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Paper 46
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMPASS BANK, COMMERCE BANCSHARES, INC., and
FIRST NATIONAL BANK OF OMAHA,
Petitioner,

v.

INTELLECTUAL VENTURES II, LLC,
Patent Owner.

Case IPR2014-00786
Patent 6,826,694 B1

Before JAMES T. MOORE, MEREDITH C. PETRAVICK, and BENJAMIN D. M. WOOD, *Administrative Patent Judges.*

PETRAVICK, *Administrative Patent Judge.*

FINAL WRITTEN DECISION

Inter Partes Review
35 U.S.C §318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Compass Bank, Commerce Bancshares, Inc., and First National Bank of Omaha (collectively, "Petitioner") filed a Petition (Paper 1, "Pet.") to institute an *inter partes* review of the sole claim of U.S. Patent No. 6,826,694 B1 ("the '694 patent"). On September 24, 2014, pursuant to 35 U.S.C. § 314, we instituted this trial as to the sole claim on the following grounds:

Ground	Prior Art
§ 102(b)	Rubin[1]
§ 103	Norman[2] and Rubin
§ 102(e)	Cunningham[3]

Paper 10. Intellectual Ventures II, LLC ("Patent Owner") filed a Patent Owner Response (Paper 21, "PO Resp."), and Petitioner filed a Reply (Paper 29, "Pet. Reply").

On April 29, 2015, Patent Owner filed a Motion to Exclude Evidence (Paper 33, "PO Mot."), and Petitioner filed a Motion to Exclude Evidence (Paper 35, "Pet. Mot.").

An oral hearing in this proceeding was held on June 3, 2015. A transcript of the hearing is included in the record. Paper 45.

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[1] Aviel D. Rubin, et al., *Blocking Java Applets at the Firewall*, IEEE, 1–11 (1997) (Ex. 1009).

[2] Norman Data Defense Systems, AN INTRODUCTION TO THE NORMAN FIREWALL: THE SECURE WAY TO CONNECT TO THE INTERNET AND OTHER TCP/IP-BASED NETWORKS, vol. 12, Firewalls & Internet Security, 1–10, (Oct. 1995) (Ex. 1010).

[3] Cunningham et al., U.S. Patent No. US 6,219,786 B1 (issued Apr. 17, 2001) (Ex. 1011).

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that the sole claim of the '694 patent is unpatentable.

A. The '694 Patent

The '694 patent is titled "High Resolution Access Control" and issued on November 30, 2004. Ex. 1004, 1. The '694 patent claims priority to Provisional Patent Application No. 60/105,188, which was filed on October 22, 1998. *Id.*

The '694 patent discloses a system and method of filtering data packets at a firewall. *See id*. at col. 1, ll. 11–12. The packet includes a header and a payload. *Id*. at col. 1, ll. 16–17. The header includes header parameters, such as source address, destination address, port number, and protocol number. *Id*. at col. 1, ll. 16–26, col. 2, ll. 27–29. The payload includes data intended to be conveyed to the destination, such as a connection request or document data. *Id*. at col. 1, ll. 26–28, col. 2, ll. 28–31.

Figure 1, reproduced below, is a flow chart illustrative of the method.

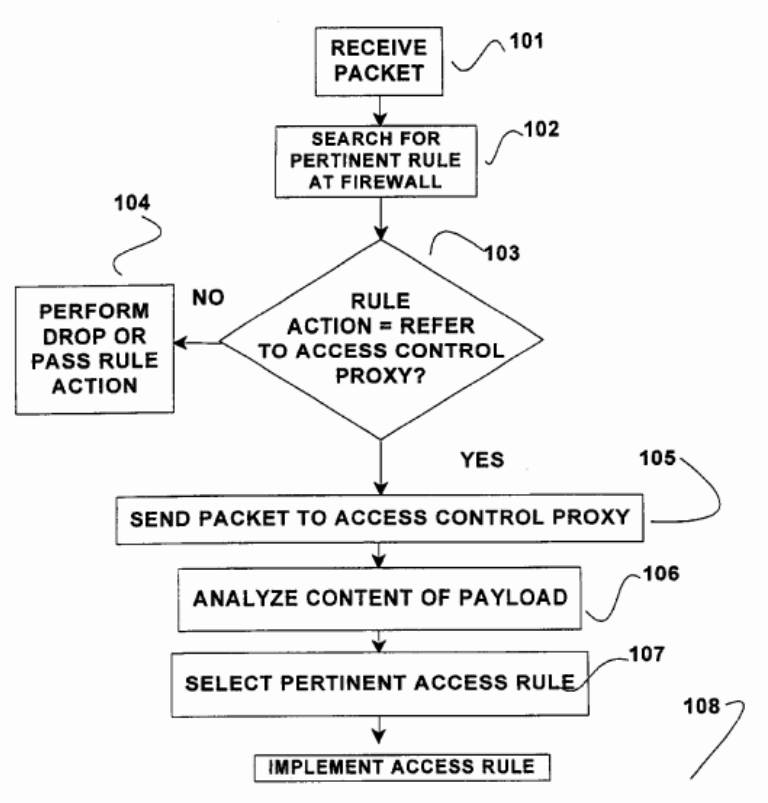

Figure 1 is flow chart depicting the method of the '694 patent.

When a packet is received at the firewall (step 101), the system identifies, from a "set of rules stored at the firewall," a rule based upon the packet's header parameters (step 102). *Id.* at col. 3, ll. 9–12. Depending on whether the packet satisfies the rule, the packet is then either dropped or passed (step 104) or referred to an access control proxy (step 105). *Id*. at col. 3, ll. 12–18, col. 4, ll. 47–50.

