

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VMware, Inc.
Petitioner,

v.

Intellectual Ventures I LLC,
Patent Owner.

Case No. IPR2020-00470
U.S. Patent No. 7,949,752

**PETITION FOR *INTER PARTES* REVIEW OF CLAIMS
1–4, 6, 9–11, 13–14, and 22–26 OF U.S. PATENT NO. 7,949,752**

TABLE OF CONTENTS

Table of Contents	ii
Petitioner’s Exhibit List	vi
I. Introduction	1
II. VMware Has Standing and the ’752 Patent is Eligible for <i>Inter Partes</i> Review.....	1
III. Background	1
IV. The ’752 Patent	2
A. Specification.....	2
B. Prosecution History.....	7
C. Effective Filing Date and Date of Invention.....	11
D. Level of Ordinary Skill in the Art.....	12
V. Claim Construction	12
A. “Means” limitations	14
B. “Service” and “Service resource”	15
C. “Agent”	16
D. “URL defining a type of event and identifying the network-based agent” ..	17
E. “Consumed”	18
F. “Exhausted”	18
G. “Event Handler”	20
H. “Service wrapper”	20
VI. Precise Relief Requested.....	21
A. Proposed Grounds and Prior Art.....	21
B. The Proposed Grounds Are Not Cumulative or Redundant.	23
VII. Detailed Explanation of Grounds for Institution.....	24
A. Ground 1: Chow Rendered Claims 1–4, 9, 13–14, 22, and 24–26 Obvious. 24	
1. Summary of Chow.....	24
2. Claim 1	28
a. Preamble.....	29
b. “Means for receiving...”	29

c. “Means for invoking...”	30
d. “Means ... for using...”	33
e. “Means for communicating...”	35
3. Claim 2	36
4. Claim 3	37
5. Claim 4	38
6. Claim 9	39
a. Preamble	40
b. “Processor”	40
c. “Memory storing instructions”	40
7. Claim 13	42
8. Claim 14	43
a. Identifying	44
b. Determining	44
9. Claim 22	45
10. Claim 24	46
a. Preamble	46
b. “Receiving...”	47
c. “Invoking...”	47
d. “Communicating...”	48
11. Claim 25	48
12. Claim 26	50
B. Ground 2: Chow and Bauer Rendered Claims 6, 10, 11, and 23 Obvious.	51
1. Summary of Chow	51
2. Summary of Bauer	51
3. A POSITA would have combined Chow and Bauer	52
4. Claim 6	53
5. Claim 10	54
6. Claim 11	55
7. Claim 23	55

C. Ground 3: Chow and White Rendered Claims 1–4, 9, 13–14, 22, and 24–26 Obvious.	56
1. Summary of Chow.....	57
2. Summary of White	57
3. A POSITA would have combined Chow and White.....	58
4. Claims 1–4, 9, 13–14, 22, and 24–26.....	59
D. Ground 4: Chow, Bauer, and White Rendered Claims 6, 10, 11, and 23 Obvious.	60
1. Summary of Chow.....	60
2. Summary of Bauer.....	60
3. Summary of White	60
4. A POSITA would have combined Chow, Bauer, and White.....	61
5. Claims 6, 10, 11, and 23	61
E. Secondary considerations.....	61
VIII. Mandatory Notices.....	62
A. Real Parties-in-Interest.....	62
B. Related Proceedings.....	62
C. Lead and backup counsel	63
D. Electronic Service	63
IX. Institution of This <i>Inter Partes</i> Review Would Be Equitable.....	63
X. Fees.....	65
XI. Conclusion.....	65

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Cuozzo Speed Techs., LLC v. Lee</i> , 136 S. Ct. 2131 (2016).....	16
<i>Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha</i> , No. IPR2016-01357, 2017 WL 3917706 (P.T.A.B. Sept. 6, 2017)	64
<i>NHK Spring Co., Ltd. v. Intri-Plex Technologies, Inc.</i> IPR2018-00752, Paper No. 8, 19–20 (P.T.A.B. Sep. 12, 2018).....	64
<i>Philips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005)	19
<i>Verizon Services Corp. v. Vonage Holdings Corp.</i> , 503 F.3d 1295 (Fed. Cir. 2007)	19
Statutes	
35 U.S.C. § 102	23
35 U.S.C. § 103	<i>passim</i>
35 U.S.C. § 112	14
Other Authorities	
83 FED. REG. 51340 (Oct. 11, 2018)	12
Rule 42.104(a).....	1

PETITIONER'S EXHIBIT LIST

Ex. No.	Brief Description
1001	U.S. Patent No. 7,949,752
1002	File History of U.S. Patent No. 7,949,752
1003	File History of U.S. Patent No. 6,839,733
1004	File History of U.S. Patent No. 6,163,794
1005	Declaration of Darrell Long
1006	<i>HCC Ins. Holdings, Inc. v. Intellectual Ventures I LLC</i> , IPR2016-01431, Paper No. 1
1007	<i>HCC Ins. Holdings, Inc. v. Intellectual Ventures I LLC</i> , IPR2016-01431, Paper No. 6
1008	<i>HCC Ins. Holdings, Inc. v. Intellectual Ventures I LLC</i> , IPR2016-01431, Paper No. 8
1009	Report and Recommendation of United States magistrate judge, <i>Intellectual Ventures I LLC v. HCC Insurance Holdings, Inc.</i> , 6:15-cv-660 (E.D.Tx. Aug. 26, 2016), ECF No. 102
1010	Plaintiff's Objections to Magistrate Mitchell's Report and Recommendation, <i>Intellectual Ventures I LLC v. HCC Insurance Holdings, Inc.</i> , 6:15-cv-660 (E.D.Tx. Sep. 9, 2016), ECF No. 110
1011	Joint Motion to Stay All Deadlines and Notice of Settlement, <i>Intellectual Ventures I LLC v. HCC Insurance Holdings, Inc.</i> , 6:15-cv-660 (E.D.Tx. Dec. 26, 2018), ECF No. 207
1012	Scheduling Order, <i>Intellectual Ventures I LLC v. VMware, Inc.</i> , 1:19-cv-01075 (W.D.Tx. Dec. 10, 2019), ECF No. 44
1013	IV's infringement contentions for '752 patent

Ex. No.	Brief Description
1014	F. Cheong, <i>Internet Agents</i> (1996)
1015	U.S. Patent No. 7,043,532
1016	U.S. Patent No. 6,247,056
1017	U.S. Patent No. 5,740,231
1018	U.S. Patent No. 6,029,175
1019	U.S. Patent No. 5,367,635
1020	U.S. Patent No. 5,603,031
1021	Complaint, <i>Intellectual Ventures I LLC v. VMware, Inc.</i> , 1:19-cv-01075 (W.D.Tx. Dec. July 31, 2019), ECF No. 1.
1022	Curriculum vitae of Darrell Long, Ph.D.
1023	Dolan, “But _I_ can’t FTP” Re: shared X systems available, comp.sources.d newsgroup post (January 13, 1991)
1024	Fielding, Relative Uniform Resource Locators, IETF RFC1808 (June 1995)
1025	Berners-Lee <i>et al.</i> , Uniform Resource Locators (URL), IETF RFC1738 (December 1994)

I. Introduction

During prosecution, the examiner located every element of the claims of U.S. Patent No. 7,949,752 (“the ’752 patent”) in the prior art, except for one minor limitation about a “uniform resource locator” (“URL”). Petitioner VMware, Inc. (“VMware”) has located a reference—unknown to the examiner—that disclosed this missing element. Because all elements of the claims have now been located in the prior art, often in a single reference, VMware requests *Inter Partes* review of claims 1–4, 6, 9–11, 13–14, and 22–26 of the ’752 patent (Ex. 1001).

II. VMware Has Standing and the ’752 Patent is Eligible for *Inter Partes* Review.

VMware may file this petition. VMware certifies under Rule 42.104(a) that the ’752 patent is available for *inter partes* review and that VMware is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the identified grounds. VMware was sued in the U.S. District Court for the Western District of Texas by the patent owner, Intellectual Ventures I LLC (“IV”), on July 31, 2019. Ex. 1021. The complaint alleges infringement of the ’752 patent. *Id.* VMware is not estopped from challenging the claims on the grounds identified in this Petition.

III. Background

The ’752 patent generally relates to software agents—“personal software assistants with authority delegated from their users,” Ex. 1014, 21. But software

agents were not new when the '752 patent was filed. Teachings of software agents go back to at least 1970. *Id.* (citing the work of “early visionaries” from 1970, 1984, and 1989). By 1996, there were many existing agent systems. *See id.*, 21–50 (describing twenty-two existing agent systems in introductory chapter). Many of these agents interacted with the Internet and the world wide web. For example, “WebWalker” was an agent that maintained links in a webpage and “WebShopper” was an agent that crawled the web for low-price audio compact discs. *Id.*, 169–197, 309–361.

Three prior art agent systems are relevant to this petition: Chow, Bauer, and White. Chow taught an agent system that monitored a webpage for any updates and provided those updates to a user. Ex. 1018, 3:60–63. Bauer taught an agent system that was user-extensible. Ex. 1019, 3:46–57. And White taught an agent system where the agent process could execute on one computer and then move to a second computer to continue its execution. Ex. 1020, 8:27–41.

IV. The '752 Patent

A. Specification

The '752 patent described a problem with services such as email, voice mail, electronic organizers, and on-line databases. Ex. 1001, 1:56–60, 2:5–6. The problem was that the software applications supporting those services were “often developed with a broad spectrum of subscribers in mind.” *Id.*, 2:6–7. This meant

the applications “address[ed] the generalized needs of many subscribers, but not the specialized needs of any one particular subscriber or group of subscribers.” *Id.*, 2:7–11. For a subscriber to obtain modified software to address the subscriber’s specialized needs, the subscriber would have to convince the service provider to bear the costs of developing, testing, and maintaining the modified software. *Id.*, 2:12–34.

The solution discussed as the “present invention” in the summary section of the ’752 patent is to make the network system “extensible (e.g. programmable) by ‘end-users.’” Ex. 1001, 2:42–44. This is accomplished by augmenting the network system with an agent system. *Id.*, 2:54–55. This augmentation was made possible by programmatically exposing capabilities of the network through services, service resources, and service wrappers, which software agents could use to modify the services. *Id.*, 2:55–59.

Reading these portions of the ’752 patent specification, one might get the impression that the applicants invented agent systems, or at the very least invented *extensible* agent systems. But as discussed in the background section, this is not the case. *See* § II *supra*. By October 1998, extensible network software agents were known in the art. *See id.* And the independent claims at issue don’t recite that idea, anyway. As discussed below, after a long prosecution, the claims only emerged from prosecution after being narrowly amended to include one specific aspect of

the disclosed embodiment: invoking a network-based agent via a URL. *See* § IV.B, *infra*.

