

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PALO ALTO NETWORKS, INC. and
BLUE COAT SYSTEMS LLC,
Petitioner,

v.

FINJAN, INC.,
Patent Owner.

Case IPR2016-00159¹
Patent 8,677,494 B2

Before ZHENYU YANG, CHARLES J. BOUDREAU, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

BOUDREAU, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

¹ Case IPR2016-01174 has been joined with the instant proceeding.

I. INTRODUCTION

Palo Alto Networks, Inc. and Blue Coat Systems, Inc., now known as Blue Coat Systems LLC,² (collectively, “Petitioner”) filed petitions requesting *inter partes* review of certain claims of U.S. Patent No. 8,677,494 B2 (Ex. 1001, “the ’494 patent”). Paper 2 (“Petition” or “Pet.”; requesting review of claims 1–18 of the ’494 patent); *see also* IPR2016-01174, Paper 2 (requesting review of claims 1–6 and 10–15 of the ’494 patent).

Based on the information provided in the Petition, and in consideration of the Preliminary Response (Paper 6; “Prelim. Resp.”) of Patent Owner, Finjan, Inc., we instituted a trial pursuant to 35 U.S.C. § 314(a) with respect to claims 1–6 and 10–15 and subsequently joined Case IPR2016-01174 with the instant case. Paper 8 (“Decision on Institution” or “Dec. on Inst.”); *see also* Paper 20 (copy of decision instituting *inter partes* review in Case IPR2016-01174 and granting motion for joinder; also filed as IPR2016-01174, Paper 8).

After institution, Patent Owner filed a Request for Rehearing Pursuant to 37 C.F.R. §§ 42.71(c) and 42.71(d) (Paper 11), challenging our decision to institute trial, and we issued a Decision Denying Patent Owner’s Request for Rehearing (Paper 13, “Rehearing Decision” or “Reh’g Dec.”). Thereafter, Patent Owner filed a Response (Paper 17 (“PO Resp.”)), and Petitioner filed a Reply (Paper 26, “Pet. Reply”). Petitioner proffered Declarations of Aviel D. Rubin, Ph.D. (Ex. 1002), Eugene Spafford, Ph.D.

² *See* Paper 30, 1. Blue Coat Systems LLC identifies Symantec Corp. as a real party in interest in this proceeding. Paper 39.

(Ex. 1061), and John Hawes (Ex. 1088) with its Petition; and Supplemental Declarations of Dr. Rubin (Ex. 1090) and Mr. Hawes (Ex. 1089) with its Reply. Patent Owner proffered Declarations of Nenad Medvidovic, Ph.D. (Ex. 2011) and S.H. Michael Kim (Ex. 2012) with its Response. Also, deposition transcripts were filed for Michael T. Goodrich, Ph.D. (Ex. 1098), Mr. Kim (Ex. 1099), Dr. Medvidovic (Ex. 1100), Mr. Hawes (Ex. 2014), Dr. Rubin (Ex. 2015), and Jack W. Davidson, Ph.D., a witness proffered by the petitioner in related Case IPR2015-01892 (Ex. 2016).

Petitioner moves to exclude certain paragraphs of Dr. Medvidovic's Declaration and certain of Patent Owner's Exhibits. Paper 31. Patent Owner filed an Opposition (Paper 43) to Petitioner's Motion to Exclude, and Petitioner filed a Reply (Paper 47).

Patent Owner also moves to exclude certain of Petitioner's Exhibits and portions of Petitioner's Reply. Paper 35. Petitioner filed a Response (Paper 42) to Patent Owner's Motion to Exclude, and Patent Owner filed a Reply (Paper 48).

Patent Owner additionally filed an identification of arguments alleged to exceed the proper scope of Petitioner's Reply (Paper 32), to which Petitioner filed a response (Paper 40). Patent Owner further filed a Motion for Observations on the cross-examination of Mr. Hawes (Paper 34), and Petitioner filed a response thereto (Paper 41); and Patent Owner filed a Motion for Entry of the Default Protective Order and to Seal Certain Exhibits under 37 C.F.R. §§ 42.14 and 42.54 (Paper 45).

An oral hearing was held on February 16, 2017; a transcript of the hearing is included in the record (Paper 49, "Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 2, and 6 of the '494 patent are unpatentable, but that Petitioner has not shown by a preponderance of the evidence that claims 3–5 and 10–15 of the '494 patent are unpatentable.

We also dismiss as moot Petitioner's Motion to Exclude; dismiss-in-part and deny-in-part Patent Owner's Motion to Exclude; and grant Patent Owner's Motion for Entry of the Default Protective Order and to Seal.

II. BACKGROUND

A. *Related Proceedings*

The parties identify six district court actions involving the '494 patent: *Finjan, Inc. v. Sophos, Inc.*, No. 3:14-cv-01197 (N.D. Cal. 2014) ("the *Sophos* litigation"); *Finjan, Inc. v. Websense, Inc.*, No. 14-cv-01353 (N.D. Cal. 2014) ("the *Websense* litigation"); *Finjan, Inc. v. Symantec Corp.*, No. 3:14-cv-02998 (N.D. Cal. 2014); *Finjan, Inc. v. Palo Alto Networks, Inc.*, No. 3:14-cv-04908 (N.D. Cal. 2014); *Finjan, Inc. v. Blue Coat Systems, Inc.*, No. 5:15-cv-03295 (N.D. Cal. 2015) ("the *Blue Coat* litigation"); and *Finjan, Inc. v. Cisco Systems Inc.*, No. 3:17-cv-00072 (N.D. Cal. 2017). Pet. 2; Paper 5, 1; PO Resp. 57; Paper 37, 1.

The '494 patent was also the subject of an *inter partes* review in *Symantec Corp. v. Finjan, Inc.*, Case IPR2015-01892 ("the Symantec 1892 IPR"), to which *Blue Coat Systems, Inc. v. Finjan, Inc.*, Case IPR2016-00890, was joined; and was the subject of denied petitions for *inter partes* review in *Sophos Inc. v. Finjan, Inc.*, Case IPR2015-01022, *Symantec*

Corp. v. Finjan, Inc., Case IPR2015-01897, and *Blue Coat Systems, Inc. v. Finjan, Inc.*, Case IPR2016-01443. We previously issued a Final Written Decision in the Symantec 1892 IPR, in which we determined, as in the instant proceeding, that claims 1, 2, and 6 of the '494 patent are unpatentable. See IPR2015-01892, slip op. at 66 (PTAB Mar. 15, 2017) (Paper 58) (*Symantec* Final Written Dec.).

B. The '494 Patent

The '494 patent, entitled “Malicious Mobile Code Runtime Monitoring System and Methods,” issued March 18, 2014, from U.S. Patent Application No. 13/290,708 (“the '708 application”), filed November 7, 2011. Ex. 1001, [21], [22], [45], [54].

The '494 patent describes protection systems and methods “capable of protecting a personal computer (‘PC’) or other persistently or even intermittently network accessible devices or processes from harmful, undesirable, suspicious or other ‘malicious’ operations that might otherwise be effectuated by remotely operable code.” Ex. 1001, 2:51–56. “[R]emotely operable code that is protectable against can include,” for example, “downloadable application programs, Trojan horses and program code groupings, as well as software ‘components’, such as Java™ applets, ActiveX™ controls, JavaScript™/Visual Basic scripts, add-ins, etc., among others.” *Id.* at 2:59–64.