If the packet is sent to the access control proxy (step 105), the access control proxy then analyzes the content of the payload of the packet (step 106) and selects an "access rule" based on the content of the payload (step 107). *Id*. at col. 3, ll. 18–37. In an alternative embodiment, the access control proxy selects the access rule "based upon a combination of the

contents and header parameters of the packet." *Id*. at col. 3, ll. 39–42, col. 4, ll. 36–38. In yet another alternative, the access control proxy selects the access rule based upon the contents of one or several packet payloads because the information needed to select an access rule is spread across the contents of several packets. *Id*. at col. 4, ll. 38–40, col. 5, ll. 1–19.

The access control proxy then implements the selected access rule for the packet by performing either a PASS or a DROP action (step 108). *Id*. at col. 3, ll. 51–55, col. 4, ll. 30–34.

The '694 patent discloses that filtering packets based upon not only the header information but also upon the information contained in the packet payload differs from known firewall filtering methods and is advantageous because it provides high resolution access control. *Id*. at col. 1, l. 58–col. 2, l. 9.

B. The Claim

Claim 1, reproduced below, is the sole claim of the '694 patent.

> 1. A method for filtering a packet, including the steps of:
>
> a. receiving a packet having at least one header parameter and a payload;
>
> b. selecting an access rule based upon the contents of the payload of the packet received in step a;
>
> c. implementing the access rule for a packet, wherein the access rule is selected based upon a combination of the contents of the packet received in step a and the contents of at least one other packet.

C. Related Proceedings

The parties state that the '694 patent is involved in numerous district court cases, including *Intellectual Ventures II LLC v. BBVA Compass Bancshares, Inc.*, No. 2:13-cv-01106 (N.D. Ala.), *Intellectual Ventures II LLC v. Commerce Bancshares, Inc.*, No. 2:13-cv-04160 (W.D. Mo.), and *Intellectual Ventures II LLC v. First National Bank of Omaha*, No. 8:13-cv-00167-LSC (D. Neb). Pet. 1–2; Paper 7, 2–3.

Additionally, the '694 patent is the subject of two additional Petitions for *inter partes* review, *International Business Machines Corp. v. Intellectual Ventures II LLC*, Case IPR2014-00587 (PTAB) and *International Business Machines Corp. v. Intellectual Ventures II LLC*, Case IPR2014-01465 (PTAB).

A Final Written Decision in IPR2014-00587 is entered concurrently with this Decision.

II. ANALYSIS

A. Claim Construction

Consistent with the statute and legislative history of the America Invents Act (AIA)[4], the Board interprets claims using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1276–78 (Fed. Cir. 2015). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the

[4] Pub. L. No. 112-29, 125 Stat. 284 (2011).

context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

i. Contents of the Packet

Claim 1's step c recites "wherein the access rule is selected based upon a combination of the contents of the packet received in step a and the contents of at least one other packet." Ex. 1004, col. 6, ll. 41–44.

The parties dispute the meaning of "contents of the packet."[5] Petitioner proposes that the broadest reasonable construction of "contents of the packet" is the contents of "the header and/or payload of the packet." Pet. 10–11. Patent Owner proposes a narrower construction: "contents of the header and the payload of the packet." PO Resp. 9–21. According to Patent Owner, its proposed construction requires that the access rules must be selected based on both the contents of the header and the contents of the payload of the packet. *See id*. at 12–21.

a. Petitioner's Argument

Petitioner argues that its construction is consistent with the claim, which sets out that a packet has at least one header parameter and a payload in step a, and with the Specification, which states that a packet includes a header and payload. Pet. 10–11 (citing Ex. 1004, col. 1, ll. 16–17).

Petitioner further argues that its construction is the only construction that encompasses all embodiments disclosed in the Specification. Pet. Reply 2–3. According to Petitioner, the Specification discloses an embodiment in

[5] Neither Petitioner nor Patent Owner asserts that the '694 patent contains a lexicographic definition of this limitation.

which an access rule is selected based on headers, but not payloads, a second embodiment in which an access rule is selected based on payloads, but not headers, and a third embodiment in which an access rules is selected based upon a combination of headers and payloads. *Id*.

Petitioner also argues that based on the Specification, "the inventors clearly know how to describe selecting an access rule based on headers and payloads by using words like 'both' or 'combination,'" but that claim 1 was not written that way. Pet. Reply 3 (citing Ex. 1004, col. 3, ll. 38–42, col. 4, ll. 36–38).

b. Patent Owner's Argument

Patent Owner first argues that its construction, unlike Petitioner's, is internally consistent with claim 1. PO Resp. 12–21. According to Patent Owner, step a of claim 1 requires that the contents of the packet include a header and a payload. *Id*. at 14. Step a recites "a packet having at least one header parameter and a payload." Ex. 1004, col. 1, ll. 37–38. Patent Owner, thus, argues to be consistent with step a, the rule selection of step c must be based upon both the header and payload. PO Resp. 14–15. Patent Owner also argues that this is consistent with the absence of qualifying language, such as "at least a portion of the contents of the packet" and "at least some of the contents of the packet." *Id*. at 15.

Patent Owner also argues that to maintain internal consistency with step b of claim 1, step c's rule selection must be based upon information from both the header and payload of the packet. Step b requires that the access rule is selected based upon "the contents of the payload of the packet." Patent Owner contends that one of ordinary skill in the art would

understand that step c further limits and clarifies the rule selection in step b. *Id*. at 13. To further limit and clarify step b, the rule selection in step c must be based upon information from the both the header and payload of the packet. *Id*.

According to Patent Owner, under Petitioner's construction, the rule selection of step c could be based upon just the header of the packet and, thus, step c does not specify a further requirement or clarify step b. PO Resp. 13. Patent Owner argues that Petitioner's construction would improperly replace steps b's "payload" with "header." *Id*.

