 8:27–38. In other words, White describes an agent as “a process which occupies a place and which is mobile, i.e., [] can move from a first place to a second place.” *Id.*, 16:65–67.

White does *not* teach improving a remote process call by using remote programming. EX2016, ¶137. Rather, White describes remote programming as an

entirely different scheme from remote procedure calls. EX1020, 4:22–28; EX2016, ¶¶138–140. In fact, White’s background lays out two different, alternative *paradigms* for remote computing (i.e., remote procedure calls and remote programming) that are not simple substitutions for one another. The structure of White demonstrates this.

First, White discusses remote procedure calls in the background. EX1020, 2:66–67 (“Many computer communications systems implement what is called ‘remote procedure calling.’”). White explains that remote procedure call systems have a “server process [that] performs any of an inevitably finite list of operations on behalf of the client process.” *Id.*, 3:6–8. White then discusses how remote procedure calls work, beginning with a logic flow diagram of Figure 2A. *Id.*, 3:16–4:21; 13:39–40 (“FIG. 2A is a logic flow diagram of a prior art method using remote procedure calling.”).

Second, White’s Background discusses a completely different paradigm for remote computing, “remote programming.” *Id.*, 4:22–23. The background then describes how remote programming works, beginning with a logic flow diagram of Figure 2B. *Id.*, 4:32–39; *accord id.* 13:42–45 (“FIG. 3A is a logic flow diagram of a prior art method using remote programming.”) Here are Figures 2A and 3A, both stamped “prior art” by White:



EX1020, FIGs. 2A and 3A (annotated).

White also describes systems that are an “improvement over remote programming” described by Wolfson. EX1020, 5:40–43. And then White explains another method described by Tsichritzis, which was an object oriented system that “added to the system described by Wolfson.” *Id.*, 6:7–9. White finishes its background by describing the limitations of the prior art remote programming references, Wolfson and Tsichritzis. *Id.*, 7:1–23.

Next, White’s Specification summarizes how it improves on the object-oriented remote programming systems. *Id.*, 7:25–34.

White does not teach or suggest that that its improved remote programming paradigm can be substituted—or is in any way coextensive with—the discussed prior art remote procedure call paradigm. EX2016, ¶¶138–140. While White discloses two distinct prior art alternatives (remote procedure calling and remote programming), it teaches only an improvement on remote programming. EX2016, ¶¶137–140. Nothing in White teaches or suggests to a POSA that remote programming can substitute for remote procedure calls. Rather, White teaches that they are two different, incompatible paradigms, and that remote programming can be improved upon. EX2016, ¶¶263, 137. As White says, “the process of this invention are a novel implementation of ‘remote programming,’ and not the more familiar ‘remote procedure calling’ paradigm.” EX1020, 9:17–20. White never teaches a POSA to use remote programming in place of remote procedure calls.

Throughout the disclosure, White contrasts remote programming and remote procedure calls as nothing less than a “paradigm shift.” EX1020, 127:47–49; *see, e.g., id.*, 11:50–52 (“The paradigm of this prior art system is therefore more closely related to remote procedure calling”), 11:56–59 (“Therefore, the paradigm of the present invention is more closely related to remote programming”), 19:63–67 (“In remote programming paradigms typically found in the prior art...”); 20:9–12 (“[C]omputer processes of the present invention represent a substantial extension of the traditional remote programming paradigm”); 108:3–5 (“Thus the Instruction

Set implements remote programming (RP), not the more familiar remote procedure calling (RPC) paradigm.”). There is no greater change than a paradigm shift. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1260 (Fed. Cir. 2005) (Gararsa, J. dissenting) (emphasizing a “paradigm shift” is not a small change).

It would have thus been above the skill of a POSA to implement the White system suggested by the Petition. EX2016, ¶¶259–263. As Dr. Long, Petitioner’s expert, told the PTAB, “you cannot execute a program that is not on your computer... It just does not make any sense.” EX2019, 36:22–37:9.

Thus, nothing in White suggests that a POSA could simply substitute remote programming in place of remote procedure calls. And a POSA would not even know how to do so.

C. Bauer teaches a networked agent

U.S. Patent No. 5,367,635 (EX1019, “Bauer”) purports to describe “a network management agent having the capability of adding new objects to the agent without requiring modification of the agent source code and without stopping and restarting the agent. These new objects can then be used by network management users to initiate user defined processes.” EX1019, 3:46–51. When Bauer refers to a “user,” Bauer makes it clear that the “‘user’ is a person using the network management software. The user is usually the system administrator. Users can obtain management data and alter management data on the network by using

network management software.” *Id.* at 1:18–30. Petitioner does not rely on Bauer for the claimed agent. Pet., 29–30.