The disclosed embodiment was implemented in the network system (2) of Figure 1 (reproduced below). Ex. 1001, 5:23–25. The network system had two main parts: “programmable functionality component” (4) and “hard-wired functionality component” (6). *Id.*, 5:55–56. The programmable functionality component comprised an agent system, including an agent server (20) and agents (22). *Id.*, 5:63–67, Figure 1. The network system also included graphical and voice user interfaces (12 and 16), through which users interacted with the network system. *Id.*, 6:5–6, 16–19, 49–52. And, finally, the network system also included one or more services (24) with associated service wrappers (26) and service resources (25). *Id.*, Figure 1.

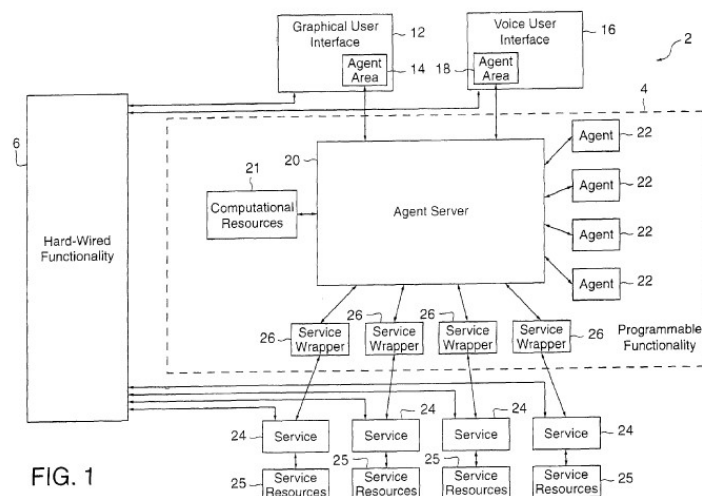


FIG. 1

The agents were “implemented as a software application, program, or process” which ran on behalf of an affiliated user or “principal.” Ex. 1001, 8:26–29, 31–34. Agents were “responsible for performing a particular task or set of tasks on behalf of the respective principal.” *Id.*, 8:56–58. Such tasks included using services (24). *Id.*, 10:19–21. Examples included an agent placing or receiving calls or voice mails with a service that supported call processing or an agent retrieving documents, such as electronic periodicals, from an on-line data retrieval service. *Id.*, 10:21–25, 41–45.

In performing tasks like these, agents consumed computational resources (21) and service resources (25). Ex. 1001, 9:31–36. Computational resources were “resources provided or supported by a computer-based system” and included “processing time, memory storage space, and the like.” *Id.*, 8:15–21. Service resources “enable[d] a service to be performed.” *Id.*, 10:61–63. For example, in an on-line data retrieval service, service resources could have “include[d] a telephony connection, a modem for on-line communication, an on-line database provider services, etc.” *Id.*, 10:66–11:2. Furthermore, some service resources might have “comprise[d] discrete units which [were] ‘consumed’ during utilization of the respective resource by an agent 22,” And which could be exhausted. *Id.*, 11:6–8, 25:31–34. For example, a service resource related to telephony services might have

comprised units of long-distance calling time that were consumed and exhausted by placing a call. *Id.*, 11:8–12.

Agents executed on the agent server, which “control[led], coordinate[d], and otherwise manage[d] the overall operation of [the] programmable functionality component.” Ex. 1001, 7:51–53. The agent server could be used to “invoke, initiate, or execute various routines, processes, objects, and the like,” including agents, and also controlled the consumption of computational resources and service resources. *Id.*, 7:53–55, 61–65. The agent server also communicated (exchanged information) with the graphical and voice user interfaces. *Id.*, 7:48–51. And, finally, the agent server also interfaced with the services through their associated service wrappers, which “mediate[d] the interaction between a service ... and the remainder of [the] programmable functionality component.” *Id.*, 11:18–24.

Service wrappers “enable[d] communication between services 24 and agent server 20” by, for example, “converting between a computer language (or instruction set) used within agent server 20 and the computer language (or instruction set) of the respective service 24.” Ex. 1001, 11:38–42. Each service wrapper was “implemented, at least in part, with an application programming interface (API),” which programmatically exposed the capabilities of a service to an agent. *Id.*, 11:42–47.

In operation, agents were executed upon the occurrence of “events.” Ex. 1001, 10:9–11, 15:23–26. Events could include “the lapse of a predetermined amount of time (e.g., 24 hours) or the occurrence of a specified time (e.g., 6:00 a.m.)” or the “delivery of an e-mail message.” *Id.*, 15:26–28, 18:27–28. An agent would learn of an event via a “uniform resource locator (URL) which expresse[d] or provide[d] an address for a web page.” *Id.*, 18:29–31. “The URL specifie[d] both the event’s type and the agent 22 which is [the] event’s intended recipient.” *Id.*, 18:31–32.

B. Prosecution History

The ’752 patent took a long and winding road to issuance, including multiple restriction, rejection, and response milestones. In each response, the applicants added aspects of the disclosed embodiment to the claims, one by one, until the examiner finally relented and allowed the claims. The final limitation that the examiner could not find in the disclosed prior art was “receiving a URL defining a type of event and identifying the network-based agent.” As discussed in § VII below, at least Chow taught this limitation, but the examiner was unaware of that reference. *See* Ex. 1001, references cited.

Prosecution began with a restriction requirement and election followed by the first substantive office action, which rejected all of the pending claims as anticipated by U.S. Patent No. 7,043,532 to Humpleman (Ex. 1015). Ex. 1002,

511–516, 518–525, 533–537. In response, the applicants amended the pending claims and added new claims 107–110. *Id.*, 567–568. The amendments added limitations that the service resources were “configured to be consumed by the agent.” *Id.*, 562, 564, 568. The applicants argued that Humpleman’s teaching of a server which included “hardware as a resource,” differed from the recited service resources that were “configured to be consumed by the agent.” *Id.*, 570.

The next office action made the rejection final. Ex. 1002, 584–590. It maintained all of the existing rejections and rejected the new claims over Humpleman too. *Id.* In response to the applicants’ arguments, the office action noted that “all resources can be considered to be ‘configured to be consumed,’” and therefore the applicants failed to distinguish the claims from Humpleman. *Id.*, 585. The applicants responded with a request for continued examination and a supplemental claim amendment that amended the prior claims and added new claims 111–119. *Id.*, 602–633. After the amendments all claims now recited that “the service resource is exhausted after it is consumed by the agent.” *Id.*, 604, 606, 609, 610. Applicants argued that Humpleman’s teaching of a server which included “hardware as a resource,” differed from the recited service resources that were “configured to be consumed by the agent ... wherein the service resource is exhausted after it is consumed by the agent.” *Id.*, 612, 630.

Continued prosecution began with another restriction requirement and election followed by the first substantive office action of continued prosecution. Ex. 1002, 641–647, 650–658. That office action rejected all the claims for lack of written description for “‘exhausting’ a resource” and also rejected all the claims as anticipated by or obvious in view of U.S. Patent No. 6,247,056 to Chou (Ex. 1016). *Id.*, 665–672. For the written description rejection, the office action pointed out that the specification described “Computational Resources” being “consumed” or “used up,” but that these were “situations where an agent may be ‘using up’ a resource, but not necessarily ‘exhausting’ it.” *Id.*, 667. The specification, therefore, did not provide written description support for “exhausting a resource.” *Id.*

The applicants responded by cancelling one claim, amending the remaining claims, and adding new dependent claims 137–140. Ex. 1002, 691–706. After amendment all claims now recited that “an amount of the service resource is exhausted after it is consumed by the agent” or “a discrete unit of the service resource is exhausted upon being consumed by the agent” to remedy the written description rejection. *Id.*, 692–694, 699–701 (emphasis in original). In response to the rejections over the Chou reference, applicants argued that Chou did not teach a service resource that was exhausted upon being consumed. *Id.*, 703. The examiner had pointed to “cartridges” (software modules) that were “reused” by the agent. *Id.*, 703; *see* Ex. 1016, 5:58–67 (Chou’s teaching of “cartridges”). The applicants

argued that a reusable service resource was “**the exact opposite**” of “[a] ... resource [that] is exhausted upon being consumed” as recited in the claims. Ex. 1002, 703 (emphasis added).

The next office action made the rejection final. Ex. 1002, 711–717. The office action found applicants’ argument about Chou “misleading” because in the applicant’s invention “resources are reused” too. *Id.*, 713. The office action points out that in the specification, “resources are defined as including processing time, memory storage space, and the like.” *Id.* “While these resources may be at full capacity at any given time, the [*sic*] can always be reused later when they are not at full capacity.” *Id.* Even so, the office action now rejected all the claims (including the new claims) as anticipated by a different reference, U.S. Patent No. 5,740,231 to Cohn (Ex. 1017). *Id.*, 713–715. But the office action notes that claim 135 would be allowable if it were rewritten in independent form. *Id.*, 715. The limitation recited in dependent claim 135 was “identifying the predetermined event by a URL, wherein the URL defines a type of the predetermined event and a recipient network based agent.” *Id.*, 697.

The applicants responded by amending all of the pending independent claims to include “invoking, in response to receiving a URL defining a type of the predetermined event and identifying the network-based agent, an execution of the network-based agent,” which was similar to the limitation in claim 135 that the

office action had found allowable. Ex. 1002, 737–739, 741 (emphasis in original). The applicants noted that the claims all now recited limitations like claim 135 and requested reconsideration of the rejections. *Id.*, 745–747. The examiner agreed, issuing a notice of allowance in response. *Id.*, 752–753.

By the end of prosecution, the claims were a far cry from the broad idea of a network system made extensible through augmentation with an agent system, which the specification’s “summary of the invention” section described as the “present invention.” Ex. 1001, 2:52–55. Instead, the issued claims recited (1) invoking an agent via a URL defining a type of event and identifying the agent and (2) using the agent so that an amount of a service resource was exhausted upon being consumed by the agent. *See, e.g.*, Ex. 1001, 25:59–67 (“means for invoking” and “means ... for using” elements of claim 1). And the only limitation the examiner ever found not present in the prior art was invoking an agent via a URL defining a type of event and identifying the agent. As discussed in § VII below, this limitation was taught in Chow, but the examiner was unaware of that reference. *See* Ex. 1001, references cited.

C. Effective Filing Date and Date of Invention

October 23, 1998, is the effective filing date of the ’752 patent. The application for the ’752 patent was filed on November 24, 2004, as a continuation

of application no. 09/712,712, which was itself a continuation of application no. 09/178,366, which was filed on October 23, 1998.