Patent Owner further argues that its construction is consistent with the Specification. *Id*. 15–21. Patent Owner argues that the Specification states that a packet includes both a header and a payload and that nowhere does the Specification state that the packet includes a header and/or payload. *Id*. at 21.

Patent Owner also disagrees with Petitioner that the Specification describes embodiments where a rule is selected based only on the payload. *Id*. at 18–21. Patent Owner states that the Specification may "appear to give examples of selecting a rule based only on the payload, but the correct view of these embodiments is that selection of the rule was also based on the header." *Id*. at 19. According to Patent Owner, every packet having a payload inspected for rule selection, for example at the access proxy (e.g., step 106 in Fig. 1) has first its header inspected upon receipt of the packet (e.g., step 102 in Fig. 1). *Id*. at 18–21. Patent Owner argues that this is consistent with the Specification's disclosure that it is advantageous to provide filtering based not only on header information but upon information contained in the packet payload as well. *Id*. at 17–18.

Patent Owner also argues that we should give Petitioner's construction no weight because Petitioner did not provide any evidence to support its construction. *Id*. at 11. Patent Owner contends that Dr. Kesidis' testimony is conclusory and provides no reasoning to support his testimony. *Id*. Patent Owner argues that, in contrast, its construction is supported by the testimony of Dr. Mir. *Id*. at 11; *see id.* at 12–21 (citing Ex. 2022 ¶¶ 40–79). Dr. Mir's testimony, however, substantially repeats Patent Owner's arguments supporting its construction (*see* Ex. 2022 ¶¶ 40–79), and, for the same reasons discussed below with regards to Patent Owner's argument, we find it unpersuasive.

c. Analysis

We are persuaded by Petitioner that the broadest reasonable construction, in light of the Specification, of "contents of the packet" in step c is the header and/or payload of the packet. Petitioner's construction is supported, sufficiently, by the '694 patent itself, which discloses embodiments of selecting access rules based upon the header and/or payload of the packet. The'694 patent discloses a first embodiment in which the firewall selects a rule based on header parameters only, and discloses that, based on the header parameters the packet may be passed or dropped. *See* Ex. 1004, col. 2, ll. 35–37, 40–43, col. 3, ll. 10–12; Fig 1 (path formed by steps 101, 102, 103, and 104).

The '694 patent also discloses that an access control proxy selects a rule based on an analysis of the payload of a single or multiple packets. *Id*. at col. 3, ll. 4–8, 18–22, 30–32; col. 4, ll. 28–34, 38–40; Fig. 1 (path formed by steps 106 and 107). The '694 patent further discloses alternate

embodiments, in which the "access control proxy selects an access rule that pertains to the packet based both on an analysis of the payload and the header parameters of the packet" (Ex. 1004, col. 3, ll. 38–41) and the "access rule is retrieved based upon a combination of the contents and header parameters of the packet" (*id.* at col. 4, ll. 36–38).

We are not persuaded by the Patent Owner that Petitioner's construction is unreasonably broad and that "contents of the packet" in step c should be construed, in light of the Specification, to require, more narrowly, that the rule is selected based on information from both the header and the payload. The '694 patent's disclosure that a packet has a header and a payload does not require that step c's rule selection must be based on information from both the header and the payload. Nor does the '694 patent's disclosure of first selecting a rule at the firewall based on header parameters (i.e., steps 101, 102, and 103 of Fig. 1) prior to selecting another rule at the access proxy for some packets (i.e., steps 106 and 107 of Fig. 1), require that step c's rule selection must be based on information from both the header and the payload.

Patent Owner's argument attempts to impermissibly import a requirement from the Specification into the claim. If a feature is not necessary to give meaning to what the inventor means by a claim term, it would be "extraneous," and should not be read into the claim. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998); *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988).

We also are not persuaded by Patent Owner that Petitioner's construction makes step c inconsistent with steps a and b of claim 1.

Nothing in step a's recitation that "a packet having at least one header parameter and a payload," requires that step c's rule selection be based upon both the header and payload of the packet of step a. Step c requires that the access rule is selected based upon the "contents of the packet received in step a and the contents of at least one other packet" but, unlike step b, step c is silent as to whether the information is from the header or payload portion of the contents of the packets. Step c, thus, does not preclude the information coming from the header or payload portion of the contents of the packets.

Step b requires "selecting an access rule based upon the contents of the payload of the packet received in step a." We do not agree with Patent Owner that Petitioner's construction of "contents of the packet" in step c would replace, effectively, step b's "payload" with "header." Step c does not replace step b's requirement but provides an additional requirement for selecting the access rule. In other words, claim 1 requires that the access rule be selected based upon not only the contents of the payload of the received packet, but additionally requires that the rule be selected based upon a combination of the contents of the header and/or payload of the received packet and the contents of the header and/or payload of at least one other packet. This is consistent with the Specification's disclosure of an embodiment in which the contents of several packets are analyzed to select the access rule. Ex. 1004, col. 5, ll. 1–19.

Upon consideration of both Petitioner's and Patent Owner's arguments, we determine that the broadest reasonable interpretation in light of the Specification of "contents of the packet" in step c is the "contents of the header and/or payload of the packet."

ii. "selecting"

Neither Petitioner nor Patent Owner proffers a proposed construction of the claim term "selecting." It is apparent, however, from their arguments that Petitioner and Patent Owner apply different meanings to this claim term when analyzing the prior art. For example, Petitioner argues that Rubin discloses selecting an access rule by identifying a rule or prescribed action based on the information in a packet (Pet. Reply 10), and Patent Owner argues that Rubin does not describe a system that selects between each blocking strategy (PO Resp. 26). Petitioner's argument implies that "selecting" requires choosing whether to apply or not apply a blocking strategy (i.e., a rule). Patent Owner's argument implies that "selecting" requires choosing a blocking strategy or rule from among a plurality of blocking strategies or rules.