V. Arguments

A POSA would not have combined Chow and White in the way described by the Petition for two reasons. First, a POSA would not have had a motivation to combine Chow and White. Second, White’s additional would render Chow inoperable for its intended purpose. And even if Chow and White are combined, the combination does not teach the “service resource” limitation within the meaning of the claims.

A. Grounds 3 and 4 fail because Chow and White are not a proper obviousness combination for two reasons

The heart of the Petition’s obviousness argument is that a POSA would have combined the Revision Manager of Chow with the remote programming of White to achieve the claimed system. Pet. 58–59. This argument is wrong for two reasons. First, a POSA would not have been motivated to combine Chow with White. Second, the combination of Chow and White renders Chow unsuitable for its intended purpose.

1. The Petition’s obviousness rational for Chow and White is factually wrong

Under *In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017), there must be a rationale for combining two references, like White and Chow. The Petition’s only

rationale, provided by Dr. Long, is that adding the mobile agent of White to the system of Chow is a “simple substitution... [with] predictable results.” EX1005, ¶189; *accord* Pet. 59 (“[A] POSITA would have been motivated to modify the remote procedure calling agent process in Chow with a remote programming agent process... in White because the combination would be the simple substitution of one known technique for another and would have obtained predictable results.”); EX2019, 21:15–20. The Petition does not explain why this combination is a simple substitution, nor is there expert testimony explaining why a POSA would have understood the results to be predictable. In fact, using “remote programming” in the form of a mobile agent usable across Chow’s wide variety of different types of computing environments was a difficult task at the time of the invention. EX2016, ¶¶258–265.

Remote procedure calls are not remote programming. A POSA understands that they are not even similar. EX2016, ¶264. Indeed, White repeatedly discusses them not as different tools or techniques, but rather as different *paradigms*. *See* EX1020, 3:6–15 (stating that remote processes “perform any of an inevitably finite list of operations on behalf of a client process”), 5:22–25 (“Note also that [the] client process 352 was able to request of [sic] server process 354 an operation not explicitly provided by... server process 354.”). The process of White is far from a simple substitute for the prior art remote process calls from Chow. EX2016,

¶¶258–266. And White doesn’t teach how to convert a system from one based on remote procedure calls to one based on remote programming. EX2016, ¶263.

It is no exaggeration to say that Chow teaches how to keep track of a static website and White teaches a new way to write a program that can travel across the internet and install itself on other machines. EX2016, ¶¶137–140, 258–268. Using a remote programming paradigm is incredibly difficult. Petitioner’s expert, Dr. Long was clear that “[y]ou cannot execute a script that is not on your computer.” EX2019, 36:22–37:9. Knowing that Chow’s Revision Manager could not execute programs on the Remote HTTP Server was—according to the Petitioner’s declarant—“freshman computer science.” *Id.*, 37:10–38:6

Chow teaches a system for communicating with a wide variety of Remote HTTP Servers. Indeed, Chow’s disclosure is designed to connect “over 3 million WWW users accessing 10,000 Web servers.” EX1018, 1:63–65. The Chow disclosure alone identifies three different web servers and 24 web browsers or packages. EX1018, 1:60–61, 1:66–2:6, 2:13–17. It is not simple—even today—to create a mobile agent interoperable among these many different platforms. EX2016, ¶¶137–140, 268–272.

Creating a mobile agent that would be usable in the Chow system (at the time of the invention) would have been far more difficult than a POSA could accomplish. *Id.*, ¶¶137–140. Creating a mobile agent to communicate to a variety

of internet-connected computers was complicated at the time of the invention. *Id.*, ¶¶137–140, 262–272. A programmer seeking to implement this technology would need to create a completely new computer environment, where a mobile program is created with adequate permissions to run on various computers on a network. *Id.*, ¶269.

Dr. Shenoy explains this in detail—that a junior programmer (a POSA) could not, in 1998, write a universal program that runs itself on different computers. *Id.*, ¶¶269. There is no simple substitute that can replace a server with a mobile agent. *Id.*, ¶¶138–140. And White does not suggest that the creation of its agent is easy. White is not a slim reference discussing the substitution of one type of process for another. To the contrary, the disclosure of White spans 370 columns and has 106 pages of figures discussing different paradigms. At the time of the invention, virtual computing environments were relatively uncommon. A POSA could not have simply created a generic mobile agent applicable across the broad array of Remote HTTP Servers disclosed in Chow.