Likewise, October 23, 1998, is the date of invention of the '752 patent used in this petition. Petitioner is unaware of any attempt by IV or its predecessors-in-interest of asserting that the '752 patent is entitled to an earlier invention date. Petitioner is likewise unaware of any evidence that the '752 patent is entitled to an earlier invention date.

D. Level of Ordinary Skill in the Art

As of October 1998, a person of ordinary skill in the art (“POSITA”) at the time of the '752 patent’s effective filing date would typically be a person with a bachelor’s degree in computer science or electrical engineering and at least two years of experience in computer software systems. Ex. 1005, ¶ 21. This level of skill in the art is reflected by the references cited in this Petition, the state of the art, and the experience of Professor Darrell Long as described in his declaration. In this Petition, reference to a POSITA refers to a person with these or similar qualifications.

V. Claim Construction

The claims are to be construed under the same claim construction standard as civil actions in federal district court. *See Changes to Claim Construction Standard*, 83 FED. REG. 51340 (Oct. 11, 2018).

In prior district court and PTAB proceedings, IV agreed to certain constructions and argued for constructions of certain disputed terms. VMware will address all terms that have been subject to a prior construction dispute. But VMware does not believe that the Board will need to reach a construction for all previously disputed terms to resolve the issues in this petition. VMware will also address terms that are expected to have disputed constructions in the currently pending district court litigation between VMware and IV, but only where those disputes might be relevant to the obviousness issues presented in this petition.

In the prior IPR proceeding, under the “broadest reasonable interpretation” standard, petitioner HCC suggested constructions for various “means” limitations and for “event handler.” Ex. 1006, 16–20. IV’s preliminary response did not dispute any of HCC’s “means” constructions. Instead, it argued that “exhausted” should be construed and disputed HCC’s “event handler” construction. Ex. 1007, 14–17. HCC and IV settled before the Board reached an institution decision on HCC’s petition. Ex. 1008

More terms were at issue in the district court litigation between HCC and IV. Before the District Court, both sides again agreed on the construction of the “means” limitations, but disputed the constructions of “agent,” “service resource,” two “URL” limitations, “consumed,” and “exhausted.” Ex. 1009, 6, 24–34. “Event handler” was neither an agreed nor a disputed term at the District Court. *Id.* A

magistrate judge recommended constructions for all of the disputed terms. *Id.*

HCC and IV settled before the District Court ruled on the objections to the magistrate’s recommended constructions. Ex. 1011.

A. “Means” limitations

VMware proposes that all of the “means” limitations in claims 1, 3, 4, and 6, are means-plus-function elements under 35 U.S.C. §112(f). In prior proceedings, IV has agreed that these terms in claims 1 and 6 were means-plus-function limitations and that they should be construed with the functions and corresponding structure in the table below. Ex. 1009, 6. Although claims 3 and 4 were not at issue in prior litigation, VMware expects that IV will agree that the means limitations in those claims are also means-plus-function and will propose the functions and corresponding structures for those claims shown in the table below. Without prejudice to its right to argue that these terms are indefinite before the district court for not disclosing sufficient corresponding structure, VMware will apply the functions and corresponding structures from the table in the obviousness analysis of claims 1, 3, 4, and 6.

Limitation	Function	Corresponding structure
means for receiving data for creating a network-based agent (claim 1)	receiving data for creating a network-based agent	communication line (68). <i>See</i> Ex. 1001, 6:16–27, 14:48–57.

Limitation	Function	Corresponding structure
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 (claim 1)	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	agent server (20). <i>See</i> Ex. 1001, 7:47–65, 8:7–13, 18:34–38.
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 (claim 1)	using a service and a service resource configured to be consumed by the network-based agent for performing the operation	agent (22). <i>See</i> Ex. 1001, 8:31–34, 9:31–39.
means for communicating a result of the operation over a network communications link (claim 1)	communicating a result of the operation over a network communications link	communication line (68). <i>See</i> Ex. 1001, 6:16–27, 14:48–57.
means for mediating an interaction between the means for using the service and the service (claim 3)	mediating an interaction between the means for using the service and the service	service wrapper (26). <i>See</i> Ex. 1001, 16:22–38.
means for monitoring an amount of the service resource used by the network-based agent (claim 4)	monitoring an amount of the service resource used by the network-based agent	monitor (50). <i>See</i> Ex. 1001, 16:50–61.
means for allowing a user to modify the network-based agent (claim 6)	allowing a user to modify the network-based agent	network system (2). <i>See</i> Ex. 1001, 9:26–30, 10:12–15.

B. “Service” and “Service resource”

VMware proposes that the Board not construe “service” or “service resource.” That said, VMware expects the parties will litigate the construction of “service” and “service resource” before the District Court because they will be

relevant to issues of indefiniteness and non-infringement. Yet VMware believes the Board need not construe “service” or “service resource” to resolve the invalidity issues in this petition for two reasons. First, the indefiniteness issue is statutorily off limits for VMware in an IPR petition. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2141–42 (2016) (“canceling a patent claim for ‘indefiniteness under §112’ in inter partes review” would be “outside [the PTAB’s] statutory limits”). Second, for the invalidity issues that VMware raises in this petition, the construction of “service” and “service resource” will not affect the outcome. This is because, as discussed below, the prior art taught “services” and “service resources” analogous to the specific examples of “services” and “service resources” discussed in the specification. Thus, whatever the full scope of the claimed “service” and “service resources” might be, that scope must include the exemplary “services” and “service resources” of the ’752 patent that were also taught by the prior art in this petition.

C. “Agent”

In a prior district court proceeding, a magistrate judge recommended a construction of “agent” based on a lexicography theory. *See* Ex. 1009, 24–26. The definition comes from White (discussed above in the background section), which the ’752 patent incorporated by reference for its “exemplary construction for an agent system.” Ex. 1001, 5:27–31. White included a “GLOSSARY OF TERMS,”

which defined “agent” as “a process which occupies a place and which is mobile, i.e., can move from a first place to a second place” Ex. 1020, 16:59–67. Given this express definition and incorporation, the magistrate judge recommended that “agent” be construed consistent with the definition from White. Ex. 1009, 24–26. IV objected to this recommendation. Ex. 1010, 5–6. But the parties settled before the District Court Judge could decide the issue. Ex. 1011.

Without taking a position on the merits of the prior construction, and without waiving its right to seek that construction in its own corresponding district court litigation, VMware presents alternate grounds that account for both possible constructions of “agent,” in this petition. Grounds 1 and 2 analyze the claims under IV’s prior position that “agent” should not be construed. Alternate grounds 3 and 4 analyze the claims with the prior district court construction of agent.

D. “URL defining a type of event and identifying the network-based agent”

The Board need not construe the “URL defining a type of event and identifying the network-based agent” limitation of claims 1, 9, and 24, which was disputed in prior district court litigation. *See* Ex. 1009, 28–29. It is unclear whether the parties agree on the plain and ordinary meaning of this limitation. Despite that, as with “service” and “service resources,” the Board need not construe this limitation because it is not relevant to the invalidity issues raised in this petition.

E. “Consumed”

The Board need not construe “consumed,” in claims 1, 9, and 24, which was disputed in prior district court litigation. *See* 1009, 29–31. VMware does *not* expect that the parties will litigate the construction of this term in the corresponding district court litigation because IV previously argued that no construction was necessary and that is acceptable to VMware.

F. “Exhausted”

The board should construe “exhausted” in claims 1, 9, and 24 as “unavailable for reuse.” This construction is compelled by the applicants’ prosecution history disclaimer. During prosecution, the applicants argued that Chou, which taught a service that used reusable “cartridges,” was “the *exact opposite*” of “[a] ... resource [that] is exhausted upon being consumed” as recited in the claims. Ex. 1002, 703 (emphasis added). The examiner believed that “the applicant’s argument ... [was] misleading [because] [i]n the applicant’s invention, resources are reused.” *Id.*, 713. All the same, the examiner dutifully complied with the applicant’s disavowal by replacing the rejection over Chou with a rejection over Cohn. *Id.*, 713–715. The particular teachings of Cohn relied on by the examiner for the “exhausted” limitation taught consumption of services with associated monetary costs. *Id.* (citing Ex. 1017 (Cohn) at 34:6–57). This responded to the applicant’s disavowal because money cannot be reused once it is spent.

Thus, the prosecution history as a whole shows a clear and unambiguous statement constituting a clear disavowal of claim scope for any resource capable of reuse.

This requires a limiting construction. *Verizon Services Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1306 (Fed. Cir. 2007).

Even if the Board does not adopt VMware’s construction, IV’s previously proposed constructions (“reaching an allocated amount” or “used up to the allotted or predetermined amount,” Ex. 1009, 31–34; 1007, 16–17) were still improper and should not be adopted. I. IV’s previous construction committed one of the “cardinal sins of patent law—reading a limitation from the written description into the claims.” *Philips v. AWH Corp.*, 415 F.3d 1303, 1319–20 (Fed. Cir. 2005).

While the specification described using “predetermined,” “allotted,” or “allocated” amounts of service resources, there was no indication that the invention should be limited to those embodiments. *See* Ex. 1001, 11:56–66, 22:34–37, 22:47–50, 24:63–67, 25:1–6.

Nor is IV’s construction required from the meaning of “exhausted” itself because it is possible to “exhaust” a resource where the amount of the resource is not predetermined. For example, money, like available units of data-access time or long distance calling time, cannot be reused after being spent. So, for instance, the money in a variable-rate interest-bearing savings account is exhausted once all of it is withdrawn, but the amount that is withdrawn depends on when it was

withdrawn. The later it was withdrawn, the larger the amount will be because of the accumulated interest. The money will be exhausted all the same, but the amount of money was not “predetermined,” “allotted,” or “allocated.”

As a result, to the extent that VMware’s proposed construction is not adopted, there should be no construction of this term. In any event, as discussed below, the prior art taught service resources that could be “exhausted,” under the proper construction, IV’s improper construction, or no construction at all.

G. “Event Handler”

“Event Handler,” in claim 25, was a term in dispute in the prior petition brought by HCC. 1006, 17–18; 1007, 14–15. Despite this dispute, it does not appear that the constructions proposed by HCC and IV materially differed from each other; nor did the construction appear relevant to any dispute. In fact, neither HCC nor IV sought a construction of “event handler” in their corresponding district court litigation. Ex. 1009, 24–34. For these reasons, VMware proposes that the Board not construe “event handler.”

H. “Service wrapper”

VMware does not believe that a construction of “service wrapper” in claims 13 and 14 is needed to resolve any issue in this petition. That said, if the Board determines a construction is necessary, “service wrapper” should be construed as “component that mediates interaction between the service and the network-based

agent.” This construction would follow the general description of a service wrapper disclosed in the specification. *See* Ex. 1001, 3:23–26 (“A service wrapper, associated with the service, cooperates with the agent server to mediate interaction between the service and the agent.”); *see also* 11:21–24 and 16:23–26 (providing similar disclosures).