C. Priority Date of the '494 Patent

On its face, the '494 patent purports to claim priority from nine earlier applications: (1) U.S. Provisional Application No. 60/030,639 (“the '639 provisional”), filed November 8, 1996; (2) U.S. Patent Application No. 08/790,097, filed January 29, 1997, and issued as U.S. Patent No. 6,167,520

(“the ’520 patent”); (3) U.S. Patent Application No. 08/964,388 (“the ’388 application”), filed November 6, 1997, and issued as U.S. Patent No. 6,092,194 (Ex. 1013, “the ’194 patent”); (4) U.S. Patent Application No. 09/539,667 (“the ’667 application”), filed March 30, 2000, and issued as U.S. Patent No. 6,804,780 (Ex. 2004, “the ’780 patent”); (5) U.S. Patent Application No. 09/551,302, filed April 18, 2000; (6) U.S. Provisional Patent Application No. 60/205,591, filed May 17, 2000; (7) U.S. Patent Application No. 09/861,229 (“the ’229 application”), filed May 17, 2001, and issued as U.S. Patent No. 7,058,822 B2 (Ex. 1016, “the ’822 patent”); (8) U.S. Patent Application No. 11/370,114 (“the ’114 application”), filed March 7, 2006; and (9) U.S. Patent Application No. 12/471,942 (“the ’942 application”), filed May 26, 2009. Ex. 1001, [63].

In the Petition, Petitioner asserted that claims 1, 3–6, 9, 10, 12–15, and 18 of the ’494 patent are entitled only to the March 30, 2000, filing date of the ’667 application; that claims 2 and 11 are entitled only to the May 26, 2009, filing date of the ’942 application; and that claims 7, 8, 16, and 17 are entitled only to the March 7, 2006,³ filing date of the ’114 application. Pet. 13–19. Petitioner’s argument regarding the first of these groups of claims was, essentially, that: (1) there was a break in the priority chain due to a failure of the ’494 patent’s great-grandparent ’822 patent to claim priority from or include any reference to the ’520 and ’194 patents or the ’097 and ’388 applications from which those patents respectively issued; (2) as a result of that break, the ’494 patent’s “grandparent ’926 [patent] cannot claim priority earlier than the date of the earliest date of an

³ This date is repeatedly misstated in the Petition as May 7, 2006. Pet. 6, 13, 14.

application on the face of its parent, the '822 patent: March 30, 2000"; and (3) "[i]n turn, the '494 [patent]—which depends on the '926 [patent]'s priority—has the same priority date limitation." *Id.* at 15–16. Petitioner acknowledged that Patent Owner later filed a "Petition to Accept Unintentionally Delayed Priority Claim Under 37 C.F.R. 1.78" ("Priority Petition") during reexamination of the '822 patent, requesting amendment to include references to the '520 and '194 patents, and that the Office granted the Priority Petition and issued a Corrected Filing Receipt including the priority claim to the previously omitted applications in July 2014. Pet. 16; Ex. 1017, 1–3 (Reexamination Control No. 90/013,017, Decision mailed July 25, 2014, at 1–3); Ex. 3005, 1 (Reexamination Control No. 90/013,017, Corrected Filing Receipt dated July 24, 2014, at 1). Nonetheless, Petitioner contended, because the Examiner in the reexamination later concluded that certain claims of the '822 patent are entitled to a priority date no earlier than May 17, 2000, because no certificate of correction had been published, and because the reexamination of the '822 patent had not completed and was on appeal after all petitioned claims in the '822 patent were rejected as invalid, the Priority Petition is ineffectual with respect to the '494 patent's entitlement to the benefit of the November 6, 1997 filing date of the '388 application. Pet. 16.

In the Decision on Institution, we agreed with Petitioner that the '494 patent was not entitled to claim the benefit of the November 8, 1996, filing date of the '639 provisional or the January 29, 1997, filing date of the '092 application, but concluded, notwithstanding Petitioner's arguments, that each of the claims is entitled to the priority date of the November 6,

1997, filing date of the '388 application. Dec. on Inst. 11–13. As we explained,

Petitioner cites no authority for the proposition that a granted petition to accept an unintentionally delayed priority claim is effective only upon issuance of a certificate of correction or reexamination certificate, and not upon grant of the petition. In any event, as Patent Owner points out in its Preliminary Response, the Board reversed the rejection of all appealed claims in the reexamination of the '822 patent (see Ex. 2007) and a reexamination certificate was issued by the Office on February 16, 2016 (Ex. 2009). Prelim. Resp. 18.

Notably, however, . . . [a]s Petitioner points out, the earliest priority document cited on the face of the '926 patent through which the '494 claims priority is the '194 patent (see Pet. 18), and there is no indication in the record that the '926 patent, or the '114 application, from which it issued, was ever the subject of a petition to accept a delayed priority claim to either the '639 provisional or the '097 application.

Id. at 12–13.

Although Patent Owner argues in the Patent Owner Response that it “maintains that the '494 Patent is entitled to the November 8, 1996 priority date established by Provisional Patent Application No. 60/030,639” (PO Resp. 15 n.7), it does not provide any additional explanation or cite any evidence in support of that conclusory argument, and does not otherwise challenge our determination that the '494 patent is not entitled to claim the benefit of any filing date earlier than November 6, 1997.

For its part, Petitioner did not request reconsideration of our determination regarding the priority date or challenge that determination in its Reply, but raised again at the oral hearing its argument that the proper priority date for the challenged claims is March 30, 2000. Tr. 6:13–13:1. Petitioner contends, in essence, that the correction of the priority date of the

'822 patent was not effective until the issuance of a reexamination certificate on February 16, 2016, and that, because that was after Patent Owner sued Petitioner Palo Alto Networks, Inc. in November 2014 and the Petition was filed in November 2015, the correction does not benefit the '494 patent. *Id.* at 6:21–7:19. According to Petitioner, “the statute governing certificates of correction as well as the regulations on this issue do not allow this type of correction to have retroactive effect, and because the IPR in this case was filed prior to the issuance of the reexamination certificate, that certificate has no effect here.” *Id.* at 8:5–9. Petitioner contends, more particularly, that “[o]n the face of section 255 it states that a certificate of correction is only effective for causes thereafter arising, and that language has been interpreted by the Federal Circuit in the *H.-W. Tech.* case.” *Id.* at 8:16–19 (citing 35 U.S.C. § 255 and *H-W Technology, L.C. v. Overstock.com, Inc.*, 758 F.3d 1329 (Fed. Cir. 2014)).

Having considered the full trial record, we remain persuaded that each of the challenged claims is entitled to an effective filing date of November 6, 1997. As we explained in our Decision on Institution, we understand Patent Owner’s delayed priority claim to have been effective upon the Office’s grant of the Priority Petition and Issuance of Corrected Filing Receipt on July 25, 2014 (Ex. 1017, 1–3; Ex. 3005, 1), rather than upon the issuance of the Reexamination Certificate confirming the patentability of the claims of the '822 patent (Ex. 2009). *See* Dec. on Inst. 11–12. Petitioner does not point to, and we are not aware of, any authority suggesting that a granted petition to correct priority date requires, in addition, the issuance of either a certificate of correction or a reexamination certificate before becoming effective. Despite Petitioner’s representation at the oral hearing that *H-W*

Technology involved correction of a priority date (Tr. 9:2–7), we note that that case instead involved a certificate of correction to add *a missing limitation* to a patent claim and, thus, is not on point here. See *H-W Tech.*, 758 F.3d at 1331, 1334. Accordingly, we conclude that each of the challenged claims is entitled to the benefit of the November 6, 1997, filing date of the '388 application.