At best, White teaches a new paradigm for mobile computing. But it is flatly untrue to state that White’s disclosure teaches a simple, plug-and-play solution for replacing a server with an agent.

**2. The combination of Chow and White articulated in the
Petition renders Chow inoperable for its intended purpose**

To support a finding of obviousness, a combination cannot render the art “inoperable for its intended purpose.” *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F.App’x 755, 760 (Fed. Cir. 2015). The Chow reference’s intended purpose is to communicate with a Remote HTTP Server that cannot “automatically [] update a page.” EX1018, 2:44–46; EX2016, ¶117. But the White reference would modify Chow to deal with a system that *does* automatically update pages and a host of other tasks. Thus, the combination of Chow and White renders Chow inoperable for its intended purpose.

Chow taught a way to overcome the limitations of ubiquitous, already-deployed HTTP Servers by using a Revision Manager to track changes in remote servers. EX2016, ¶¶273, 128. Chow explicitly taught that its invention was necessary because “there is no way in the current HTTP model for the server to contact a client [and] inform” that client of data changes. EX1018, 3:8–10; EX2016, ¶116, 275. Chow’s disclosure takes place in an environment where it cannot control web servers because they are *other people’s* computers with *other people’s* information on them. EX2016, ¶¶120–126. So a POSA would have recognized that Chow was incompatible with—and indeed irrelevant to—systems that could run remote agents on the Remote HTTP Servers. EX2016, ¶¶273–276. Nothing in Chow teaches or suggests otherwise.

Again, Chow teaches a system that will not allow remote agent control over a server. Chow's Revision Manager intermediates between the Remote HTTP Server and a client. Figure 18 shows Chow's Revision Manager merely requests the contents of the public HTTPD directory of the Remote Server:

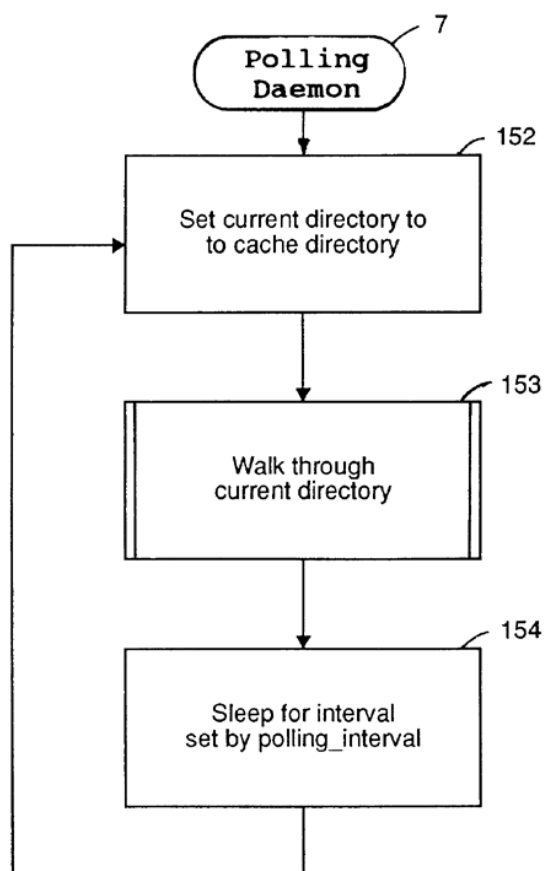


FIG. 18

EX1018, FIG. 18.

And figure 7 shows that a POSA would have known that Chow's polling daemon is a remote procedure call that is not seeking execution of some arbitrary remote task by a computer:

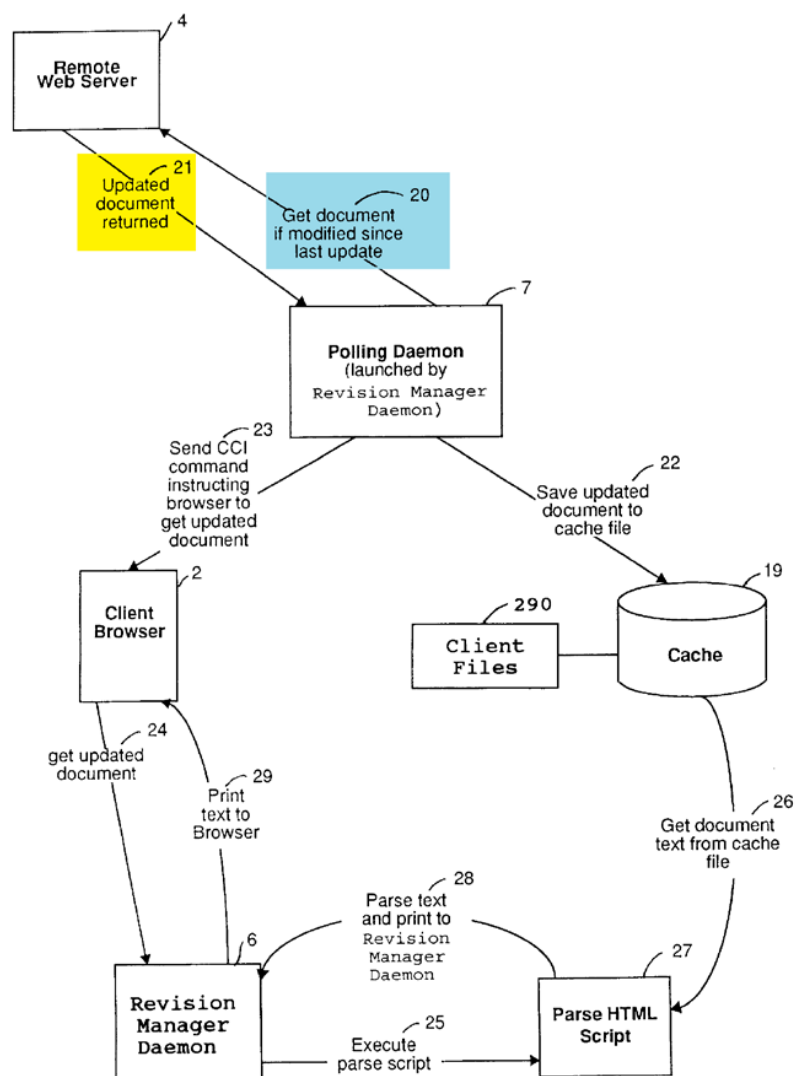


FIG. 7

EX1018, FIG. 7 (annotated).

Rather, it is a computer asking another computer what public information is available. The only communication from the Revision Manager to the Remote HTTP Server is shown in blue: a request for information. And the only communication from the Remote HTTP Server to the Revision Manager is shown in yellow: a directory listing.

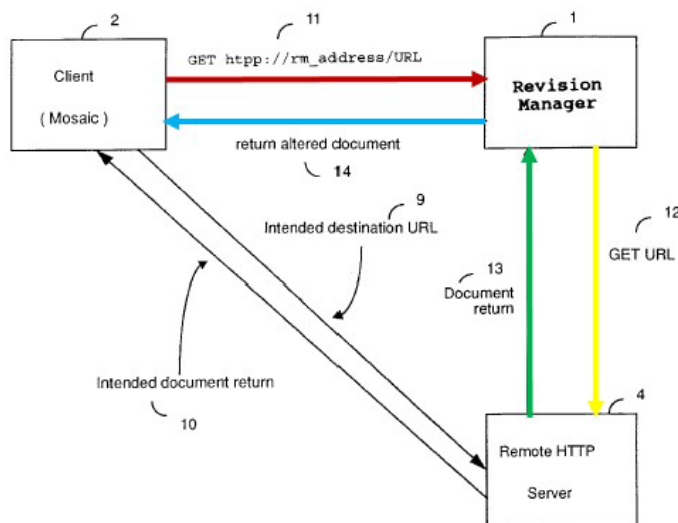
White, by contrast, is directed to programs executed on a remote computer. If, as Petitioner suggests, White can be merely substituted into Chow, the Revision Server of Chow is not only unnecessary, but is impossible. If the Remote HTTP Server alerted the remote client each time a webpage was updated, there would be no need for a Revision Server. EX2016, ¶¶273–276. The whole internet would be entirely different. And the problem Chow is directed to resolving simply would not exist. EX2016, ¶276.

Even the embodiment of Chow that discloses a stationary agent version of Revision Manager running on the same hardware as the Remote HTTP Server demonstrates the incompatibility of Chow with White. EX1018, 9:41–44. This type of local agent is merely an implementation of the Revision Manager. There would be no need for a Revision Manager if the Remote HTTP Server could perform all of the Revision Manager functionality. EX2016, ¶¶274–276.