VI. Precise Relief Requested

A. Proposed Grounds and Prior Art

Four grounds are presented for trial; two grounds for each possible construction of “agent.” To the extent “agent” is not construed (i.e. not limited to a mobile agent), as IV has proposed, the claims are invalid under grounds 1 and 2. But to the extent “agent” is construed to be limited to a mobile agent, the claims are invalid under only grounds 3 and 4.

Ground 1: If the Board does not construe “agent,” claims 1–4, 9, 13–14, 22, and 24–26 would have been obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 6,029,175 to Chow *et al.* (“Chow”) (Ex. 1018).

Ground 2: If the Board does not construe “agent,” claims 6, 10, 11, and 23 would have been obvious under 35 U.S.C. § 103(a) over Chow in view of U.S. Patent No. 5,367,635 to Bauer *et al.* (“Bauer”) (Ex. 1019).

Ground 3: If the Board construes “agent” to be limited to a mobile agent, claims 1–4, 9, 13–14, 22, and 24–26 would not have been obvious to a POSITA in

view of Chow alone because Chow did not teach a mobile agent. But, in view of U.S. Patent 5,603,031 to White *et al.* (“White”) (Ex. 1020), it would have been obvious to modify Chow to make Chow’s agent a mobile agent. So under the narrow construction of agent, claims 1–4, 9, 13–14, 22, and 24–26 would have been obvious under 35 U.S.C. § 103(a) over Chow in view of White

Ground 4: Like ground 3, if the Board construes “agent” to be limited to a mobile agent, claims 6, 10, 11, and 23 would not have been obvious to a POSITA in view of Chow and Bauer because neither Chow nor Bauer taught a mobile agent. But, in view of White, it would have been an obvious modification of the combined Chow and Bauer to make the agent a mobile agent. So under the narrow construction of agent, claims 6, 10, 11, and 23 would have been obvious under 35 U.S.C. § 103(a) over Chow in view of Bauer and further in view of White.

The references relied on in these grounds are prior art:

- Chow is prior art under pre-AIA 35 U.S.C. § 102(e) because it was filed (on June 7, 1996) before the ’752 patent’s invention date (October 23, 1998). Ex. 1018, cover.
- Bauer is prior art under pre-AIA 35 U.S.C. § 102(b) because it was patented (on November 22, 1994) more than one year before the ’752 patent’s effective filing date (October 23, 1998). Ex. 1019, cover.

- White is prior art under pre-AIA 35 U.S.C. § 102(b) because it was patented (on February 11, 1997) more than one year before the '752 patent's effective filing date (October 23, 1998). Ex. 1020, cover.

35 U.S.C. § 102(b) prior art references, like White, are not subject to the restrictions of pre-AIA 35 U.S.C. § 103(c) even though White may have been co-owned by the same entity as the '752 patent.

B. The Proposed Grounds Are Not Cumulative or Redundant.

The grounds for trial presented in this petition are not redundant to issues already examined during prosecution of the '752 patent. The references raised in this proceeding were not part of any of the rejections during prosecution. Ex. 1002, 533–537 (applying Humpleman), 583–590 (same), 667–671 (applying Chou), 711–717 (applying Cohn). Nor were the references raised in this proceeding part of any rejection in the prosecution of the two parent patents. *See* Ex. 1003 (only office action before notice of allowance applied Dilip, U.S. Patent No. 6,163,794, to claims) and Ex. 1004 (no office action before notice of allowance). The references relied on by the examiner during the '752 patent's prosecution did not disclose “receiving a URL defining a type of event and identifying the network-based agent.” *See* Ex. 1002, 736–747 (amending claims to add URL limitation in view of examiner's indication that dependent claim with the URL limitation contained allowable subject matter). Chow does.

VII. Detailed Explanation of Grounds for Institution

As proven below, claims 1–4, 6, 9–11, 13–14, and 22–26 are unpatentable under 35 U.S.C. § 103. The claims, as a whole, would have been obvious to a POSITA under § 103 because, as shown below, every element of the claims was taught by the prior art. There is also nothing about any of the claims as whole that would have made them non-obvious even though every element was taught in the prior art. Ex. 1005, ¶ 91.

A. Ground 1: Chow Rendered Claims 1–4, 9, 13–14, 22, and 24–26 Obvious.

Claims 1–4, 9, 13–14, 22, and 24–26 are invalid under 35 U.S.C. § 103 over Chow. Chow disclosed a software agent for providing updated copies of documents, like webpages, where the agent was invoked by receiving a URL and where obtaining updated copies of documents consumed monetary resources. Ex. 1018, 4:64–5:1, 5:5–14, 9:59–10:30, 16:17–26, 16:48–51, 25:65–26:5. For the reasons below, A POSITA considering the teachings of Chow would have found the claimed subject matter obvious.

1. Summary of Chow

Chow recognized a problem with the display of webpages. The problem was that after a client browser downloaded a webpage there was no way for a web server to inform the client browser when there was an updated version of the webpage available for download. Ex. 1018, 3:48–53. This was because web servers

were “stateless and connectionless, so it [was] impossible for servers to maintain clients’ states.” *Id.*

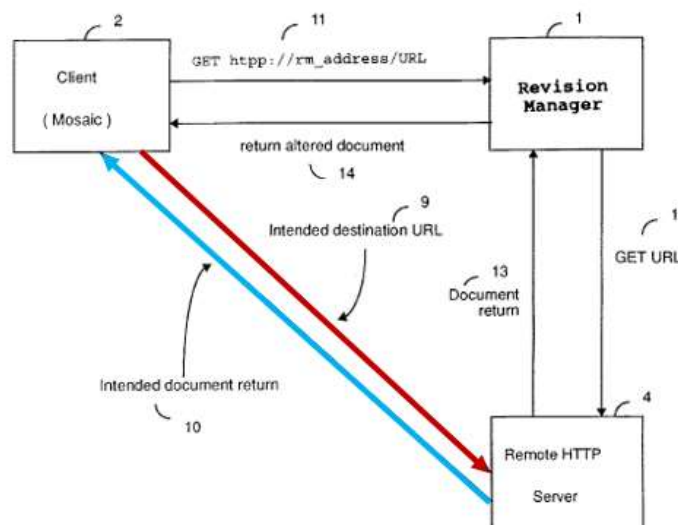
Chow’s solution to this problem was “to provide a software agent for automatically retrieving changed documents previously accessed from network and internetwork servers.” *Id.*, 3:60–63. Chow christened this intelligent network agent as the “Revision Manager.” *Id.*, 3:63–64.

The Revision Manager had two phases of operation: “start-up” and “continuing use.” *Id.*, 4:54–57. In the start-up phase, the user accessed the Revision Manager to complete a form that identified a resource object the Revision Manager should retrieve. *Id.*, 4:57–64. In the continuing use phase, the Revision Manager altered the URLs of the retrieved object and provided the altered object to the user. *Id.*, 4:64–5:1, 5:13–14. The URLs were altered so that they pointed to the Resource Manager instead of the original resource. *Id.*, 5:5–8, 10:9–22, 16:48–51. In this mode, if the user activated one of the altered URL hyperlinks, the Revision Manager (and not the original resource) would now receive the request and decide whether to provide the requested object from the Revision Manager’s cache or to direct the request to another server. *Id.*, 5:8–12, 16:17–26.

One example URL translation described in Chow changed the URL “<http://www.teknowledge.com/company/Patent.html>” to the URL “<http://SomeRevisionManager.CompanyName.com:8042/http://www.teknowledge.com/company/>

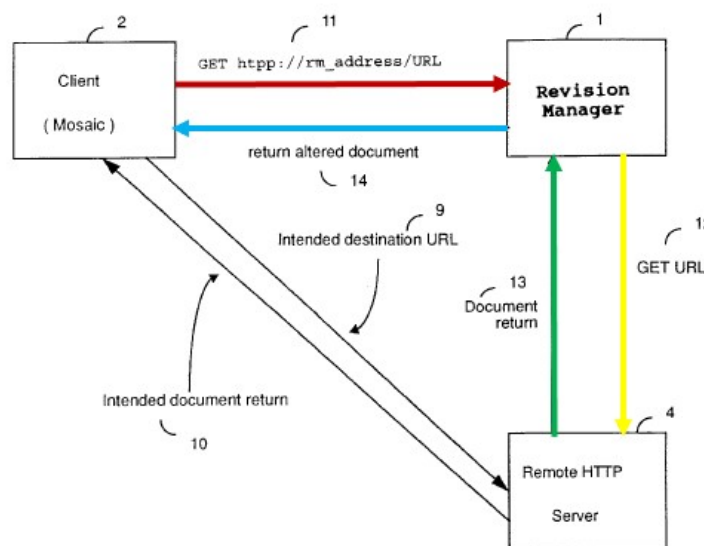
Patent.html.” *Id.*, 10:13–22. Where “SomeRevisionManager.CompanyName.com” identified a computer on which a Revision Manager agent was running, and “8042” was the port number used by the Revision Manager. *Id.*

Figure 3 demonstrated how to obtain a webpage both with and without Chow’s Revision Manager. Without the Revision Manager, it was a two-step process. Step one (9): A client sends a request to an HTTP server for a document identified by a URL. Step two (10): The HTTP server responds by sending the document. *Id.*, 9:52–58. In the annotated version of Figure 3 below, step one is shown in red and step two is shown in blue.



Id., Fig. 3. But, *with* the Revision Manager, it was a four-step process. Step one (11): The client sends the request to the Revision Manager. Step two (12): The Revision Manager forwards the request to the HTTP server. Step three (13): The HTTP server provides the requested webpage to the Revision Manager. Step four

(14): The Revision Manager returns an altered version of the requested webpage to the client. *Id.*, 9:59–10:30. In the annotated version of Figure 3 below, step one is shown in red, step two is shown in yellow, step three is shown in green and step four is shown in blue.



Id., Fig. 3.

Upon returning the altered webpage, the Revision Manager would activate a “polling daemon” process which checked whether the target webpage was updated and whether the client was due for an update. *See* Ex. 1018, 17:44–20:64; Figs. 18–22. If there was an update and the client was due for an update, the Revision Manager would send a command to the client (“CCI ‘GET’ command”), which told the client to get the updated document from the Revision Manager. *Id.*, 20:17–25. That CCI command included a URL, and after the client received that CCI command, the client would send a HTTP GET command to the Revision Manager

identified in the URL in order to get the updated webpage from the Revision Manager. *Id.*, 20:19–47. The URL pointed to a CGI script running on the Revision Manager and included two parameters to be passed to the CGI script: the “client’s port number” and an “update” flag. *Id.*, 20:34–40. A specific example is the URL: “http://SomeRevisionManager.CompanyName.com:8042/cgi-bin/RM_cacheParse.pl?port_number8080+update/http://www.teknowledge.com/,” where “SomeRevisionManager.CompanyName.com” identified the Revision Manager, “RM_cacheParse.pl” identified the CGI script of that Revision Manager, and the parameter “port_number8080” identified the client’s port 8080, and the parameter “update” was the update flag. *Id.*

Another feature of Chow’s Revision Manager was that it considered whether there were enough resources to access the requested webpage. For example, the Revision Manager could consider the monetary cost of retrieving the document “(such as communication charges, server charges, and copyright holder charges)” and only obtain the document “[i]f the cost would not exceed an acceptable level.” *Id.*, 25:65–26:5.