Claim 1's step b requires "selecting an access rule based upon the contents of the payload of the packet received in step a." Step c also requires that the access rule is selected based upon a combination of the contents of the received packet and another packet. Neither of these steps, nor the remainder of claim 1, explicitly requires a set of rules or that the rule is selected from a set of rules. Claim 1 is silent as to how the rule is selected, other than that the rule is selected based upon the payload of the received packet and upon a combination of the contents of the received packet and another packet.

The Specification does not contain any definition of "selecting," but does disclose a firewall or access proxy selecting an access rule by searching a set of rules to identify a rule that pertains to the packet. Ex. 1004, col. 3,

ll. 10–12, 30–32, col. 4, ll. 47–59. The Specification, however, does not provide any algorithm or other explanation as to how the firewall processor or access proxy processor identifies the pertinent rule.

A definition of "selecting" is "to choose (as by fitness or excellence) from a number or group; pick out . . . : *to make a choice*." Ex. 3001 (MERRIAM WEBSTER'S COLLEGIATE DICTIONARY,(10th ed. 1993) (emphasis added).

Given the above, we determine that the broadest reasonable construction, in light of the Specification, of step b is to choose the access rule based upon the contents of the payload of the received packet. Likewise, the broadest reasonable construction, in light of the Specification, of step c is the access rule is chosen based upon a combination of the contents of the received packet and another packet.

The broadest reasonable construction of these steps does not require selecting the rule by choosing the access rule from set of rules or preclude selecting the access rule by choosing whether or not the rule is pertinent. Although the Specification discloses selecting a rule from a set of rules (Ex. 1004, col. 3, ll. 10–12, 30–32, col. 4, ll. 47–59), claim 1 does not set forth a set of rules or require that the rule is selected from a set of rules. Limitations appearing in the Specification but not recited in the claim are not read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily).

B. Prior Invention

Patent Owner argues that Rubin and Cunningham would qualify as prior art only under 35 U.S.C. §§ 102(a) and 102(e)[6], respectively, and seeks to disqualify Rubin and Cunningham as prior art by establishing a date of invention prior to the alleged effective dates of Rubin and Cunningham. PO Resp. 36–58. According to Patent Owner the alleged effective date of Rubin is December 31, 1997 and of Cunningham is September 9, 1998. *See id*. at 40–41. Patent Owner alleges that the claimed invention of the '694 patent was reduced to practice "at least as early as early 1996 but no later than June 11, 1996." *Id*. at 40.

i. Rubin

Patent Owner argues that Rubin (Ex. 1009) should be accorded an effective date or publication date of December 31, 1997 because, although Rubin lists a copyright date of 1997, it does not specify when in 1997 it was published. PO Resp. 38. If Rubin is accorded a December 31, 1997 publication date, then Rubin is prior art under 35 U.S.C. § 102(a) and may be overcome by establishing prior invention. Patent Owner further argues we should not consider any evidence of an earlier publication date that is submitted with the Petitioner's Reply, because Petitioner bears the burden of establishing a prima facie showing in the Petition and any new evidence would not be a proper rebuttal. *Id*. at 39.

[6] The '694 patent was filed in 1999, prior to the enactment of the AIA. Thus, pre-AIA 35 U.S.C. § 102 is applicable in this proceeding.

Petitioner argues that Rubin's publication date is in February 1997 and, thus, Rubin is prior art under 35 U.S.C. § 102(b), because Rubin was published more than one year prior to the filing of the application that matured into the '694 patent. As Petitioner points out, prior art under 35 U.S.C. § 102(b) may not be overcome by establishing prior invention. Pet. Reply 7. Petitioner proffers a declaration of Rubin's author, Dr. Alvin Rubin, to establish that Rubin was publicly available in February 1997. *Id*. (citing Ex. 1027).

As an initial matter, we are not persuaded by Patent Owner that we should not consider any evidence of an earlier publication date that is submitted with the Petitioner's Reply, such as Dr. Rubin's Declaration. Rubin, on its face, indicates that it was reprinted from The Proceedings of the 1997 Symposium on Network and Distributed Systems Security. Ex. 1009, n. 1. The need for relying on evidence to establish the month in 1997 in which the Symposium occurred did not exist until the argument was raised in the Patent Owner Response. Petitioner properly submitted Dr. Rubin's Declaration to respond to Patent Owner's contentions regarding Rubin's publication date. *See* 37 C.F.R. § 42.24 ("A reply may only respond to arguments raised in the corresponding opposition or patent owner response.").

We are persuaded by the evidence supplied by Petitioner that Rubin was publicly accessible in February 1997 and, thus, qualifies as prior art under 35 U.S.C. § 102(b). The determination of whether a given reference qualifies as a prior art "printed publication" involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir.

2004). The key inquiry is whether the reference was made "sufficiently accessible to the public interested in the art" before the critical date. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989); *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981). "A given reference is 'publicly accessible' upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006) (citation omitted).

Dr. Aviel Rubin testifies that Rubin is a true copy of the paper, which was presented by his co-author David Martin at the Symposium on Network and Distributed System Security, held on February 10–11, 1997. Ex. 1027 ¶¶ 1–2, 6. Dr. Rubin also testifies that he personally attended the symposium and that he observed that copies of Rubin were freely available to the several hundred attendees. *Id*. ¶¶ 3, 8–9. Dr. Rubin further testifies that Rubin was published in the Proceedings of the Symposium on Network and Distributed System Security, which are handed out to participants at the symposium. *See id*. ¶¶ 1, 13. Dr. Rubin's testimony is consistent with Rubin itself, which states that it was "[r]eprinted from The Proceedings of the 1997 Symposium on Network and Distributed Systems Security." Ex. 1009, n. 1.