D. Illustrative Challenged Claims

Of the challenged claims, claims 1 and 10 are independent. Those claims are illustrative and are reproduced below:

1. A computer-based method, comprising the steps of:
 - receiving an incoming Downloadable;
 - deriving security profile data for the Downloadable, including a list of suspicious computer operations that may be attempted by the Downloadable; and
 - storing the Downloadable security profile data in a database.
10. A system for managing Downloadables, comprising:
 - a receiver for receiving an incoming Downloadable;
 - a Downloadable scanner coupled with said receiver, for deriving security profile data for the Downloadable, including a list of suspicious computer operations that may be attempted by the Downloadable; and
 - a database manager coupled with said Downloadable scanner, for storing the Downloadable security profile data in a database.

Ex. 1001, 21:19–25, 22:7–16. Each of challenged claims 2–6 depends directly from claim 1; and each of challenged claims 11–15 depends directly from claim 10. *Id.* at 21:26–37, 22:17–30.

E. Instituted Grounds of Unpatentability

The Petition asserted six grounds of unpatentability. Pet. 5. We instituted trial in this case on the following two grounds:

Claims	Basis	Reference(s)
1, 2, 6, 10, 11, and 15	§ 103	Swimmer ⁴
3–5 and 12–14	§ 103	Swimmer and Martin ⁵

Dec. on Inst. 34.

III. ANALYSIS

A. Claim Construction

The '494 patent expired no later than January 29, 2017. *See* Paper 38, 1 (Patent Owner representing that January 29, 2017, was the expiration date of the '494 patent and that Petitioner does not dispute that date). In an *inter partes* review, we construe claims of an expired patent according to the standard applied by the district courts. *See In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). Specifically, because the expired claims of a patent are not subject to amendment, we apply the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc). Under that

⁴ Morton Swimmer et al., *Dynamic Detection and Classification of Computer Viruses Using General Behaviour Patterns*, Virus Bull. Conf. 75 (Sept. 1995) (Ex. 1006, “Swimmer”).

⁵ David M. Martin, Jr. et al., *Blocking Java Applets at the Firewall*, Proc. 1997 Symp. on Network & Distributed Sys. Sec. (©1997) (Ex. 1047, “Martin”). We note that Martin states on its face that it is from the proceedings of a symposium held February 10–11, 1997 (Ex. 1047, 1), but that the record copy of Martin bears a date stamp of June 5, 1998 (*id.* at 3), does not indicate a publication date, and merely has a 1997 copyright date (*id.* at 1).

standard, the words of a claim are generally given their ordinary and customary meaning, which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13. Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner proposed constructions in the Petition for three claim terms: (1) “Downloadable security profile data,” as “information related to whether executing a downloadable is a security risk”; (2) “database,” as “a collection of interrelated data organized according to a database schema to serve one or more applications”; and (3) “Downloadable,” as “an executable application program, which is downloaded from a source computer and run on the destination computer.” Pet. 19–23. In the Decision on Institution, we noted that Patent Owner in its Preliminary Response challenged only Petitioner’s proposal with respect to the first of these terms. Dec. on Inst. 6 (citing Prelim. Resp. 9–12). Upon consideration of the parties’ respective arguments, we adopted the parties’ agreed constructions of “database” and “Downloadable,” and we also agreed with Patent Owner that, in view of the parties’ agreed interpretation of the term “Downloadable,” there was no need to separately construe the term “Downloadable security profile data.” *Id.* at 7–8. We also determined that no other claim terms required express construction for purposes of the Decision on Institution. *Id.* at 8.

In the Patent Owner Response, Patent Owner agrees with our determinations on claim construction in the Decision on Institution. PO Resp. 8–11. Petitioner also does not challenge those determinations in its

Reply. Although our claim construction analysis in the Decision on Institution was rendered under the “broadest reasonable interpretation” standard applicable to unexpired patents (*see* 37 C.F.R. § 42.100(b)), we discern no reason to deviate from our previous determinations here.⁶

B. Obviousness Grounds

We have reviewed the Petition, Patent Owner Response, and Petitioner’s Reply, as well as the relevant evidence discussed therein. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 2, and 6 of the ’494 patent are unpatentable under 35 U.S.C. § 103(a) over Swimmer.

1. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *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; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations such as commercial success, long felt but

⁶ We note that our adopted construction of “database” mirrors the district court’s express construction of that term in the *Sophos* litigation and that we also adopted the same construction in the Symantec 1892 IPR. *See* Ex. 2001, 3 (*Finjan, Inc. v. Sophos, Inc.*, No. 14-cv-01197 (N.D. Cal. 2014), Claim Construction Order at 3); *Symantec*, slip op. at 16.

unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To prevail in an *inter partes* review, a petitioner must prove the unpatentability of the challenged claims by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “[T]he petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). The burden of persuasion never shifts to Patent Owner. See *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

We analyze the instituted ground of unpatentability in accordance with the above-stated principles.

2. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re*

GPAC, Inc., 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.* Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovention Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill generally favors a determination of nonobviousness, . . . while a higher level of skill favors the reverse.”).

Petitioner’s declarant, Dr. Rubin, opines that a person of ordinary skill at the time of the ’494 patent would have had a bachelor’s degree or the equivalent in computer science (or related academic fields) and three to four years of additional experience in the field of computer security, or equivalent work experience. Ex. 1002 ¶ 21. According to Dr. Rubin, “[t]his definition . . . would not change whether the time of the alleged invention is deemed to be 1996, 2000, or 2006.” *Id.*

Patent Owner’s declarant, Dr. Medvidovic, opines that the person of ordinary skill in the art in the field of the ’494 patent would be someone with a bachelor’s degree in computer science or a related field and “either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field.” Ex. 2011 ¶ 37. Nonetheless, Dr. Medvidovic acknowledges Dr. Rubin’s opinion as to the relevant level of skill and further opines that the opinions stated in his declaration would be the same if rendered from the perspective of the person of ordinary skill in the art set forth by Dr. Rubin. *Id.* ¶¶ 39–40 (citing Ex. 1002 ¶ 21).

We determine that the differences in the declarants' assertions are negligible and that both assessments are consistent with the '494 patent and the referenced prior art. For the purposes of the analysis below, we adopt Dr. Medvidovic's assessment but note that the factual findings and legal conclusions set forth below would not have differed had we adopted Dr. Rubin's assessment.

3. Scope and Content of the Prior Art

a. Overview of Swimmer

Swimmer is generally directed to a system, referred to as the "Virus Intrusion Detection Expert System" ("VIDES"), that is described as "a prototype for an automatic analysis system for computer viruses." Ex. 1006, 1, 2. In Swimmer's prototype, an emulator is used to monitor the system activity of a virtual computer, but Swimmer also states that "VIDES could conceivably be used outside the virus lab to detect viruses in a real environment" and that "[o]ne possibility is to use it as a type of firewall for programs entering a protected network." *Id.* at 1, 13.

In general, Swimmer discloses that sets of rules are used to detect viruses and extract details of their behavior. Ex. 1006, 1–7. Swimmer provides a model of virus attack strategy and discloses that virus-specific rules can be generated and translated into a rule-based language ("RULES-based Sequence Evaluation Language," or "RUSSEL"). *Id.* at 4–7. For example, based on assumptions about the behavior of disk operating system (DOS) viruses, Swimmer identifies two possible infection strategies: (1) writing to the beginning of a file (BOF) without a previous read to the same location, and (2) reading to BOF followed by a writing to BOF, with or without intervening reads and writes. *Id.* at 5–6.

Swimmer discloses that VIDES collects system activity data and creates a set of audit records having a specified format for analysis by a tool referred to as “Advanced Security audit trail Analysis on uniX” (“ASAX”). Ex. 1006, 1, 9. ASAX is described as an expert system that analyzes the data produced by the VIDES emulator, using RUSSEL to identify the virus attack. *Id.* at 1, 4, 10–13. Swimmer also discloses that ASAX provides a filter that reduces the number of audit records to only relevant, higher-level records. *Id.* at 6–7. In particular, a “first ASAX system reads the raw audit trail, converts it into generic data, and pipes its output as a [Normalized Audit Data Format] NADF file for further processing,” and “[u]sing ASAX as a filter allows [for] reduc[tion in] the complexity of maintaining the system while not sacrificing any power.” *Id.* at 7, 12. The audit records identify, among other things, DOS functions requested by the analyzed program, the register/memory values used in calls to the DOS functions, and register/memory values returned by the function calls. *Id.* at 1, 7, 9.