2. Claim 1

Claim 1, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow.

a. Preamble

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

If the preamble is a claim limitation, a POSITA would have understood that Chow taught it. In particular, Chow taught a software agent that obtained updated copies of an internet webpage specified by a user. Ex. 1018, 3:60–64. A POSITA would have understood that obtaining an internet webpage was a network-based operation and that obtaining a webpage as specified by a user was a user customized network-based operation. Ex. 1005, ¶ 93. For these reasons, a POSITA would have understood that Chow taught “a system for performing user customized network-based operations” as recited in the preamble of claim 1, *Id.*

b. “Means for receiving...”

means for receiving data for creating a network-based agent

A POSITA would have understood that Chow taught the function and structure of the “means for receiving...” element. Chow taught the Revision Manager program (the network-based agent) was initiated by reading command line arguments and a server configuration file to reflect the configuration of the host system. Ex. 1018, 11:35–40. Chow also taught that the Revision Manager was “a programmed digital computer linked by standard internet connections ... to other nodes in the data network.” *Id.*, 9:26–29; *see also* 25:15–19 (Revision Manager 301 includes a network interface); Figure 34 (same). From these

teachings, a POSITA would have understood that Chow taught that the Revision Manager received data, such as the command line arguments, for creating a network-based agent and that this data could be received via a communication line connected to the network interface of the Revision Manager. Ex. 1005, ¶¶ 95–96. For these reasons, a POSITA would have understood that Chow taught the construed function (receiving data for creating a network-based agent) and structure (communication line) of the means plus function limitation of this element of claim 1, *Id.*, ¶ 97.

c. “Means for invoking...”

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

A POSITA would have understood that Chow taught the function and structure of the “means for invoking...” element. Chow taught that one way for a client browser to invoke the Revision Manager program (the network-based agent) was by receiving a URL and sending a HTTP GET command to the Revision Manager identified in that URL. *Id.*, 20:17–47. Chow also taught that the Revision Manager was software that executed on “a programmed digital computer linked by standard internet connections ... to other nodes in the data network.” *Id.*, 9:26–29, 37–44; *see also* 25:15–32 (Revision Manager 301 includes a processor, random access memory, disk storage, and a network interface); Figure 34 (same). Chow

also described the Revision Manager as a “server.” *Id.*, 4:57–59. From these teachings, a POSITA would have understood that Chow taught invoking execution of a network-based agent (Revision Manager program) in response to receiving a URL on a server (programmed digital computer processing the Revision Manager program). Ex. 1005, ¶ 99. Activating a URL is precisely the same activity that IV alleges infringes this element. *See* Ex. 1013, 10–12. And it was also precisely how the ’752 patent described passing the event to the agent: “A standard web browser can send an event to an agent 22 by fetching the web page identified by the URL for the event.” Ex. 1001, 18:38–40.

In addition, as shown below, the URL in the HTTP GET command identified the network-based agent (green) and defined a type of event (yellow):

```
http://SomeRevisionManager.CompanyName.com:8042/  
cgi-bin/RM_cacheParse.pl?port_number8080+update/  
http://www.teknowledge.com/
```

Ex. 1005, ¶¶ 100–101. “SomeRevisionManager.CompanyName.com” identified computer on which the Revision Manager is running and “update” defined that this was an “updating request” type of event. Ex. 1018, 20:17–47. This URL, therefore, “identif[ied] the revision manager” (“SomeRevisionManager.CompanyName.com”) and “defin[ed] the type of event” (“update”) as recited in the claim. Ex. 1005, ¶¶ 100–101.

The “update” URL taught in Chow meets all prior constructions of the URL limitation. It meets IV’s proposal of no construction because it is a URL that identifies an agent and a type of event. It also meets the magistrate judge’s construction, which was essentially IV’s proposal except that it made clear that the URL need not identify a webpage. And it even meets HCC’s construction “address of a webpage that includes a type of event and the network based agent that is the event’s intended recipient” because it is the address of a webpage (it’s a web URL) and it includes a type of event (“update”) and the network based agent (“SomeRevisionManager.Company.com”) that is the event’s intended recipient.

IV’s previous critiques of the applicability of Chow to this element are inapt. IV has argued that Chow did not teach the URL limitation because the URL that a user entered in a form was not a URL that identified the network-based agent. Ex. 1007, 28–32. Whatever the merits of IV’s prior position, it is irrelevant to this petition because prior petitioner pointed to a different teaching of Chow than that pointed to in the present petition. The prior petition identified the teaching of Chow where a user first identified the webpage to be monitored by inputting the URL of the target URL into a form. Ex. 1006, 37–39. The present petition, by contrast, points to a different teaching of Chow where the client browser received a URL (as part of a CCI GET command) that pointed directly to the Revision

Manager and then invoked the Revision Manager identified in that URL to get the updated webpage. *See* Ex. 1018, 20:17–47.

For these reasons, a POSITA would have understood that Chow taught the construed function (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) and structure (agent server) of the means plus function limitation of this element of claim 1, Ex. 1005, ¶¶ 104–105.

d. “Means ... for using...”

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

A POSITA would have understood that Chow taught the function and structure of the “means for using...” element. Chow taught that the Revision Manager program (the network-based agent) retrieved documents / webpages from a source (used a service) and would only retrieve the document / webpage if the monetary costs (consumed units of a service resource) associated with that retrieval did not exceed a “certain acceptable cost.” Ex. 1018, 25:65–26:5, 29:60–30:6. In the ’752 patent, exemplary services include “on-line databases” and exemplary service resources include “long-distance time” and “on-line data access time.” *See*,

e.g., Ex. 1001, 1:56–60, 18:13–19. A POSITA would have recognized that, at least in 1998, long-distance time and on-line data access time were obtainable in return for money and are thus essentially the same thing as money. Ex. 1005, ¶ 111. Chow, thus, taught consuming an amount of service resources under any previous construction of “consumed” and even if “service” and “service resources” were limited to the specific examples of “services” and “service resources” in the ’752 patent and their equivalents. *Id.*, ¶ 112. Chow also taught that the Revision Manager program was a computer program or process, just like the agent in the ’752 patent. Ex. 1018, 9:37–44; Ex. 1005, ¶ 113. For these reasons, a POSITA would have understood that Chow taught the construed function (using a service and a service resource configured to be consumed by the network-based agent for performing the operation) and structure (agent) of the means plus function limitation of this element of claim 1, Ex. 1005, ¶ 114.

In addition, Chow also taught the “wherein an amount of the service resource is exhausted upon being consumed by the network-based agent” limitation of this element. A POSITA would have understood that money can be spent only once and therefore spending this money would have exhausted a service resource under all possible constructions of “exhausted.” Ex. 1005, ¶ 115. Under VMware’s construction, consumed monetary resources were “exhausted” because they were “unavailable for reuse.” *Id.* Under HCC’s prior construction, consumed

monetary resources were “exhausted” because they were “used up completely such that the resource is no longer available for reuse.” *Id.* Under IV’s construction, consumed monetary resources were “exhausted” because the money spent on retrieval fees had “reach[ed] an allotted amount.” *Id.* And under the magistrate judge’s construction, consumed monetary resources were “exhausted” because they were “used up to the allotted or pre-determined amount.” *Id.* A POSITA would have thus understood that Chow also taught the “wherein an amount of the service resource is exhausted upon being consumed by the network-based agent” limitation of this element. *Id.*

e. “Means for communicating...”

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

A POSITA would have understood that Chow taught the function and structure of the “means for communicating...” element. Chow taught that the Revision Manager program (the network-based agent) provided updated copies of webpages to clients who had requested updates. Ex. 1018, 9:59–10:30, 20:17–47; Figure 3 (step 14). Chow also taught that the Revision Manager was “a programmed digital computer linked by standard internet connections ... to other nodes in the data network.” *Id.*, 9:26–29; *see also* 25:15–19 (Revision Manager 301 includes a network interface); Figure 34 (same). A POSITA would have

understood that Chow taught that the Revision Manager communicated data, such as updated copies of webpages, and that this data could be communicated via a communication line connected to the network interface of the Revision Manager. Ex. 1005, ¶ 118. For these reasons, a POSITA would have understood that Chow taught the construed function (communicating a result of the operation over a network communications link) and structure (communication line) of the means plus function limitation of this element of claim 1, *Id.*, ¶ 119.

Because every element of claim 1 was taught by Chow, claim 1 would have been obvious to a POSITA over Chow. *Id.*, ¶ 120.

3. Claim 2

2. The system of claim 1, wherein the network communications link is a communications link in a public-switched communications network

Claim 2, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 1 would have been obvious over Chow. *See* § VII.A.2. The additional element recited in claim 2 would have likewise been obvious over Chow.

The communications link taught in Chow is a “standard internet connection.” Ex. 1018, 3:25–27. A POSITA would have understood that this disclosed a “public-switched communications network” as recited in this claim.

Ex. 1005, ¶ 123. Claim 2, therefore, would have been obvious to a POSITA over Chow. *Id.*, ¶ 125.

Consistent with this analysis, IV's infringement contentions contend there is a "communications link in a public-switched communications network" based on nothing more than the presence of internet URLs. *See* Ex. 1013, 18.

4. Claim 3

3. The system of claim 1, further comprising: means for mediating an interaction between the means for using the service and the service

Claim 3, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 1 would have been obvious over Chow. *See* § VII.A.2. The additional element recited in claim 3 would have likewise been obvious over Chow.

A POSITA would have understood that Chow taught the function and structure of the "means for mediating..." limitation of this claim. Chow taught the Revision Manager used the Hypertext Transfer Protocol ("HTTP") to communicate with a server containing the webpage that the Revision Manager would retrieve and monitor for updates. Ex. 1018, 10:3–9. As of 1998 HTTP was a protocol used on the world wide web that allowed browsers provided by many different software companies on many different operating systems to communicate with UNIX-based server programs distributed by two companies Ex. 1018, 1:51–2:6, 40:35–45,

41:30–50; Ex. 1014, 81–86 (describing web clients, servers, URLs, and HTTP). A POSITA would have thus recognized that the HTTP protocol mediated the interaction between the Revision Manager (means for using the service) and the server containing the webpage (the service). Ex. 1005, ¶ 128. A POSITA would have thus understood that the software using such a protocol was a “service wrapper.” Ex. 1005, ¶ 129 (citing Ex. 1001, 11:38–47, 52–55, 16:30–49). For these reasons, a POSITA would have understood that Chow taught the construed function (mediating an interaction between the means for using the service and the service) and structure (service wrapper) of this means plus function limitation of this claim, *Id.*, ¶ 130. Claim 3, therefore, would have been obvious to a POSITA over Chow. *Id.*, ¶ 132.