Given the above, we determine that Rubin was a printed publication publicly available as of February 1997 and is prior art under 35 U.S.C. § 102(b). *See Massachusetts Institute of Technology v. AB Fortia*, 774 F.2d 1104, 1109 (Fed. Cir. 1985) (paper orally presented at a scientific meeting open to all persons interested in the subject matter, with written copies

distributed without restriction to all who requested, is a printed publication). Thus, Rubin cannot be overcome by proving prior invention.

ii. Cunningham

Patent Owner argues, and Petitioner does not dispute, that the effective date of Cunningham is its filing date of September 9, 1998. *See* PO Resp. 38; Ex. 1011, 1. Cunningham, thus, is available as prior art under 35 U.S.C. § 102(e) and may be overcome by proving prior invention. To prove prior invention, Patent Owner argues that the claimed method of the '694 patent was actually reduced to practice "at least as early as early 1996 but no later than June 11, 1996." PO Resp. 40.

To establish an actual reduction to practice, a patentee must prove (1) that he constructed an embodiment or performed a process that meets all the claimed limitations of the invention, and (2) determined that the invention worked for its intended purpose. *Cooper v. Goldfarb*, 154 F.3d 1321, 1327 (Fed. Cir. 1998). "The essential inquiry here is whether the advance in the art represented by the invention . . . was embodied in a workable device that demonstrated that it could do what it was claimed to be capable of doing." *Scott v. Finney*, 34 F. 3d 1058, 1063 (Fed. Cir. 1994) (quoting *Farrand Optical Co. v. United States*, 325 F.2d 3278, 333 (2d Cir. 1963)).

"In order to establish an actual reduction to practice, an inventor's testimony must be corroborated by independent evidence. [A] 'rule of reason' analysis is applied to determine whether an inventor's testimony regarding reduction to practice has been sufficiently corroborated." *Cooper*, 325 F.2d at 1130; *see also Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996) (corroboration requirement "arose out of a concern that

inventors testifying in patent infringement cases would be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent"). The sufficiency of corroboration is determined according to a "rule of reason." *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993). This, however, does not dispense with the requirement that some independent evidence provide corroboration. *Coleman*, 754 F.2d at 360. The requirement of "independent" corroboration requires evidence other than the inventor's testimony. *In re NTP, Inc.*, 654 F.3d 1279, 1291–92 (Fed. Cir. 2011).

To support its argument, Patent Owner proffers the testimony of inventor Mr. Partha Dutta (Ex. 2009) and, to corroborate Mr. Dutta's testimony, Patent Owner proffers testimony of non-inventor Dr. Dalibor Vrsalovic (Ex. 2017) and a collection of allegedly contemporaneous documents regarding AT&T's GeoPlex project (Exs. 2010–2016, collectively "AT&T documents"). PO Resp. 40–41.

For the reasons discussed below, we are persuaded by Patent Owner's evidence that the claimed invention was reduced to practice prior to the effective filing date of Cunningham.

a. Mr. Dutta's Testimony

Mr. Dutta testifies that the inventors worked on a project called GeoPlex at AT&T and that GeoPlex included an access control mechanism or gate, which contained a packet filter/firewall. Ex. 2009 ¶¶ 5–13; PO Resp. 41. According to Mr. Dutta, the GeoPlex gate implemented a method, in which access rules are selected based upon the contents of multiple

packets, and a working prototype of the GeoPlex gate was built at least as early as February 1996 but no later than June 11, 1996. Ex. 2009 ¶ 21.

Mr. Dutta testifies that the GeoPlex gate filtered packets to and from a GeoPlex cloud. *Id.* ¶ 23. The packets were allowed to pass through or were blocked at the gate according to access control and parental control rules for each user. *See id.* ¶¶ 24, 31. The rules were selected and loaded into the firewall for each user by identifying the user based upon the source IP address contained in the headers of received packets; authenticating the user based information in the contents of the payloads of the packets; and identifying the service the user was attempting to access based upon the addresses of the service in the headers and payloads of multiple received packets. *Id.* ¶¶ 31, 26–42, 45, 46.

b. AT&T Documents

Mr. Dutta contends that the prototype code of the GeoPlex gate is no longer available. *Id.* ¶ 26. Therefore, Mr. Dutta relies upon Exhibits 2011–2014 to corroborate his testimony that the filter/firewall of the GeoPlex gate selected an access rule based upon information from the headers and payloads of multiple packets. Ex. 2009 ¶ 22. Mr. Dutta refers to Exhibits 2010, 2015, and 2016 to provide an overview and additional examples of the GeoPlex project, but does not rely upon these exhibits to establish prior invention. Ex. 2009 ¶¶ 9, 68; Paper 40, 1.

Exhibit 2011 is a slide presentation referred to as Parthas proxy.ppt and was created by Mr. Dutta and last modified on January 18, 1996. Ex. 2009 ¶¶ 24–25; Ex. 2021, 4. Exhibit 2012 is a slide presentation referred to as geoplex-slides2.ppt and was created by Dr. Vrsalovic and last saved on

June 17, 1995. Ex. 2009 ¶ 47; Ex. 2021, 5. Ex. 2014 is a slide presentation referred to as Geosecurity2.ppt and was created by Karal A. Siil and last saved on June 11, 1996. Ex. 2009 ¶ 57; Ex. 2021, 7.