Swimmer explains that each VIDES audit record has the format *<code segment, RecType, StartTime, EndTime, function number, arg (...), ret (...)>*, where *code segment* is the address in memory of the executable image of the program; *function number* is the number of the DOS function requested by the program; *arg (...)* is a list of register/memory values used in the call to a DOS function; *ret (...)* is a list of register/memory values as returned by the function call; *RecType* is the type of the record; and *StartTime* and *EndTime* are the time stamp of action start and end, respectively. Ex. 1006, 9.

An example of an excerpt from an audit trail is provided in Figure 3 of Swimmer, reproduced below.

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<CS=3911 Type=0 Fn=30 arg() ret( AX=5)>
<CS=3911 Type=0 Fn=29 arg() ret( BX=128 ES=3911)>
<CS=3911 Type=0 Fn=64 arg( AL=61 CL=3 str1=*.COM) ret( AL=0 CF=0)>
<CS=3911 Type=0 Fn=51 arg( AL=0 str1=COMMAND.COM) ret( AL=0 CX=32 CF=0)>
<CS=3911 Type=0 Fn=51 arg( AL=1 str1=COMMAND.COM) ret( AL=0 CX=32 CF=0)>
<CS=3911 Type=0 Fn=45 arg( AL=2 CL=32 str1=COMMAND.COM) ret( AL=0 AX=5 CF=0)>
<CS=3911 Type=0 Fn=73 arg( BX=5) ret( CX=10241 DX=6206 CF=0)>
<CS=3911 Type=0 Fn=27 arg() ret( CX=5121 DX=8032)>
<CS=3911 Type=0 Fn=47 arg( BX=5 CX=3 DX=828 DS=3911) ret( AX=3 CF=0)>
<CS=3911 Type=0 Fn=50 arg( AL=2 BX=5 CX=0 DX=0) ret( AL=0 AX=50031 DX= CF=0)>
<CS=3911 Type=0 Fn=48 arg( BX=5 CX=648 DX=313 DS=3911) ret( AX=648 CF=0)>
<CS=3911 Type=0 Fn=50 arg( AL=0 BX=5 CX=0 DX=0) ret( AL=0 AX=0 DX=0 CF=0)>
<CS=3911 Type=0 Fn=48 arg( BX=5 CX=3 DX=831 DS=3911) ret( AX=3 CF=0)>
<CS=3911 Type=0 Fn=74 arg( BX=5 CX=10271 DX=6206) ret( CF=0)>
<CS=3911 Type=0 Fn=46 arg( BX=5) ret( CF=0)>
<CS=3911 Type=0 Fn=51 arg( AL=1 str1=COMMAND.COM) ret( AL=0 CX=32 CF=0)>
:
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Figure 3: Excerpt from an audit trail for the Vienna virus

Figure 3, above, is described by Swimmer as an excerpt from an audit trail for the Vienna virus, provided as a human-readable representation of a binary NADF file and omitting certain fields (apparently, *StartTime* and *EndTime*) for clarity and brevity. Ex. 1006, 9–10.

On its face, Swimmer includes the following header: “VIRUS BULLETIN CONFERENCE, SEPTEMBER 1995.” Ex. 1006, 1; *see also id.* at 3, 5, 7, 9, 11, 13 (including the same header). Along with the Petition, Petitioner introduced a declaration of Mr. John Hawes, Chief of Operations at Virus Bulletin. Ex. 1088. Mr. Hawes declares that, according to Virus Bulletin’s business records maintained in the ordinary course of business, Swimmer was published by Virus Bulletin to all 163 attendees of the Virus Bulletin International Conference in Boston in September 1995, and the conference proceedings book containing Swimmer was subsequently made available for private sale to individuals by Virus Bulletin. *Id.* ¶ 3.

Mr. Hawes also declares that Exhibit A attached to his declaration is a true and correct copy of Swimmer as published by Virus Bulletin in 1995. *Id.*

¶ 4.

b. Overview of Martin

Martin “explores the problem of protecting a site on the Internet against hostile external Java applets while allowing trusts internal applets to run.” Ex. 1047, 5. According to Martin, “[f]laws in the design and implementation of Java-enabled browsers have repeatedly been discovered,” and “[t]hese vulnerabilities can allow Java applets to erase files, leak sensitive information, and corrupt a user’s environment.” *Id.* Martin discloses a firewall architecture that includes a secured proxy host to which all relevant data packets are forwarded before being permitted to pass through the firewall. *Id.* at 6–7. The proxy host can employ any of several different techniques or a combination of those techniques to identify Java applets so they can be blocked at the firewall. *Id.* at 11–13. For example, the proxy can scan incoming content for <applet> tags, for the “4-byte hex signature CA, FE, BA, BE” required by the Java Virtual Machine Specification for all Java class files to begin, or for a file name ending in “.class” or “.zip.” *Id.* at 12–13.

Martin further discloses that, “[a]lthough we are primarily concerned with Java Applets, it should be emphasized that Netscape’s Javascript and Microsoft’s ActiveX—the other popular portable-executable formats—deliver the executable in the enabling document proper,” and that “[t]here is no second line of defense for these formats; if they are to be blocked, they must be blocked in the enabling document.” Ex. 1047, 12. Martin points out that JavaScript and ActiveX controls must be blocked in the enabling document, because strategies like scanning for <applet> tags or the Java class header are not effective against those types of code. *Id.* Martin further states that “how to protect against portable executable formats like

Javascript that somehow beat the <applet>-style blocking mechanism remains an open problem” (*id.* at 14).

4. *Discussion – Differences Between the Claimed Subject Matter and the Prior Art*

a. *Obviousness over Swimmer*

i. *Claim 1*

Petitioner asserts in the Petition that Swimmer discloses or renders obvious all elements of each of challenged claims 1, 2, 6, 10, 11, and 15. Pet. 40–51. With respect to claim 1, Petitioner provides a claim chart mapping Swimmer’s disclosure to the claim elements. *Id.* at 41–43. Petitioner first cites the overview of the VIDES system in Swimmer’s Abstract as disclosing a “computer-based method,” as recited in the preamble of claim 1. *Id.* at 41 (citing Ex. 1006, 1). Petitioner then points to Swimmer’s disclosure that “[o]ne possibility is to use [the VIDES system] as a type of firewall for programs entering a protected network,” as corresponding to the step of “receiving an incoming Downloadable” recited in claim 1. *Id.* at 41, 43–44 (citing Ex. 1006, 13). In particular, relying on Dr. Rubin’s testimony, Petitioner contends that a person of ordinary skill in the art “would have understood that a firewall, in performing its filtering or blocking function, receives incoming executable application programs that a client computer attempts to download [sic] from a source computer—i.e., Downloadables . . . ,” and “[t]herefore, Swimmer renders the limitation ‘receiving an incoming Downloadable’ obvious.” *Id.* at 44 (citing Ex. 1002 ¶ 94).