Similarly, the Petition relies on the notion that the Chow system can make cost-determinations to decide which of multiple sources should be contacted. Pet.,

39; EX1018, 26:5–14. Deciding which of multiple possible web sites to access is essential to the teaching of Chow; if Chow could get the information directly from each web site, there would be no Revision Manager to make these kinds of cost determinations. EX2016, ¶¶180–181. This is exactly the kind of function that shows Chow’s Revision Manager was simply incompatible with a remote agent system. If Chow’s Remote HTTP Servers alerted each client of new material, a POSA would never have sought to use the White disclosure. EX2016, ¶¶274–276.

The Petition’s own explanation of Chow confirms that Chow can only be understood in the context of a system that *does not* include a remote agent:



Pet., 27; EX1018, FIG. 3 (annotated).

Pet. 34; *cf.* EX1018, 4:1–3 (“The Revision Manager is viewed by the network server as a kind of client that fetches documents from the network server”), 11:27–

30 (“[I]t acts like a client to the remote servers that it connects to in order to retrieve the documents for its own clients.”).

The addition of the remote agent of White would change the basic principle of operation of Chow. It would no longer be directed to a system that monitors remote computers to keep a client updated. Rather, it would become an agent that directly communicates with those same remote computers. If the Remote HTTP Server can do everything that Chow tries to accomplish, the system can just use the intended destination URL and the intended document return—without a Revision Manager. *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F.App’x 755, 760 (Fed. Cir. 2015).

Thus, Chow is inoperable if it is combined with the remote agent scheme of White.

3. Claim 14 is patentable because it does not teach security permissions within the meaning of the claim

As described above, the term service permissions means permissions to ensure that other agents have adequate service resources. This term is defined in the specification as described above. *See, supra*, Section III.C. Contrary to the Petition’s arguments, the Chow and White combination does not teach security permissions within the meaning of the properly construed claims.

The failure to teach this is illustrated by claim 14, incorporating the limitations from the independent claim from which it depends”

9. A system for performing user customized network-based operations, comprising:

a processor; and

a memory storing instructions,

execution of which by the processor causes the system to perform operations comprising:

receiving data for creating a network-based agent;

invoking, in response to receiving a URL defining a type of event and identifying the network-based agent, an execution of the network-based agent

wherein the execution of the network-based agent comprises using a service and a service resource configured to be consumed by the network-based agent when the network-based agent performs the operation, and

wherein an amount of the service resource is exhausted upon being consumed by the network-based agent, and

communicating a result of the operation over a network communications link.

13. The system of claim 9,

wherein the operations further comprise invoking execution of the network-based agent using a service wrapper.

14. The system of claim 13,

wherein the operations further comprise:

identifying, using the service wrapper, service permissions associated with the network-based agent;
and

determining, using the service wrapper, whether the service permissions include permissions required by the service wrapper to execute the network-based agent.

Claim 14 adds the limitation that the system performs the additional operation of, among other things, “identifying, using the service wrapper, service permissions associated with the network-based agent.” This identification of permissions is essential to the functioning of the network based agent because it seeks to operate across platforms. It, therefore, requires a means by which to ensure the agent (and copies thereof) have adequate permissions to execute. EX2016, ¶¶213–218, 281.

The Petition fails to advance facts showing that Chow, White, Bauer, or some combination taught the “service permissions” element. Pet., 44; EX1005, ¶152 (identifying service permissions without explanation). But this is entirely

irrelevant to the claim limitation, which deals with the permissions of the *other agents*, and for that matter, permissions designed to ensure those other agents have sufficient service resources, not access-based security permissions. *See, supra*, Section III.C.

For this additional reason, claim 14 is not invalid as obvious over Chow in view of White.

B. Grounds 1–4 fail because neither Chow nor White (either alone or in combination) teach all the elements of the ’752 patent because they do not teach tracking service resources to exhaustion

The Petitioner argues that obtaining a document for a price exhausts a resource. Pet., 52; EX1005, ¶115. The Board previously agreed, accepting that Chow taught “the exhaustion of resources upon the consumption of those resources when a cost is paid to obtain a... document.” ID, 35. But this isn’t correct.