Exhibit 2013 is a technical memorandum referred to as ControlDaemon copy.doc. Ex. 2009 ¶ 52; Ex. 2021, 5. ControlDaemon copy.doc indicates that the memorandum is from Karl A. Siil and is dated March 8, 1996. Ex. 2013, 1. The meta data for ControlDaemon copy.doc indicates that ControlDaemon copy.doc was last saved on November 11, 1998 by Michah Lerner, a named inventor of the '694 patent. Ex. 2020, 5. Mr. Dutta, however, testifies that ControlDaemon copy.doc "accurately represents my understanding of the Gate in early 1996." Ex. 2009 ¶ 53.

Mr. Dutta testifies that certain figures and statements from Exhibits 2011–2014 demonstrate that the GeoPlex filter/firewall functioned to block unwanted traffic between peers, as well as between a peer and a cloud. Ex. 2009 ¶¶ 27, 28, 32–35, 48–49, 54–53, 58, 59, 62–66. According to Mr. Dutta, the relied upon figures and statement demonstrate that the GeoPlex filter/firewall was configured to authenticate a user, to implement parental controls based upon a user's profile, and to allow parental controls over telenet sites, ftp sites, certain URLs, and other content for each user. *Id*.

Petitioner argues that the AT&T documents do not sufficiently corroborate Mr. Dutta's testimony. According to Petitioner, Mr. Dutta admitted during cross-examination that the AT&T documents only depict the high level architecture of the GeoPlex gate using buzzwords. Pet. Reply 5 (citing Ex. 1022, 76:19–22 ("this [slide 2 of Exhibit 2014] is sort of at a high level symbolic presentation, right. You cannot translate this into really what exactly was going on underneath, right.")). Petitioner argues that,

although Mr. Dutta's testimony purports to explain how the high level documents show that the GeoPlex gate performs the claimed process, Mr. Dutta's discussion is at best uncorroborated inventor testimony. Pet. Reply 5.

Upon review of the cited portions of the AT&T documents, we are persuaded that the documents themselves depict high level architecture of the GeoPlex gate and do not sufficiently disclose the GeoPlex gate performing a rule selection based on the contents of multiple packets. It is Mr. Dutta's added explanation, and not the AT&T documents, that sufficiently describes and explains features of the GeoPlex project that correspond to the claimed rule selection. The requirement of "independent" corroboration requires evidence other than the inventor's testimony. *In re NTP, Inc.*, 654 F.3d 1279, 1291–92 (Fed. Cir. 2011). We are persuaded by Petitioner that the AT&T documents fail to provide sufficient corroboration for Mr. Dutta's testimony.

c. Dr. Vrsalovic's Testimony

Dr. Vrsalovic testifies that he was employed as the Senior Vice President of Advanced Technology at AT&T from 1995 to 1999 (Ex. 2017 ¶ 2) and was responsible for directing the Geoplex project (*id*. ¶ 10). Dr. Vrsalovic testifies that as head of the Geoplex project, he oversaw the work of the inventors of the '694 patent. *Id*. at ¶ 14. Dr. Vrsalovic testifies that:

> [t]o the best of my knowledge, a working prototype of the Gate firewall was built at least as early as between March and May of 1996. I know this because I personally reviewed the software code of the prototype in this timeframe and because I sat in design review meetings in this timeframe with Partha

> Dutta, where Partha would perform tests of the working prototype for my review.

Id. ¶ 19. Dr. Vrsalovic testifies that the prototype Geoplex gate verified who the user was based upon the IP address of the user found in the headers of packets, as well as based upon authentication information found in the payloads of packets (*id*. ¶ 25) and that the prototype gate selects and loads firewall rules based upon the users, as well as information in the packets' headers and payloads about which GeoPlex service the users were attempting to access (*id*. ¶ 26).

Petitioner argues that Dr. Vrsalovic's testimony fails to provide persuasive independent corroboration for Mr. Dutta's testimony. Pet. Reply 6. Petitioner contends "even assuming arguendo that the Vrsalovic Declaration corroborates the existence of the GeoPlex Project in 1996, it does not corroborate the conception or reduction to practice of the subject matter describes in claim 1." *Id.* According to Petitioner, Dr. Vrsalovic did not even review the '694 patent prior to signing his declaration and admitted that he did not know whether the '694 patent covered the GeoPlex project. *Id.* at 6 (citing Ex. 1024, 9:10–17, 14:7–8). Dr. Vrsalovic was unable to differentiate which features of the GeoPlex project related to the '694 patent and incorrectly attributed some features, such as dynamic loading of rules at the firewall, to the '694 patent, when these features are disclosed and claimed in other related patents. *Id*. at 6–7 (citing Ex. 1024, 69:10–22, 72:6–74:21; Ex. 1019). Dr. Vrsalovic, as well as Mr. Dutta, is a named inventor of other related patents, which disclose and claim dynamic loading of rules at the firewall. *See* Ex. 1019; Ex. 1024, 69:10–74:2; *see also* Exs. 1020, 1021 (additional U.S. patents disclosing related subject matter and naming Dr. Vrsalovic as an inventor).

We are not persuaded by Petitioner that Dr. Vrsalovic's testimony fails to sufficiently corroborate Mr. Dutta's testimony. Simply because Dr. Vrsalovic's testimony refers to additional features of the GeoPlex gate that are disclosed and claimed in other patents does not mean we should disregard his testimony as to the features corresponding to claim 1 of the '694 patent. We credit Dr. Vrsalovic testimony that he personally reviewed the software code of the working prototype and that he sat in design review meeting where the working prototype was tested, during the relevant time frame. Ex. 2017 ¶ 19. We also credit Dr. Vrsalovic testimony that the GeoPlex gate selected and loaded a rule based upon information found in the headers and payloads of multiple packets. Ex. 2017 ¶¶ 19–20, 25–26, 30.

d. Petitioner's Argument Regarding Mr. Kumar

Petitioner argues that the claimed subject matter could not have been reduced to practice in 1996 because named inventor, Mr. Kumar, did not work at AT&T until approximately July 1997. Pet. Reply 3–4. Patent Owner contends that the '694 patent erroneously names Mr. Kumar as an inventor. Paper 40, 3–6. We are persuaded by Patent Owner that the discrepancy between Mr. Kumar's alleged date of employment and the alleged date of reduction to practice may be the result of an error in ascribing inventorship, and not persuasive evidence that the claimed subject matter could not have been reduced to practice in 1996.

e. Analysis

Petitioner bears the burden of persuasion, by a preponderance of the evidence, that the challenged claim is unpatentable. 35 U.S.C. § 316(e).