Consistent with this analysis, IV’s infringement contentions contend that this claim is infringed through a web browser. *See* Ex. 1013, 19. Web browsers use the HTTP protocol. Ex. 1018, 1:51–2:6.

5. Claim 4

4. The system of claim 3, wherein the means for mediating comprises:

means for monitoring an amount of the service resource used by the network-based agent

Claim 4, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 3 would have been obvious over Chow.

See § VII.A.4. The additional element recited in claim 4 would have likewise been obvious over Chow.

A POSITA would have understood that Chow taught the function and structure of the “means for monitoring...” element. Chow taught that the Revision Manager would monitor the costs of retrieving a document and only retrieve a document from a source if the monetary costs associated with that document retrieval did not exceed a “certain acceptable cost.” Ex. 1018, 25:65–26:5, 29:60–30:6, 35:22–25, 35:35–36. As described above, a POSITA would have recognized these costs as service resources. *See* § VII.A.2.d *supra*. Chow also taught that the Revision Manager program was a component of a computer system, just like the monitor in the ’752 patent. Ex. 1018, 9:37–44. For these reasons, a POSITA would have understood that Chow taught the construed function (monitoring an amount of the service resource used by the network-based agent) and structure (monitor) of the means plus function limitation of this element of this claim. Ex. 1005, ¶ 137. Claim 4, therefore, would have been obvious to a POSITA over Chow. *Id.*, ¶ 138.

6. Claim 9

Claim 9, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow.

a. Preamble

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

If the preamble is a limitation, this preamble is substantively indistinguishable from claim 1 and would have been obvious to a POSITA for the same reasons. *See* § VII.A.2.a above.

b. “Processor”

a processor

Chow taught that the Revision Manager was a software agent that executed on a computer comprising a processor. Ex. 1018, 3:60–64, 25:15–19; Figure 34.

c. “Memory storing instructions”

a memory storing instructions, execution of which by the processor causes the system to perform operations comprising

Chow taught that the Revision Manager was a software agent that executed on a computer comprising a memory. Ex. 1018, 3:60–64, 25:15–19; Figure 34. A POSITA would have understood that the Revision Manager software agent would comprise instructions stored in the memory of the computer on which the Revision Manager software agent executed. Ex. 1005, ¶ 142.

i. “Receiving...”

receiving data for creating a network-based agent

This element was substantively indistinguishable from the function of the “means for receiving...” element of claim 1 and would have been obvious to a POSITA for the same reasons. *See* § VII.A.2.b above.

ii. “Invoking...”

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

This element was substantively indistinguishable from the functions of the “means for invoking...” and “means for using...” elements of claim 1 and the “wherein” limitation of the “means for using...” element of claim 1 and would have been obvious to a POSITA for the same reasons. *See* §§ VII.A.2.c and VII.A.2.d above.

iii. “Communicating...”

communicating a result of the operation over a network communications link

This element was substantively indistinguishable from the function of the “means for communicating...” element of claim 1 and would have been obvious to a POSITA for the same reasons. *See* § VII.A.2.e above.

Because every element of claim 9 was taught by Chow, claim 9 would have been obvious to a POSITA over Chow. Ex. 1005, ¶ 146.

7. Claim 13

The system of claim 9 wherein the operations further comprise invoking execution of the network-based agent using a service wrapper

Claim 13, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 9 would have been obvious over Chow. *See* § VII.A.6. The additional element recited in claim 13 would have likewise been obvious over Chow.

Chow taught the Revision Manager used HTTP to communicate with a server containing the webpage that the Revision Manager would retrieve and monitor for updates. Ex. 1018, 10:3–9. As discussed for claim 3, as of 1998, HTTP was a protocol used on the world wide web that allowed browsers provided by many different software companies on many different operating systems to communicate with UNIX-based server programs distributed by two companies. Ex.

1018, 1:51–2:6, 40:35–45, 41:30–50; Ex. 1014, 65–70 (describing web clients, servers, URLs, and HTTP). A POSITA would have thus recognized that the software using the HTTP protocol mediated the interaction between the Revision Manager (instructions for invoking the service) and the server containing the webpage (the service). Ex. 1005, ¶ 148. A POSITA would have thus understood that such a protocol is a “service wrapper.” Ex. 1005, ¶¶ 148–149, 129 (citing Ex. 1001, 11:38–47, 52–55, 16:30–49). For these reasons, a POSITA would have understood that Chow taught invoking execution of the network-based agent using a service wrapper. *Id.*, ¶¶ 148–149. Claim 13, therefore, would have been obvious to a POSITA over Chow. *Id.*, ¶ 150.

8. Claim 14

The system of claim 13, wherein the operations further comprise:

Claim 14, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 13 would have been obvious over Chow. *See* § VII.A.7. The additional elements recited in claim 14 would have likewise been obvious over Chow.

a. Identifying

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

Chow taught that the Revision Manger checked security classification levels of the source and the client to ensure that the client had the necessary permission to access a document, like a webpage, before the Revision Manager obtained an updated copy of the document. Ex. 1018, 25:56–60. Given this teaching, a POSITA would have understood that Chow taught identifying service permissions associated with the Revision Manager (network-based agent). Ex. 1005, ¶ 152. Moreover, a POSITA would have understood that this software that identified the service permissions would have used the service wrapper (software that used the HTTP protocol to mediate between the agent and the service) to determine what the service permissions were for the document. *Id.* For these reasons, a POSITA would have understood that Chow taught identifying, using the service wrapper, service permissions associated with the network-based agent. *Id.*

b. Determining

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

Chow taught that the Revision Manger checked security classification levels of the source and the client to ensure that the client had the necessary permission to

access a document, like a webpage, before the Revision Manager would obtain an updated copy of the document. Ex. 1018, 25:56–60. Given this teaching, a POSITA would have understood that Chow taught determining whether the service permissions included permissions required to allow the Revision Manager (network-based agent) to be executed to obtain a copy of the document. Ex. 1005, ¶ 153. Moreover, a POSITA would have understood that this software that determined whether the service permissions were sufficient would have used the service wrapper (software that used the HTTP protocol to mediate between the agent and the service) to determine what the service permissions were for the document. *Id.* For these reasons, a POSITA would have understood that Chow taught determining, using the service wrapper, whether the service permissions include permissions required by the service wrapper to execute the network-based agent. *Id.*

Because every element of claim 14 was taught by Chow, claim 14 would have been obvious to a POSITA over Chow. *Id.*

9. Claim 22

The system of claim 9, further comprising an engine configured to control consumption of the service resource by the network-based agent

Claim 22, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 9 would have been obvious over

Chow. *See* § VII.A.6. The additional element recited in claim 22 would have likewise been obvious over Chow.

Chow taught that the Revision Manager program would only retrieve a document from a source if the monetary costs associated with that document retrieval did not exceed a “certain acceptable cost.” Ex. 1018, 25:65–26:5, 29:60–30:6. As discussed above, a POSITA would have understood that these costs were amounts of service resources and that they would be consumed by retrieving a document. *See* § VII.A.2.d (citing Ex. 1005, ¶¶ 111–114). For these reasons, a POSITA would have understood that Chow taught an engine configured to control consumption of the service resource by the network-based agent. Ex. 1005, ¶ 156. Claim 22, therefore, would have been obvious to a POSITA. *Id.*, ¶ 157.

10. Claim 24

Claim 24, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow.

a. Preamble

24. A method comprising

If this preamble is a limitation, Chow taught computer processes, which are methods. *See* Ex. 1018, Figs. 7–22, 33, 35–46, 10:40–20:64, 22:58–36:57.

b. “Receiving...”

receiving, using a computing device, data for creating a network-based agent

This element was substantively indistinguishable from the “receiving...” element of claim 9, which recited instructions in a memory of a computing device (a system with a processor and a memory containing instructions), and would have been obvious to a POSITA for the same reasons. *See* § VII.A.6.c.i above.

c. “Invoking...”

invoking, using the computing device, and in response to receiving a URL defining a type of event and identifying the network-based agent, execution of the network-based agent, wherein the invoking comprises using a service and a service resource configured to be consumed by the network-based agent for performing the operation, and wherein a discrete unit of the service resource is exhausted upon being consumed by the network-based agent

This element was substantively indistinguishable from the “invoking...” element of claim 9, which recited instructions in a memory of a computing device (a system with a processor and a memory containing instructions), and would have been obvious to a POSITA for the same reasons. *See* § VII.A.6.c.ii above.

d. “Communicating...”

communicating, using the computing device, a result of the operation over a network communication link

This element was substantively indistinguishable from the “communicating...” element of claim 9, which recited instructions in a memory of a computing device (a system with a processor and a memory containing instructions), and would have been obvious to a POSITA for the same reasons. *See* § VII.A.6.c.iii above.

Because every element of claim 24 was taught by Chow, claim 24 would have been obvious to a POSITA over Chow. Ex. 1005, ¶ 163.

11. Claim 25

25. The method of claim 24, wherein invoking execution of the network-based agent comprises using an event handler

Claim 25, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 24 would have been obvious over Chow. *See* § VII.A.10. The additional element recited in claim 25 would have likewise been obvious over Chow.

Chow taught that the Revision Manager included a “HTTPD server” process and a “Polling Daemon” process. Ex. 1018, 11:43–45. The HTTPD server process ran a software process that listened for requests from client browsers. *Id.*, 11:49–

54; Figure 8 (steps 33–37). When a request came in, the process forked to a child process to handle the request. *Id.* The operation of that child process is described in Figures 9–17 and 11:55–17:43. From these teachings, a POSITA would have recognized that this software process included an event handler because it invoked execution of the Revision Manager (network-based agent) upon the occurrence of an event. Ex. 1005, ¶ 165. Claim 25, therefore, would have been obvious to a POSITA over Chow. *Id.*, ¶ 167.

This conclusion would be the same under any prior proposed construction of “event handler.” It would be true if the Board were to adopt HCC’s proposed construction of “event handler” as “a software routine in an agent for handling an occurrence of an event comprising instructions and data” because this software process of Chow handled the occurrence of an event and comprised instructions and data. *Id.*, ¶ 166. And it would be true if the Board were to adopt IV’s proposed construction of “event handler” as “one or more executable instructions in an agent for handling an event” because the software process of Chow was one or more instructions in an agent that handled an event. *Id.*

12. Claim 26

26. The method of claim 25, wherein the event handler directs operation of the network based agent upon the occurrence of the event

Claim 26, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow. As shown above, claim 25 would have been obvious over Chow. *See* § VII.A.11. The additional element recited in claim 26 would have likewise been obvious over Chow.