With respect to the step of “deriving security profile data for the Downloadable, including a list of suspicious computer operations that may

be attempted by the Downloadable,” Petitioner contends, first, that “Swimmer’s VIDES system uses an emulator to monitor the execution of application programs (Downloadables), generating a stream of ‘activity data’ that can be used to construct rules for detecting computer viruses.” Pet. 44 (citing Ex. 1006, 1–2, 5, 7). Petitioner points out that “[a]mong the activity data VIDES collects in each stored audit record is the ‘function number’ of a MS-DOS function requested by a program,” and further contends that the functions identified by Swimmer’s emulator “are the very same types of operations referred to by the applications related to the ’494 patent as examples of ‘Downloadable security profile data,’ and . . . are the very same types of operations identified in the specification of the ’494 patent as examples of ‘malicious’ operations.” *Id.* at 44–46 (citing Ex. 1001, 18:62–19:2; Ex. 1002 ¶¶ 96–97; Ex. 1006, 7, 9; Ex. 1027, 11:9–13; Ex. 1084 (Ray Duncan, *Advanced MS-DOS Programming* (Microsoft Press 1986) (“Duncan”)), 6–11⁷). Petitioner contends, “[e]lsewhere, the ’494 patent links ‘suspicious’ operations with ‘malicious’ operations,” and concludes “the collected activity data ‘includ[es] a list of suspicious computer operations that may be attempted by the Downloadable.” *Id.* at 46 (citing Ex. 1001, 2:54–55).

Lastly, with respect to the step of “storing the Downloadable security profile in a database,” Petitioner points to Swimmer’s disclosure of the “final format for an MS-DOS audit record” as “<code segment, RecType, StartTime, EndTime, function number, arg(...), ret(...)>,” and contends that a person of ordinary skill in the art “would have recognized that the audit-

⁷ When citing Ex. 1084, we refer to the page numbers added by Petitioner in the lower right-hand corner of each page.

record format in Swimmer corresponds to a database schema (e.g., that of a flat-file database)” and “[m]oreover, since Swimmer’s activity data is collected to support subsequent virus detection by an expert system called ‘ASAX,’ the activity data (the recited ‘security profile data’) is stored ‘to serve one or more applications.’” Pet. 46–47 (citing Ex. 1006, 9, 11, Fig. 3; Ex. 1002 ¶ 98; Ex. 1086, 1:37–41, 3:19–20). Therefore, Petitioner concludes, Swimmer meets the construction of “database” as “a collection of interrelated data organized according to a database schema to serve one or more applications.” *Id.* at 47.

Based on the record developed at trial, we are persuaded that Petitioner explains sufficiently how Swimmer teaches or suggests each limitation of claim 1. Patent Owner’s arguments to the contrary, addressed below, do not persuade us otherwise.

Public Accessibility of Swimmer

As an initial matter, Patent Owner contends that Petitioner has not established that Swimmer was publicly accessible prior to the critical date. PO Resp. 1. Patent Owner argues that “[n]either the Swimmer reference itself nor Mr. Hawes’ testimony provides sufficient evidence that Swimmer was publicly available.” *Id.* at 12. Citing the statement at the bottom of the first page of Swimmer that “No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form without the prior written permission of the publishers,” Patent Owner contends that “[t]he limitation on the dissemination is evidenced on Swimmer itself, establishing the fact that Swimmer was not intended to be publicly available.” *Id.* at 12–13 (citing Ex. 1006, 1). According to Patent Owner, “based on this language, a person of ordinary skill in the art would have had to seek

permission in order to obtain a copy of Swimmer, and there is no evidence of record that someone would have received Swimmer had they placed such a request.” *Id.* at 13. Further, according to Patent Owner, Petitioner’s reliance on Mr. Hawes’s testimony fails to remedy the deficiency in evidence, because “Mr. Hawes did not attend the Virus Bulletin Conference—and, in fact, did not start working for Virus Bulletin until 2005.” *Id.* (citing Ex. 2014, 6:8–12, 20:12–24). “Accordingly, he lacked personal knowledge as to the availability of Swimmer as of 1995.” *Id.* Moreover, Patent Owner contends, “Mr. Hawes based his testimony on the number of attendees at the Virus Bulletin Conference on unauthenticated hearsay documents that have not been produced in this case.” *Id.* at 13–14 (citing Ex. 2014, 23:10–24; 26:10–12); *see also id.* at 7–8 (asserting that Mr. Hawes’s testimony was based on unauthenticated documents and is unsubstantiated).

Petitioner replies that Patent Owner provides no evidence rebutting Mr. Hawes’s testimony that Swimmer was presented at Virus Bulletin’s September 1995 conference, published to 163 attendees in a conference proceedings book, and subsequently made available for purchase. Pet. Reply 3. Petitioner further contends that the petitioner in the Symantec 1892 IPR also presented additional evidence proving the public availability of Swimmer in that case. *Id.* at 3–4. Notwithstanding Patent Owner’s argument that Mr. Hawes’s testimony based on Virus Bulletin’s business records is insufficient, Petitioner quotes *In re Hall*, 781 F.2d 897, 899 (Fed. Cir 1986) for the proposition that “[t]he probative value of routine business practice to show the performance of a specific act has long been recognized.” *Id.* at 4 (citing PO Resp. 7–8, 13–14). Petitioner further

contends that Swimmer’s “statement discouraging future copyright violations is not probative of initial publication or the authorized sale of copies,” and “if anything, . . . supports the fact that the article was disseminated to those other than the authors or publishers.” *Id.* (citing Ex. 1006, 1). According to Petitioner, “[w]hether or not Swimmer had ‘a reasonable expectation’ that the disseminated information not be copied is irrelevant here, where the information was already published, disseminated, and going to be offered for sale.” *Id.* at 4–5 (citing *In re Klopfenstein*, 380 F.3d 1345, 1351 (Fed. Cir. 2004)); *see also id.* at 5 (citing Ex. 1088; Ex. 1089; *Mass. Institute of Tech. v. AB Fortia*, 774 F.2d 1104, 1109 (Fed. Cir. 1985); *In re Wyer*, 655 F.2d 221, 227 (Fed. Cir. 1981)).

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). To qualify as a prior art printed publication, the reference must have been disseminated or otherwise made accessible to persons interested and ordinarily skilled in the subject matter to which the document relates prior to the critical date. *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008).

As an initial matter, we determined in the Symantec 1892 IPR that the evidence produced at trial in that case demonstrated that Swimmer was publicly available through the University of Washington Libraries in December 1995 at that Swimmer is, accordingly, prior art with respect to the ’494 patent under 35 U.S.C. § 102(a) and (b). *Symantec*, slip op. at 31 (PTAB Mar. 15, 2017) (Paper 58). In this case, we agree with Petitioner that

the evidence produced at trial sufficiently demonstrates that Swimmer was made publicly available in September 1995. In particular, we credit Mr. Hawes's testimony that Virus Bulletin's business records maintained in the ordinary course of business indicate that Swimmer was distributed to the attendees of the Virus Bulletin International Conference at the Boston Park Plaza Hotel and Towers in September 1995, and that the conference proceedings were subsequently made available for sale by Virus Bulletin. Ex. 1088 ¶ 3; *see also* Ex. 1089 ¶ 6 (testifying that Ex. 1089 Appendix B is a "true and correct copy of a list of 163 delegates, or attendees, who registered to attend the 1995 Virus Bulletin International Conference," "created by Virus Bulletin employees" in the course of regularly conducted business activity and "stored along with other conference materials, including the conference proceedings book, at Virus Bulletin's offices ever since").