This burden includes, *inter alia*, showing that any reference on which it relies is prior art under 35 U.S.C. § 102. *See Mahurkar*, 79 F.3d at 1576 (holding that accused infringer "bore the burden of persuasion . . . on all issues relating to the status of [the asserted reference] as prior art"). Cunningham presumptively constitutes prior art under 35 U.S.C. § 102(e) because its September 9, 1998 filing date is prior to the '694 patent's earliest effective filing date, giving rise to Patent Owner's burden of coming forward with evidence supporting a date of invention before September 9, 1998. *Mahurkar*, 79 F.3d at 1576–77; *see Technology Lic. Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (finding that when party challenging validity came forward with art that is prior to the challenged patent's application date, the patentee has burden of going forward with evidence that "the asserted claim is entitled to the benefit of a filing date prior to the alleged prior art").

Upon consideration of Patent Owner's proffered evidence, as discussed above, we are persuaded that Patent Owner has met its burden of coming forward with sufficient independently corroborated evidence showing that the inventors of the '694 patent reduced to practice the claimed invention "at least as early as early 1996 but no later than June 11, 1996" (*id.* at 40). Thus, upon consideration of all of the evidence, we are not persuaded that Cunningham is prior art under 35 U.S.C. § 102(e).

C. Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior

art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987) (citations omitted).

i. Anticipation by Cunningham

We determine above that Cunningham is not prior art under 35 U.S.C. § 102(e), and, thus, cannot anticipate claim 1.

ii. Anticipation by Rubin

Petitioner argues that Rubin anticipates claim 1, and, in particular, that Rubin's description of implementing a blocking strategy based upon the payloads of Internet Protocol ("IP") packets reassembled into a Transmission Control Protocol ("TCP") stream meets step c's requirement that the access rule is selecting based on the contents of multiple packets. Pet. 33–40; Pet. Reply 8–10.

Rubin is a paper titled "Blocking Java Applets at the Firewall." Ex. 1009, 2.[7] Rubin describes a firewall scheme that routes relevant data packets to a secure proxy host, via a TCP session, and the proxy host reassembles the packets into TCP streams. *Id.* Petitioner argues that "a POSITA would have understood that certain fields in the header of the packet were used to put fragmented packets back together." Pet. Reply 9 (citing Ex. 1023, 31:9–32:18, testimony of Patent Owner's expert Dr. Mir).

Rubin's proxy host applies a block strategy based on the content of the TCP streams. Ex. 1009, 6–9. Rubin describes three types of blocking strategies: rewriting <applet> tags in HTML documents (*id*. at 7), blocking

[7] We refer to the pagination inserted by Petitioner to Exhibits 1009 and 1010 not to the original pagination of Rubin and Norman.

files having the 4-byte hex signature CA, FE, BA, BE found in Java Class files (*id*. at 8), and blocking browser requests for files having the .class or .zip suffixes (*id.* at 8–9). Each blocking strategy is applied based on information found in the payloads of the IP packets in the reassembled TCP stream. For example, Rubin states:

> blocking CA FE BA BE — the simplest scheme — requires searching IP packets for that four byte signature. However, those four bytes need not arrive in the same IP packet, and if split up, the individual packets may arrive out of order.

Id. at 10.

Upon consideration of Petitioner's evidence and analysis, and taking into account Patent Owner's arguments, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is anticipated by Rubin.

b. Patent Owner's Arguments

Patent Owner argues that Petitioner fails to provide any evidence that Rubin describes selecting an access rule based on both the header and payload of multiple packets. PO Resp. 22–26.

Patent Owner's argument is again unpersuasive because it is based upon a construction of claim 1 that we did not adopt. We determined above that the broadest reasonable construction, in light of the Specification, of claim 1 requires that the access rule be selected based upon at least the payload of the received packet and upon the contents of the header and/or payload of at least one other packet. Rubin describes three types of blocking strategies: rewriting <applet> tags in HTML documents (Ex. 1009, 7), blocking files having the 4-byte hex signature CA, FE, BA, BE found in Java Class files (*id*. at 8), and blocking browser requests for files having the

.class or .zip suffixes (*id.* at 8–9). Each blocking strategy is applied based on information found in the payloads of the IP packets in the TCP stream, which is reassembled based upon headers of the IP packets. Rubin, thus, describes selecting an access rule based upon the payloads, as well as the headers, of multiple packets.

Patent Owner further argues that Rubin does not teach selecting a rule based on any contents of the packet at all, because Rubin fails to teach selecting a blocking strategy from the plurality of blocking strategies. PO Resp. 26.

Patent Owner's argument is unpersuasive because it is not commensurate with the scope of claim 1. As we determine above, the broadest reasonable construction, in light of the Specification, does not require selecting the rule by choosing the access rule from a set of rules.

D. Obviousness over Norman and Rubin

> Section 103 forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a having ordinary skill in the art to which said subject matter pertains."