As discussed for claim 25, a POSITA would have recognized that the listening loop was an event handler. *See* § VII.A.11 above. While in that loop, when a request came in, the process forked to a child process to handle the request. *Id.* The operation of that child process is described in Figures 9–17 and 11:55–17:43. The child process handled both incoming POST requests (steps 41–47) and incoming GET requests (steps 48–50). *Id.*, 11:60–12:37, Figure 9 (steps 40–51). A POSITA would have recognized that the steps for a GET request would be executed when the client browser sent an HTTP GET request to the Revision Manager after receiving a CCI GET request from the Revision manager. Ex. 1005, ¶ 169. From these teachings, a POSITA would have recognized that upon receiving a request (an occurrence of an event), the Revision Manager’s software processes (the event handler) would direct operation of the Revision Manager (network-based agent) to provide a copy of the requested webpage and monitor that webpage

for future updates. *Id.* Claim 26, therefore, would have been obvious to a POSITA. *Id.*, ¶ 170.,

B. Ground 2: Chow and Bauer Rendered Claims 6, 10, 11, and 23 Obvious.

Claims 6, 10, 11, and 23 are invalid under 35 U.S.C. § 103 over Chow in view of Bauer. As described above, Chow disclosed a software agent for providing updated copies of documents, like webpages, where the agent was invoked by receiving a URL and where obtaining updated copies of documents consumed monetary resources. Ex. 1018, 4:64–5:1, 5:5–14, 9:59–10:30, 16:17–26, 16:48–51, 25:65–26:5. Bauer disclosed a user-editable software agent. Ex. 1019, 3:46–57. For the reasons below, a POSITA considering the teachings of these references would have found the claimed subject matter obvious.

1. Summary of Chow

See § VII.A.1 above.

2. Summary of Bauer

Bauer recognized that there was a need for users to have the capability of adding objects to an agent. Ex. 1019, 3:39–42. Bauer met this need by teaching an extensible network agent which had “the capability of adding new objects to the agent without requiring modification of the agent source code.” *Id.*, 3:46–50. In particular, Bauer taught that a user could edit a configuration file to define objects

and the agent could be invoked to read the configuration file to incorporate objects from the configuration file. *Id.*, 3:52–57.

3. A POSITA would have combined Chow and Bauer

Both Chow and Bauer taught customizing the agent. For example, Chow suggested the ability for a user to customize the Revision Manager agent functionality by sending a program to the agent that would monitor the price of stocks and bonds. Ex. 1018, 26:53–60. As another example, Chow taught that the Revision Manager agent would read from a configuration file “in order to customize itself.” Ex. 1018, 11:35–40. But Chow did not disclose *who* would edit the configuration file. Bauer, on the other hand, taught that a *user* would edit the configuration file in order to customize the agent. Ex. 1019, 3:52–57, 4:37–43. A POSITA reading Bauer would have been motivated to modify Chow so that the user customized the agent. Ex. 1005, ¶ 171. This modification would be minor because both Chow and Bauer customized the agent by editing the configuration file. The only modification would be to allow the user to make the edits. Modifying Chow to include the teachings of Bauer of a user editing the configuration file would have been nothing more than using known techniques to improve similar devices and the results of this modification would have been predictable. *Id.* A POSITA would have therefore been motivated to combine the teachings of Chow and Bauer. *Id.*

4. Claim 6

6. *The system of claim 1, further comprising: means for allowing a user to modify the network-based agent*

Claim 6, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow in view of Bauer. As shown above, claim 1 would have been obvious over Chow. *See* § VII.A.2. The additional element recited in claim 6 would have been obvious over Chow in view of Bauer.

A POSITA would have understood that Chow in view of Bauer taught the function and structure of the “means for allowing...” element. Bauer taught a computer network including a variety of network agents. Ex. 1019, 4:12–17. The agent read a user-editable configuration file to configure itself. *Id.*, 3:52–57, 4:37–43. Chow similarly taught that when the Revision Manager agent was initiated, it would read from a configuration file “in order to customize itself.” Ex. 1018, 11:35–40. For these reasons, a POSITA would have understood that Chow in view of Bauer taught the construed function (allowing a user to modify the network-based agent) and structure (network system) of the means plus function limitation of this element of this claim. Ex. 1005, ¶ 176. Claim 6, therefore, would have been obvious to a POSITA in view of Chow and Bauer. *Id.*, ¶ 177.

5. Claim 10

10. The system of claim 9, wherein the operations further comprise enabling, using a user interface, a user to create the network-based agent

Claim 10, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow in view of Bauer. As shown above, claim 9 would have been obvious over Chow. *See* § VII.A.6. The additional element recited in claim 10 would have been obvious over Chow in view of Bauer.

Bauer taught a network agent which read a user-editable configuration file to configure or re-configure the agent. Ex. 1019, 3:52–57, 4:12–17, 4:37–43. Chow similarly taught that when the Revision Manager agent was initiated, it would read from a configuration file “in order to customize itself.” Ex. 1018, 11:35–40. A POSITA would have understood that enabling a user to edit a configuration required a user interface. Ex. 1005, ¶ 179. For these reasons, a POSITA would have understood that Chow in view of Bauer taught enabling, using a user interface, a user to create the network-based agent. Ex. 1005. Claim 10, therefore, would have been obvious to a POSITA over Chow in view of Bauer. *Id.*, ¶ 180.

6. Claim 11

11. The system of claim 10 wherein the user interface is a web browser user interface

Claim 11, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow in view of Bauer. As shown above, claim 10 would have been obvious over Chow in view of Bauer. *See* § VII.B.5. The additional element recited in claim 11 would have likewise been obvious over Chow in view of Bauer.

Chow taught a web browser user interface. Ex. 1018, 3:65–4:1 (describing “a browser executed at a user’s terminal); *see generally id.*, 1:30–2:29 (describing web browsers that were commercially available in the 1990s). For this reason, a POSITA would have understood that Chow in view of Bauer taught a web browser user interface. Ex. 1005, ¶ 182. Claim 11, therefore, would have been obvious to a POSITA over Chow in view of Bauer. *Id.*, ¶ 183.

7. Claim 23

The system of claim 9, wherein the data includes data for modifying an agent template to create a user-customized agent

Claim 23, as a whole, would have been obvious to a POSITA under 35 U.S.C. § 103 over Chow in view of Bauer. As shown above, claim 9 would have been obvious over Chow. *See* § VII.A.6. The additional element recited in claim 23 would have been obvious over Chow in view of Bauer.

Bauer taught a network agent which read a user-editable configuration file to configure the agent when it is installed. Ex. 1019, 3:52–57, 4:12–17, 4:37–43. Chow similarly taught that when the Revision Manager agent was initiated, it would read from a configuration file “in order to customize itself.” Ex. 1018, 11:35–40. Bauer’s configuration file defined user-defined objects and added these user-defined objects to the agent. Ex. 1019, 4:22–27, 4:37–44, 6:27–38. A POSITA would have recognized that these user-defined objects were agent templates. Ex. 1005, ¶ 185. For example, the ’752 patent described an agent template as an “agent class from which agents 22 can be created by instantiating the class / template.” Ex. 1001, 10:4–7. This is analogous to the user defined objects in Bauer. For these reasons, a POSITA would have understood that Chow in view of Bauer taught data for modifying an agent template to create a user-customized agent. Ex. 1005, ¶ 185. Claim 23, therefore, would have been obvious to a POSITA over Chow in view of Bauer. *Id.*, ¶ 186.

C. Ground 3: Chow and White Rendered Claims 1–4, 9, 13–14, 22, and 24–26 Obvious.

If the narrow “mobile agent” construction of agent is adopted, claims 1–4, 9, 13–14, 22, and 24–26 are invalid under 35 U.S.C. § 103 over Chow in view of White. As discussed above, Chow disclosed a stationary software agent for providing updated copies of documents, like webpages, where the agent was invoked by receiving a URL and where obtaining updated copies of documents

consumed monetary resources. Ex. 1018, 4:64–5:1, 5:5–14, 9:59–10:30, 16:17–26, 16:48–51, 25:65–26:5. And White disclosed a mobile agent system. Ex. 1020, 8:27–41. For the reasons below, A POSITA considering the teachings of Chow and White would have found the claimed subject matter obvious.

1. Summary of Chow

See § VII.A.1 above.

2. Summary of White

White taught an alternative to prior art “remote procedure calling” called “remote programming.” Ex. 1020, 4:22–31. In remote programming, a first process on a client computer, sends a list of instructions to a second process on a server computer which then executes the list of instructions. *Id.*, 4:22–28. An advantage of remote programming was that it required fewer uses of network communication media and also allowed client processes to use server operations not explicitly provided for by the developers of the server processes. *Id.*, 5:17–25. But White also taught that the existing state of “remote programming” needed improvement. *Id.*, 5:26–39. White acknowledged two prior attempts to improve upon remote programming: Wolfshon and Tschritzis. *Id.*, 5:41–6:67. But White also criticized Wolfshon and Tschritzis for their inefficiencies and lack of sufficient security measures. 5:51–6:2, 6:41–7:11. So White taught an agent system that solved the shortcomings of the prior art.

White's system comprised "agent" and "place" classes. *Id.*, 8:27–29. The agent class could be used to form an "agent process" (or "agent") that could "(i) examine and modify itself, (ii) transport itself from a first place process ... in the network to a second place process in the network, and (iii) interact with other agents found at the second place process." *Id.*, 8:29–38. This allowed an agent to "travel from a first computer system to a second computer system." *Id.*, 8:40–41. White's agent system also solved shortcomings of the prior art that White identified. *See id.*, 8:51–13:22. Given these solutions, the agent system of White "represent[ed] a significant improvement over the prior art." *Id.*, 13:23–26.

3. A POSITA would have combined Chow and White

A POSITA would have recognized that Chow implemented "remote procedure calling." Ex. 1005, ¶ 188. For example, the "polling daemon" process of the Revision Manager, which determined whether the web page hosted by a remote web server had been updated, was a "remote procedure calling" procedure. *Id.* (citing Ex. 1018, 17:44–20:64; Figs. 18–22). And, White taught that "remote programming" was an improvement upon "remote procedure calling." Ex. 1020, 4:22–28.