Swimmer Does Not Teach Away from the Claimed Subject Matter

Patent Owner next contends that Swimmer teaches away from the invention claimed in the '494 patent. PO Resp. 16. According to Patent Owner, "[t]he '494 Patent is directed at a network-based solution that derives DSP data and stores the DSP data in a database so that Downloadables do not have to be fully processed every time they are received," and "Swimmer, on the other hand, contradicts this, and discloses that '[e]very file has to be processed' and that 'there are no shortcuts.'" *Id.* (quoting Ex. 1006, 1) (citing Ex. 2011 ¶ 53). Thus, Patent Owner contends, "one of skill in the art would not read Swimmer and be motivated to create a system that involved systems able to shortcut the processing of Downloadables, such as the system claimed in the '494 Patent." *Id.* Patent Owner further contends that "Swimmer also teaches that database solutions

should not be used because they are easily circumvented with polymorphic viruses and that the collection of data can easily be subverted”; that “Swimmer teaches a pipeline process that immediately ‘analyze[s] the stream of data’ which the emulator produces without ever storing it locally”; and that “Swimmer states that efficiency is critical and allows large sequential files ‘to be processed only once, whatever complex is the analysis.’” *Id.* at 16–17 (citing Ex. 1006, Abstract, 3, 7, 13; Ex. 2011 ¶ 103). Thus, according to Patent Owner, “Swimmer does not teach the claims of the ’494 Patent, but advises against such a database-based system, because they can allegedly are [sic] inefficient and can be easily circumvented.” *Id.* (citing Ex. 2011 ¶ 103).

Notwithstanding Patent Owner’s contentions, we do not understand Swimmer to teach away from any of the recited elements of challenged claims 1, 2, or 6. In particular, Swimmer’s statements regarding every file needing to be “processed” and there being “no shortcuts” do not teach away from any of the recited elements of those claims, given the generalized nature of its statements concerning virus detection. *See* Ex. 1006, 1. Moreover, despite Patent Owner’s arguments, the claims of the ’494 patent do not recite any requirement that the processing of Downloadables be “shortcut,” whether or not that may be a benefit of the claimed methods and systems; nor do they specify that Downloadables do not have to be fully processed every time they are received. Further, we do not understand Swimmer’s disclosure that certain prior-art virus-specific detection techniques may not be effective for all types of viruses (see Ex. 1006, 3) to “advise against” the use of “database-based system[s],” simply because Swimmer disclosed that those prior art techniques employed a database. As

Petitioner points out in its Reply, “Swimmer explains that pattern matching becomes difficult when detecting polymorphic viruses, but never attributes this difficulty to the use of a database.” Pet. Reply 17 (citing Ex. 1006, 3).

Swimmer Teaches a “List of Suspicious Computer Operations”

Patent Owner next contends “Swimmer does not disclose ‘a list of suspicious computer operations that may be attempted by the Downloadable,’ because Swimmer never deems any operations as suspicious.” PO Resp. 19. Patent Owner argues, “[t]here is simply no way to derive a list of suspicious operations, without performing the affirmative step of determining what is suspicious when deriving this list,” and “[t]he specification of the ’494 Patent^[8] makes clear that deriving a list of suspicious computer operations involves an affirmative determination that an operation added to the list is suspicious.” *Id.* at 20 (citing Ex. 1013, 9:20–42); *see also id.* at 23 (“As would be understood by a person or ordinary skill in the art at the time of the invention . . . , the act of ‘deriving DSP data, including a list of suspicious computer operations that may be attempted by the Downloadable,’ necessarily includes deeming certain computer operations suspicious” (citing Ex. 2011 ¶¶ 75–77)). In contrast, Patent Owner contends, “Swimmer’s activity data included in the audit trail does not deem any operations as suspicious. At most, Swimmer discloses using an emulation to create an audit trail that has a ‘function number’ attribute to designate standard DOS function numbers logged . . . ,” and “Swimmer indicates that such a verbose audit trail or audit records

⁸ We note that although Patent Owner refers to “[t]he specification of the ’494 Patent,” its citation is instead to the ’194 patent (Ex. 1013), which is incorporated by reference into the ’494 patent.

would be created regardless of whether the content actually does anything malicious or suspicious.” *Id.* at 20–21. Patent Owner contends that, whereas “Petitioner contends that the DOS function numbers listed in Swimmer’s audit trail is [sic] a “list of suspicious computer operations,” “Swimmer explains that ‘*function number* is the number of the DOS function requested by the program’ and does not provide any indication that any affirmative analysis was performed during creation to this audit trail by the emulator.” *Id.* at 21 (citing Pet. 44–45; Ex. 1006, 9). Patent Owner points out that Duncan, cited by Petitioner, explains that “MS-DOS functions . . . are well standardized and available on any MS-DOS system.” *Id.* at 21–22 (quoting Ex. 2042, 3⁹). Citing Dr. Medvidovic’s testimony referring to Duncan, Patent Owner further contends “it would be nonsensical to understand a book published by Microsoft that teaches programmers how to utilize MS-DOS system functions to teach that Microsoft’s standard system functions are suspicious computer operations.” *Id.* at 22 (citing Ex. 2042, 3; Ex. 2011 ¶ 87).

Patent Owner further contends that “Petitioner’s argument that Swimmer discloses ‘a list of suspicious computer operations’ rests on a fundamentally flawed foundation that the DOS function numbers logged by the emulator in Swimmer’s audit trail ‘are the very same types of operations identified in the specification of the ‘494 patent as examples of “malicious” operations.’” PO Resp. 23 (citing Pet. 45). According to Patent Owner, “no

⁹ We note that Exhibit 1084, provided by Petitioner, and Exhibit 2042, provided by Patent Owner, are different excerpts from Duncan. When citing Ex. 2042, we refer to the page numbers added by Patent Owner in the lower right-hand corner of each page.

computer operations, DOS functions or otherwise, are *a priori* suspicious,” and “[t]his understanding is explicitly belied by the disclosure of the ’194 Patent, which is incorporated into the ’494 Patent, and explains that computer operations are suspicious to the extent that they have been deemed suspicious.” *Id.* (citing Ex. 1013, 5:42–54, 9:20–42).

Patent Owner further contends that Swimmer’s audit trail does not include a list of suspicious computer operations simply because it can be used to detect viruses. PO Resp. 24. Rather, according to Patent Owner, a person of ordinary skill in the art would understand that the emulator in Swimmer includes all activity, and “the fact that the audit records are specifically formatted in a way (namely sequentially with function numbers) simply makes them **amenable** to being processed using the ASAX expert system, but does not indicate that the audit trail makes an determination of these functions.” *Id.* (citing Ex. 2011 ¶¶ 75–77). As such, Patent Owner contends, “the audit trail does not include a list of suspicious computer operations, but is simply the raw data that is fed into the ASAX expert system.” *Id.* at 24–25. According to Patent Owner:

Swimmer is clear that the VIDES system is applied to every file, regardless of whether it actually contains a virus, and that an audit trail is created for every file, regardless of whether it contains suspicious operations. [Ex. 2011] ¶ 94 (citing [Ex. 1006,] 1 (“Out of perhaps one hundred files, only one may actually contain a new virus. Unfortunately, there are no short cuts. Every file has to be processed.”). Accordingly, because audit trails must be generated and processed for every file, regardless of whether it actually contains a virus, a POSITA would understand that Swimmer’s VIDES system would generate an audit trail whether or not any of the audit records therein represented virus activity. *Id.* Swimmer recognizes that 99 times out of 100 a file processed by its VIDES system would not contain a virus, and so 99 percent of the time, the audit

records generated by the VIDES system would not actually represent “virus activity in particular.” [Ex. 1006,] 9, ¶ 4. Thus, nothing in Swimmer discloses that the audit records relates [sic] to deriving “a list of suspicious computer operations,” and as such, the Petitioner has failed to meet its burden for claim 1 and 10.

PO Resp. 25.