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *see also KSR*, 550 U.S. at 407 ("While the sequence of these questions might be

reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.").

i. Petitioner's Argument

Petitioner argues claim 1 is unpatentable over the combination of Norman and Rubin, and, in particular, that the combination's teaching of blocking data packets based upon the payloads and headers of multiple packets meets the requirement of claim 1 step c that the access rule is selected based on the contents of multiple packets. Pet. 40–55; Pet. Reply 13–14.

Norman is a paper titled "An Introduction to The Norman Firewall." Ex. 1010, 5. The Norman Firewall uses a proxy service to pass data packets from one network to another. *Id*. at 13. The Norman Firewall includes an anti-virus scanning engine that scans files or emails for known viruses or hotwords, so that data transactions that include known viruses or hotwords can be blocked. *Id*. at 15.

Petitioner argues that, although not expressly disclosed by Norman, one of ordinary skill in the art would know that a single file is often received in multiple packets due to, for example, packet fragmentation, and that, therefore, there is a need to scan for the virus or hotwords that may span more than one packet payload. Pet. 46 (citing Ex. 1001 ¶ 66). As discussed above, Rubin discloses a similar system to Norman's system that blocks IP packets based on a signature found in a file and discloses that, because of packet fragmentation, it is desirable in reassembling a stream of related data packets in a proxy application to search the payloads of multiple IP packets for the signature in a file. *See* Ex. 1009, 6–9. Petitioner argues that a person

of ordinary skill in the art ("POSITA") would have been motivated to combine Norman with Rubin in order to secure a network by scanning for files that contain viruses or hotwords that may span the payloads of multiple data packets. *See* Pet. 45–47; *see also* Pet. 15 (defining the ordinary skill in the art at the relevant time). Petitioner, further, argues a POSITA would understand that packets of a session are identified or reassembled based upon the headers of the packets. Pet. Reply 13 (citing Ex. 1026 ¶ 29 (testimony of Petitioner's declarant Dr. Kesidis)).

Upon consideration of Petitioner's evidence and analysis, and taking into account Patent Owner's arguments, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is obvious over Norman and Rubin.

ii. Patent Owner's Arguments

Patent Owner argues that Petitioner fails to provide any evidence that either Norman or Rubin describes selecting an access rule based on both the header and payload of multiple packets. PO Resp. 28–32.

Patent Owner's argument is again unpersuasive because it is based upon a construction of claim 1 that does not reflect the broadest reasonable interpretation consistent with the specification. We determined above that the broadest reasonable construction, in light of the Specification, of claim 1 requires that the access rule be selected based upon at least the payload of the received packet and upon the contents of the header and/or payload of at least one other packet.

The combination of Norman and Rubin teaches scanning for files that contain viruses or hotwords that may span the payloads of multiple data

packets. A POSITA would understand that packets of a session are identified or reassembled based upon the headers of the packets. *See* Ex. 1026 ¶ 29; *see also* Ex. 1023, 31:9–32:18 (testimony of Patent Owner's expert Dr. Mir). The combination of Norman and Rubin, thus, discloses selecting an access rule based upon the payloads, as well as the headers, of multiple packets.

Patent Owner also argues we should give no weight to the testimony of Petitioner's declarant Dr. Kesidis that a POSITA would combine Norman and Rubin. PO Resp. 33–36. According to Patent Owner, Dr. Kesidis is unqualified because he was not an expert or a POSITA at the time of the priority filing. *Id*. Patent Owner's argument is unpersuasive because, as Petitioner argues (Pet. Reply 15), Dr. Kesidis is testifying as an expert whose knowledge and experience qualify him to opine on what a hypothetical POSITA would have understood at the time of the invention. *See* Ex. 1001 ¶¶ 1–4; Ex. 1002. Dr. Kesidis need not be the hypothetical POSITA, himself, at the time of the priority filing.

Patent Owner further argues that a POSITA "would not in fact combine Norman and Rubin because Norman discloses a nontransparent proxy (*see* Ex. 1010, section 4.5) while Rubin assumes that the proxy is transparent (*see* Ex. 1009, section 3.6). PO Resp. 36 (citing Ex. 2022 ¶ 141). Patent Owner's proffers the testimony of Dr. Mir to support its conclusory argument. Dr. Mir's testimony, however, parrots Patent Owner's argument and fails to provide sufficient explanation or elaboration to support this statement. Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a).

E. Motions to Exclude Evidence

Patent Owner moves to exclude Exhibits 1015–1017 in their entirety. PO Mot. We do not rely on these exhibits in reaching our Decision and, thus, dismiss Patent Owner's motion to exclude these exhibits as moot.

Petitioner moves to exclude Exhibits 2010 and 2012–2016. Pet. Mot. We do not rely on Exhibits 2010, 2015, and 2016 in reaching our Decision and, thus, dismiss Petitioner's motion to exclude these exhibits as moot. We also dismiss Petitioner's motion to exclude Exhibits 2012–2014 as moot, as we determine above that these exhibits are insufficient to corroboration Mr. Dutta's testimony of prior invention regardless of their admissibility.

III. CONCLUSION

Petitioner has demonstrated by a preponderance of the evidence that claim 1 is anticipated under 35 U.S.C. § 102(b) by Rubin and is unpatentable under 35 U.S.C. § 103 over Norman and Rubin. Petitioner fails to demonstrated by a preponderance of the evidence that claim 1 is anticipated under 35 U.S.C. § 102(e) by Cunningham.

Patent Owner's Motion to Exclude Evidence is dismissed, and Petitioner's Motion to Exclude Evidence is dismissed.

This is a Final Written Decision of the Board under 35 U.S.C. § 318(a). Parties to the proceeding seeking judicial review of this decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claim 1 of U.S. Patent No. 6,826,694 B1 is *unpatentable*;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is *dismissed*; and

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence is *dismissed.*

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