Each independent claim recites language defining a relationship between a service resource and a network agent, namely how “the service resource is *exhausted **upon** being consumed* by the network-based agent.” EX1001, 25:65–67, 26:35–39, 27:61–63 (emphasis added). In other words, the network-based agent performs a service. To perform that service, the network-based agent consumes a service resource (i.e., a resource that enables the network-based agent to perform the service). When it is consumed, the service resource is exhausted. Regardless of any disputed claim construction, Pet., 18–20, the Petition fails to sufficiently

address this relationship. The Institution Decision essentially adopts the Petitioner's position that Chow teaches the limitation of claim 1 concerning "an amount of the service resource is exhausted upon being consumed by the network-based agent." Under this incorrect interpretation, money is a "service resource" and Chow's agent "consum[es] units" of this money when retrieving a "service." Pet., 33; This is not true. EX2016, ¶¶68–84.

Instead of pointing to any specific part of Chow as teaching "the service resource is exhausted upon being consumed," the Petition merely argues that because Chow's "Revision Manager program... would only retrieve the document [or] webpage if the monetary costs... associated with that retrieval did not exceed a 'certain acceptable cost,'" Pet., 33 (parentheticals omitted)), and because a "POSITA would have understood that money can be spent only once," *id.*, 34, then a "POSITA would have understood that Chow [also] taught" the "exhausted upon being consumed" element. *Id.*, 35.

The Petition's conclusory allegation, however, ignores a key distinction. While the term "cost" may be used to generically describe a quantitative measurement of the resource expenditure required to perform a service, there is no evidence whatsoever that takes the further step of linking "cost" in terms of a monetary expenditure with the claimed "service resource." Dr. Long's testimony itself illustrates this point as discussed above in Section III.B. Because the Petition

has not alleged that any other reference or portion of the cited references provide this essential linkage—as none exists—the underlying premise of the Petition’s argument is faulty.

As discussed above, money simply cannot be a service resource. The generic use of “cost” testified to by Dr. Long is *not* the service resource of Chow. Nor does the Petition contend White provides this limitation.

C. Grounds 1 and 2 fail because they do not properly construe the term agent

Grounds 1 and 2 fail because the claim construction of “agent” it offers is plainly wrong. *See, supra*, Section V.A. But even if the Board chooses not to construe the term agent, the “network-based agent” limitation excludes Chow from its scope.

The limitations at issue in this case repeatedly require interactions with a “network-based agent.” Chow does not meet this limitation EX2016, ¶¶179, 159–170; *see, e.g.*, Pet. 16–17 (citing EX1009, 24–26); EX2001, 2; EX3001, 1.

A POSA would not construe “network-based agent” to mean merely “a program”—recognizing it must be something more, particularly something beyond a program that can access the network. Even *Dr. Long* does not dispute this construction. EX1005, ¶50.

There is no evidence of any definition of the phrase network-based agent other than the stipulated *definition*. The prosecution history and the patent offer no

contrary definition. If the Board concludes that a network-based agent should receive its plain and ordinary meaning, it should do so with the confident conclusion—supported by unrebutted evidence—that the network-based agent is not simply a program that resides on one computer and issues requests to another.

This comports with the great weight of evidence from prior and concurrent proceedings—including Petitioner’s own agreement—showing that this is true. *E.g.*, Pet. 16–17 (citing EX1009, 24–26); EX2001, 2; EX3001, 1. No matter the construction of network-based agents, it cannot simply be a computer program.

In addition, Chow’s disclosure of the Revision Manager as an “agent” is far removed from the extensible agent claimed.

D. The combination of Bauer with the other references does not cure any of the above deficiencies

None of the combinations involving Bauer resolve the underlying deficiencies of Sections V.A through V.C, above. The Petition does not separately argue that the combination of Bauer with Chow and White provides any additional basis for invalidating the independent claims of the ’752 patent.

VI. Conclusion

The Petition acknowledges that Ground 1 and 2 fail if the Board adopts the correct (and stipulated) construction of the term “agent.” Ground 3 and 4 fail if the Board recognizes that a POSA would know that someone seeking to connect to web servers would use remote procedure calls in their own program rather than

trying to reprogram the internet to use remote programming. All of the asserted Grounds fail because of the incorrect “service resource” construction. And in all cases, claim 14 is valid because the Petition does not provide any prior art that teaches or suggests the limitations of those claims.

For at least these reasons, the Board should find the challenged claims patentable.

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S RESPONSE** specified in 37 C.F.R. § 42.24 have 6,961 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using Microsoft Word 2010.

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CERTIFICATION OF SERVICE (37 C.F.R. § 42.6(e))

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S RESPONSE PURSUANT TO 37 C.F.R. § 42.120** and **Exhibits 2015–2020** were served electronically in their entireties on November 10, 2020, upon the following parties by email:

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