Patent Owner further contends that “the function number attribute in Swimmer’s audit trail represents standard DOS-function numbers not any operations deemed suspicious,” and “[t]hus, Swimmer’s audit trail is not a list of suspicious computer operations.” PO Resp. 25–26. While acknowledging our determination in the Decision on Institution that “the claims do *not* require that the list consist *only of* suspicious operations,” Patent Owner contends that “one of skill in the art would understand that the word ‘suspicious’ in the claims means that there must be a designation of computer operations as suspicious, not just a listing of every computer command that is executed within a program.” *Id.* at 26 (citing Dec. on Inst. 24; Ex. 2011 ¶¶ 47, 81). Accordingly, Patent Owner concludes, “although the derived DSP does not need to include *only* a list of suspicious computer operations, there must be at least a derived list of suspicious computer operations included in the DSP,” and “Swimmer does not disclose creating such a list” *Id.*

Finally, Patent Owner argues that Swimmer’s activity data contained within an audit record cannot correspond to DSP data because an audit record does not include a list of suspicious operations. PO Resp. 27. More particularly, “each audit record can only include a single MS-DOS function number, not a list of computer operations, let alone a list of *suspicious* computer operations, as required by the claims.” *Id.*

In reply, Petitioner responds that Patent Owner “presents no evidence supporting an additional requirement that the claimed system ‘deem’ certain operations suspicious,” and that “construing the claims to ‘necessarily’ require ‘deeming certain computer operations suspicious’ would improperly read-in limitations.” Pet. Reply 6–7 (citing PO Resp. 23). According to Petitioner, “the ’494 patent does not define ‘deriving’ DSP data to require a separate act of ‘deeming’ certain operations suspicious, nor does it disavow listing non-suspicious operations.” *Id.* at 7. Further, Petitioner contends, “the incorporated ’194 specification makes clear that ‘deriving’ DSP data does not necessarily require ‘deeming certain computer operations suspicious,’” but “[r]ather, ‘DSP data 310 includes the list of all **potentially** hostile or suspicious computer operations,’ indicating that DSP data includes operations not deemed hostile or suspicious when derived.” *Id.* (citing Ex. 1013, 5:45–48 (emphasis added by Petitioner)).

Responding to Patent Owner’s contention that it would be “nonsensical” to believe Microsoft intended standard system functions to be suspicious computer operations (PO Resp. 22), Petitioner argues that it relies on Duncan only to support that Swimmer’s function numbers correspond to computer operations, particularly those identified by the ’494 patent as examples of operations that persons of ordinary skill in the art already understood to be suspicious. Pet. Reply 9 (citing, e.g., Pet. 45–46; Ex. 1001, 2:54–55, 18:62–19:2; Ex. 1002 ¶ 96 (identifying a write to the beginning of a file as suspicious); Ex. 1084, 6–11 (identifying function numbers corresponding to program/process-termination operations, calls made to a file system, calls made to memory, and calls made to a network system); Ex. 1093, 6:27–42 (identifying file write operations as potentially

malicious); Ex. 1094, 1:25–33 (identifying “write access” as a potentially malicious operation)). Indeed, according to Petitioner, “Dr. Medvidovic admits that ‘SEND, WRITE, RECEIVE, DISABLE, ACCESS, MOUNT, UNMOUNT, CALL and LOG’ are ‘suspicious operations,’ because he identifies that operations as evidence that Avast’s products embody the limitation.” *Id.* at 10 (citing Ex. 2027, 3).

Petitioner further contends that, “even under [Patent Owner’s] improper construction, Swimmer renders obvious deriving DSP data, ‘including a list of suspicious operations.’” Pet. Reply 10–13. In particular, Petitioner argues, Swimmer “discloses a transition diagram that represents an infection process—a sequence of actions ‘a’ that drive the system ‘from an initial *clean* state to a final *infectious* state,’” and “teaches that its system is designed to ‘represent those actions **relevant to the infection scenario**’ and that ‘many possible actions may occur between adjacent states, but are not recorded because they do not entail a modification in the current state.’” *Id.* at 11–12 (citing Pet. 53; Ex. 1006, 4, 5, 9, Fig. 1). Petitioner contends Patent Owner’s declarant, Dr. Medvidovic, admitted that Swimmer suggests only recording actions that involve a modification of the current state and also acknowledged an example of an action that may take a system from a system from a clean to an infectious state is a computer operation, such as a file write command. *Id.* at 12 (citing Ex. 1100, 34:15–35:13, 45:25–46:14). Petitioner contends Swimmer additionally suggests “tuning the emulator to provide *only the data necessary* for detecting virus activity,” and accordingly “teaches ‘deeming’ certain activity data—including DOS functions or computer operations—to be suspicious.” *Id.* (citing Ex. 1006, 5, 9, 13).

In the Symantec 1892 IPR, we considered and rejected Patent Owner’s proposed construction of “a list of suspicious computer operations” as “a list of computer operations deemed suspicious.” *Symantec*, slip op. at 8–12. In view of the arguments raised by the parties in that case and the disclosure of the ’194 patent incorporated by reference in the ’494 patent, we determined that that term is instead properly construed as a “list of all operations that could ever be deemed potentially hostile,” non-limiting examples of which includes file operations; network operations; registry operations; operating systems operations; resource usage threshold operations, memory operations, CPU operations, and graphics operations. *Id.* at 12 (citing Ex. 1013, 5:50–6:4). Notwithstanding that determination, however, we further determined that our ultimate conclusions regarding patentability of the challenged claims did not turn on our adoption of that construction, as opposed to the parties’ proposed constructions in that case. *Id.*

Although Patent Owner does not contend that express construction of “a list of suspicious computer operations” is necessary in this case (*see* PO Resp. 8–11), its arguments nonetheless are premised on the construction that it advanced in the earlier case (*see, e.g., id.* at 19 (“Swimmer Does Not Disclose ‘a list of suspicious computer operations that may be attempted by the Downloadable’ because Swimmer never deems any operations as suspicious.”), 22 (“Swimmer’s audit trail does not deem any operations as suspicious. Accordingly, Swimmer’s audit trail does not include ‘a list of computer operations deemed suspicious’)). Regardless, we are persuaded by Petitioner’s arguments and evidence that Swimmer discloses deriving security profile data including a list of suspicious computer operations even

under Patent Owner’s proposed construction. Swimmer teaches generation of audit records for “INT 21h” (or “interrupt 0x21”) DOS system functions (Ex. 1006, 7, 9), which we find include the types of operations that Swimmer identifies to be involved in virus infection strategies—e.g., file operations such as opening, writing, reading, and closing files, as well as filtering of audit results for further processing (*see id.* at 4–8, Fig. 2; Ex. 1084, 6–11). Although Swimmer does not use the words “deemed” or “suspicious,” we understand Swimmer to have deemed those functions suspicious in the same broad manner permitted by the ’194 patent that is incorporated by reference into the ’494 patent. In particular, the ’194 patent states, in its description of Figure 3 thereof:

The code scanner 325 may generate the DSP data 310 as a list of all operations in the Downloadable code which could ever be deemed potentially hostile and a list of all files to be accessed by the Downloadable code. . . .

An Example List of Operations Deemed Potentially Hostile

File operations: READ a file, WRITE a file;
Network operations: LISTEN on a socket, CONNECT to a socket, SEND data, RECEIVE data, VIEW INTRANET;
Registry operations: READ a registry item, WRITE a registry item;
Operating system operations: EXIT WINDOWS, EXIT BROWSER, START PROCESS/THREAD, KILL A PROCESS/THREAD, CHANGE PROCESS/THREAD PRIORITY, DYNAMICALLY LOAD A CLASS/ LIBRARY, etc.; and
Resource usage thresholds; memory, CPU, graphics, etc.