Remote procedure calling processes can require "substantial use of communications media which in turn involves considerable expense and time." Ex. 1020, 3:6–15. According to White, a remedy for this was to implement a "remote

programming” process. *See id.*, 5:17–25. 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 because the combination would be the simple substitution of one known technique for another and would have obtained predictable results. Ex. 1005, ¶ 189. In fact, given that White solved some of the issues with prior art remote programming systems, a POSITA would have preferred to use White’s remote programming implementation rather than the prior art remote programming implementations. *See* Ex. 1020, 8:51–13:22. For these reasons, a POSITA would have been motivated to modify Chow to include a mobile agent system as taught in White. Ex. 1005, ¶ 190.

4. Claims 1–4, 9, 13–14, 22, and 24–26

The technical analysis of Ground 3 is exactly the same as Ground 1 except that the stationary agent system of Chow has been modified to be a mobile agent system as taught by White. There can be no doubt that White taught mobile agents as that term is construed in Ground 3 because White is the very same source of the definition that is the basis for that construction. *See* § V.C, above. So the combination of Chow and White would have taught every element of claims 1–4,

9, 13–14, 22, and 24–26 and those claims, as a whole, would have been obvious to a POSITA.

D. Ground 4: Chow, Bauer, and White Rendered Claims 6, 10, 11, and 23 Obvious.

If the narrow construction of agent is adopted, claims 6, 10, 11, and 23 are invalid under 35 U.S.C. § 103 over Chow in view of Bauer and further in view of White. As discussed above, Chow disclosed a software agent for providing updated copies of documents, like webpages, where the agent was invoked by receiving a URL and where obtaining updated copies of documents consumed monetary resources. Ex. 1018, 4:64–5:1, 5:5–14, 9:59–10:30, 16:17–26, 16:48–51, 25:65–26:5. As also discussed above, Bauer disclosed a user-editable software agent. Ex. 1019, 3:46–57. And as also discussed above, White disclosed a mobile agent system. Ex. 1020, 8:27–41. For the reasons below, A POSITA considering the teachings of these references would have found the claimed subject matter obvious.

1. Summary of Chow

See § VII.A.1 above.

2. Summary of Bauer

See § VII.B.2 above.

3. Summary of White

See § VII.C.2 above.

4. A POSITA would have combined Chow, Bauer, and White

As described above, a POSITA would have been motivated to modify Chow to have user editable configuration files as taught in Bauer and would have been motivated to modify Chow to have a mobile agent as taught in White. *See* §§ VII.B.3, VII.C.3 above. For those same reasons, a POSITA would have been motivated to make both modifications to Chow at the same time, thereby combining the teachings of Chow, Bauer, and White.

5. Claims 6, 10, 11, and 23

The technical analysis of Ground 4 is exactly the same as Ground 2 except that the combined stationary agent system of Chow and Bauer has been modified to be a mobile agent system as taught by White. There can be no doubt that White taught mobile agents as that term is construed in Ground 4 because White is the very same source of the incorporated by reference definition that is the basis for that construction. *See* § V.C, above. So the combination of Chow, Bauer, and White would have taught every element of claims 6, 10, 11, and 23 and those claims, as a whole, would have been obvious to a POSITA.

E. Secondary considerations

As far as VMware is aware, IV has never alleged any secondary considerations that would be relevant to an obvious determination of any claims of the '752 patent. Should IV allege any secondary considerations in the future, VMware reserves its rights to respond to those allegations.

VIII. Mandatory Notices

A. Real Parties-in-Interest

The real party-in-interest in this proceeding is VMware, Inc., who is the sole party who has funded this Petition and who has full and exclusive control over these proceedings. Out of an abundance of caution, VMware discloses that VMware, Inc. is a majority-owned subsidiary of EMC Corporation which is a wholly-owned subsidiary of Dell Technologies Inc. VMware does not believe that either EMC Corporation or Dell Technologies, Inc. are real parties-in-interest and, as far as VMware is aware, neither EMC Corporation nor Dell Technologies, Inc. have ever been served with a complaint accusing them of infringing the '752 patent.

B. Related Proceedings

There are at least three related proceedings. IV has asserted the '752 patent against VMware in the Western District of Texas, case no. 1:09-cv-01075. IV had also asserted the '752 patent against HCC Insurance Holdings, Inc., *et al.* in the Eastern District of Texas, case no. 6-15-cv-00660. HCC Insurance Holdings, Inc. had also filed an IPR petition on the '752 patent. IPR2016-01431. There appear to be no pending applications that claim priority to the '752 patent.

This identification of related matters is based on information currently known to Petitioner based on a reasonably diligent search of publicly available materials. IV may be aware of other proceedings—including proceedings before

the Board or otherwise before the Office—relating to patent claims encompassing similar subject matter or raising similar issues to those involved here.

C. Lead and backup counsel

VMware’s lead and backup counsel are:

Lead Counsel for Petitioner	Backup Counsel for Petitioner
Katherine A. Vidal Winston & Strawn LLP 275 Middlefield Rd, Suite 205 Menlo Park, California 94025 kvidal@winston.com T: 650.858.6500, F: 650.858.6550 USPTO Reg. No. 46,333	Louis L. Campbell Winston & Strawn LLP 275 Middlefield Rd, Suite 205 Menlo Park, California 94025 llcampbell@winston.com T: 650.858.6500, F: 650.858.6550 USPTO Reg. No. 59,963 Michael A. Tomasulo Winston & Strawn LLP 333 S. Grand Ave, 38th Floor Los Angeles, California 90071 mtomasulo@winston.com T: 213.615.1700, F: 213.615.1750 USPTO Reg. No. 43,957

D. Electronic Service

VMware consents to electronic service at:

VMware-IV-PTAB@winston.com.

IX. Institution of This *Inter Partes* Review Would Be Equitable.

VMware has never previously filed a petition for the ’752 patent, but another unrelated petitioner has. In IPR2016-01431, HCC Insurance Holdings, Inc. asserted that claims of the ’752 patent would have been obvious over Chow, Bauer,

and another paper (“Goddard”) not at issue here. The petition was withdrawn prior to an institution decision. Ex. 1008. VMware has never been in privity with HCC.

This is VMware’s first petition on this patent; it is not a “follow-on petition.” But even if it were, “[t]here is no *per se* rule precluding ... follow-on petitions,” although the Board will consider the equities in determining whether to institute review. *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, No. IPR2016-01357, 2017 WL 3917706, at *7 (P.T.A.B. Sept. 6, 2017) (precedential decision). *General Plastic* set forth a list of factors to consider in determining whether to institute a follow-on petition. *Id.* at *7–8. Even if this were a “follow-on” petition, the *General Plastic* factors show that institution of this petition would be equitable and not unduly prejudicial to IV.

- The first five factors favor institution because this is VMware’s first petition on this patent.
- Factor six favors institution because the Board has not previously spent resources considering the issues in this petition.
- Factor seven is neutral because this petition would not seem to affect the Board’s ability to timely issue a final determination.

Moreover, unlike in *NHK Spring Co., Ltd. v. Intri-Plex Technologies, Inc.* IPR2018-00752, Paper No. 8, 19–20 (P.T.A.B. Sep. 12, 2018) (precedential decision), the schedule of the co-pending district court litigation between VMware

and IV does not present any potential inefficiencies. Trial in the district court is not expected until at least March 2021, well after the Board will have reached an institution decision. *See* Ex 1012.

For these reasons, the Board should not exercise its discretion to deny institution of this petition.

X. Fees

The required fee is being paid electronically through PTAB E2E.

XI. Conclusion

The inventors of the '752 patent did not invent software agents. They did not invent extensible software agents. They did not invent software agents that consumed exhaustible service resources. On all of this, the examiner agreed. The only aspect of the claims the examiner did not find in the prior art was invoking an agent via a URL that identified the agent and an event. But as shown above, Chow—a reference never before the examiner—taught this missing element. Reviewing the claims of the '752 patent in light of Chow shows that the challenged claims of the '752 would have been obvious to a POSITA in October 1998. Petitioner therefore requests *inter partes* review of the '752 patent and cancellation of the challenged claims.

Dated: February 10, 2020

Respectfully submitted,

/ Louis L. Campbell /
Katherine A. Vidal
Winston & Strawn LLP
275 Middlefield Rd, Suite 205
Menlo Park, California 94025
kvidal@winston.com
T: 650.858.6500, F: 650.858.6550
USPTO Reg. No. 46,333
Lead Counsel for Petitioner
VMware, Inc.

Louis L. Campbell
Winston & Strawn LLP
275 Middlefield Rd, Suite 205
Menlo Park, California 94025
llcampbell@winston.com
T: 650.858.6500, F: 650.858.6550
USPTO Reg. No. 59,963
Back-up Counsel for Petitioner
VMware, Inc.

Michael A. Tomasulo
Winston & Strawn LLP
333 S. Grand Ave, 38th Floor
Los Angeles, California 90071
mtomasulo@winston.com
T: 213.615.1700, F: 213.615.1750
USPTO Reg. No. 43,957
Back-up Counsel for Petitioner
VMware, Inc.

CERTIFICATE OF COMPLIANCE

This petition complies with the word count limits set forth in 37 C.F.R. § 42.24(a)(1)(i), because this Petition contains 13,930 words, excluding the parts of the petition exempted by 37 C.F.R. § 42.24(a)(1) and determined using the word count provided by Microsoft Word, which was used to prepare this Petition.

Dated: February 10, 2020

Respectfully submitted,

/ Louis L. Campbell /

Louis L. Campbell

Winston & Strawn LLP

275 Middlefield Rd, Suite 205

Menlo Park, California 94025

llcampbell@winston.com

USPTO Reg. No. 59,963

T: 650.858-6500, F: 650.858-6550

Back-up Counsel for Petitioner

VMware, Inc.

CERTIFICATE OF SERVICE

Under 37 C.F.R. §§ 42.6(e) and 42.105(a), this is to certify that on February 10, 2020, I caused to be served a true and correct copy of the foregoing
“**PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1–4, 6, 9–11, 13–14, and 22–26 OF U.S. PATENT NO. 7,949,752**” and Exhibits 1001 – 1025 by
FedEx on the Patent Owner at the correspondence address of record for U.S. Patent
No. 7,949,752:

Sterne, Kessler, Goldstein & Fox P.L.L.C.
1100 New York Ave, N.W.
Washington, DC 20005

A courtesy copy of this Petition and supporting material was also served on
litigation counsel for Patent Owner via email:

Paul J. Hayes
phayes@princelobel.com
Prince Lobel Tye LLP
One International Place, Suite 3700
Boston, Massachusetts 02110

/ Louis L. Campbell /
Louis L. Campbell
WINSTON & STRAWN LLP
275 Middlefield Rd, Suite 205
Menlo Park, California 94025
llcampbell@winston.com
USPTO Reg. No. 59,963
T: 650.858-6500, F: 650.858-6550
Back-up Counsel for Petitioner
VMware, Inc.