Ex. 1013, 5:50–6:4. Further, column 9, lines 20–42, of the ’194 patent, cited by Patent Owner in support of its contention that “deriving a list of

suspicious computer operations involves an affirmative determination that an operation added to the list is suspicious,” expressly connects the determination as to whether a resolved command is “suspicious” with, for example, “whether the command is one of the operations identified in the list described above with reference to FIG. 3”—i.e., referring, as quoted above, to the “list of all operations in the Downloadable code which could ever be deemed potentially hostile.” *Id.* at 5:50–53, 9:20–29.

As Patent Owner acknowledges (PO Resp. 26), we explained in the Decision on Institution that we do not understand the recited step of “deriving security profile data for the Downloadable, including a list of suspicious computer operations that may be attempted by the Downloadable” to require the recited list to consist *only* of suspicious computer operations. Dec. on Inst. 24. Patent Owner contends that “although the derived DSP data does not need to include *only* a list of suspicious computer operations, there must be at least a derived list of suspicious computer operations included in the DSP, [and] Swimmer does not disclose creating such a list.” PO Resp. 26. We disagree. This is not akin to Patent Owner’s analogy that “if one were asked to provide a list of the FBI’s most wanted criminals and instead provided a copy of the most recent census of the United States, this would not be considered a list of the FBI’s most wanted, even though their names could be buried within the millions of other names.” *Id.* Rather, in view of the ’194 patent’s broad pronouncement that DSP data may be generated “as a list of all operations in the Downloadable code which could *ever* be deemed potentially hostile” (Ex. 1013, 5:50–53 (emphasis added))—which, for reasons explained above, we determine provides the best indication as to what the claim phrase “list of

suspicious computer operations” means in the context of claim 1—a more apt analogy would be “if one were asked to provide a list of all United States residents who *could ever potentially appear* on a list of the FBI’s most wanted criminals,” for which, we find, a copy of the most recent census may well serve the purpose.¹⁰

Finally, although we agree with Patent Owner that each audit record in Swimmer includes only a function number corresponding to a single computer operation, rather than a list of computer operations (*see* PO Resp. 27–28), we understand Swimmer’s activity data (plural) to be Downloadable security profile data, *the individual elements of which* are stored in audit records.

Swimmer Teaches “Storing” Security Profile Data in a “Database”

Patent Owner additionally contends that Petitioner has not demonstrated that Swimmer discloses “storing” DSP data in a “database,” as required by the challenged claims. PO Resp. 28–43.

While acknowledging that Petitioner asserts that a person of ordinary skill in the art “would have recognized that the audit-record format in Swimmer corresponds to a database schema (*e.g.*, that of a flat-file database),” Patent Owner contends that “[t]here can be no dispute that Swimmer’s audit trail (which uses what Petitioner references as the ‘audit-record format’) is a log file, [and] the claimed database cannot be read so broadly that it include Swimmer’s audit trail.” PO Resp. 29–30. According

¹⁰ We also do not understand Swimmer to register *all* calls to DOS functions. Swimmer explains that “[t]he very first implementation of an auditing system . . . registered all calls to DOS functions,” but that that implementation “did not run reliably, and could be subverted by tunnelling viruses” and “was soon scrapped.” Ex. 1006, 7.

to Patent Owner, “[t]hat a log file is not database is unequivocally supported by the District Court [in the *Sophos* litigation], where the Court stated that ‘the term “database” is not broad enough to include a log file.’” *Id.* at 30 (citing Ex. 2001, 7; Ex. 2011 ¶¶ 124–127). Further:

A log file, in contrast to a database, is “a record of transactions or activities that take place on a computer system,” just as described by this audit trail. See [Ex. 2011] ¶¶ 107–109 (citing Ex. 2017 at 288, Microsoft Press Computer Dictionary Third Edition); see also Ex. 2020, Logfile, *available at* <http://en.wikipedia.org/wiki/Logfile> (“Event logs record events taking place in the execution of a system in order to provide an **audit trail** that can be used to understand the activity of the system and to diagnose problems.”) (emphasis added); Ex. 2022 [TechTerms definition of “log file”]. What Petitioner identifies is a file format, and not a schema associated with a database. [Ex. 2011] ¶¶ 100–102.

PO Resp. 30–31. Swimmer’s “audit trail has all of the hallmarks of a traditional log file,” according to Patent Owner, including being “provided in a generic format,” being “a sequential file in which records are sequentially appended,” and having “individual audit records [that] . . . simply share the same format rather than being governed by a database schema.” *Id.* at 31 (citing Ex. 2011 ¶¶ 112–116). Moreover, Patent Owner contends, the ’494 Patent itself distinguishes between log files for event logging and the claimed database, and a person of ordinary skill in the art would understand that the ’494 patent distinguishes between them “in both form and function.” *Id.* at 32 (citing Ex. 2011 ¶¶ 120–127). “Consistent with this understanding of the terms ‘log’ and ‘database’ in the context of the ’494 Patent,” Patent Owner contends, a person of ordinary skill in the art “would not understand Swimmer’s audit trail to correspond to a database because the audit trail is simply generated according to the same ‘logging’

principles disclosed to be used for a ‘log,’ and it is in a format fit for immediate processing of data rather than later retrieval.” *Id.* (citing Ex. 1006, 7). “Further supporting that the audit trail is a log file is that in IPR2015-01892, . . . the expert for the petitioner there, Dr. Jack Davidson, agreed that the audit trial in Swimmer was a log file.” *Id.* at 32–33 (citing Ex. 2016, 76:12–78:19). Additionally, Patent Owner contends, “Swimmer specifically uses the term ‘database’ in its disclosure, and explains how they should not be used.” *Id.* at 34 (citing Ex. 1006, 3).

“Contrary to Petitioner’s argument that a POSITA would consider the audit record format illustrated in Swimmer’s Figure 3 to be a schema for a database,” Patent Owner contends, “Swimmer’s ‘audit trail’ does not . . . contain a database schema.” PO Resp. 35. According to Patent Owner, “As Dr. Medvidovic explains, ‘a person skilled in the art at the time would understand a “database schema” to be “a description of a database to a database management system (DBMS) in the language provided by the DBMS.”’” *Id.* (quoting Ex. 2011 ¶¶ 60, 106, 134). Further, Patent Owner contends, “Swimmer’s audit trail is not a ‘flat-file database’ as urged by Petitioner,” but is instead merely a “flat file—and in particular a log file” with a generic file format *Id.* at 35–38 (citing Ex. 2011 ¶¶ 110, 121, 128–136; Ex. 2017, 74; Ex. 2044, 78).

Patent Owner further contends that “Swimmer’s technique does not involve placing the derived DSP data into a database. . . . At most, Swimmer describes ‘converting’ data from a native file format to the generic *Normalized Audit Data Format* (NADF),” but “[a] POSITA would recognize that ‘converting’ is different from storing” PO Resp. 39 (citing Ex. 1006, 7; Ex. 2011 ¶ 98).

Patent Owner further contends that the independent claims of the '494 patent "impose a timing requirement on when the DSP data is stored" that is not met by Swimmer's VIDES system. PO Resp. 40. In particular, Patent Owner asserts, "the DSP data cannot be stored in the database until it has been derived, and deriving the DSP includes deriving the list of suspicious computer operations." *Id.* "In contrast, . . . Swimmer never first derives activity data, and never stores the activity data in a database." *Id.* at 40–41.

Finally, Patent Owner contends that one of skill in the art would not be motivated to substitute Swimmer's log file with a database, because Swimmer teaches against database-based systems; explicitly teaches the use of "files," not "databases"; and substituting a database to replace Swimmer's audit trail would not improve performance in Swimmer's system. PO Resp. 41–42 (citing Ex. 1006, 7, 12; Ex. 2011 ¶¶ 103, 115–123).

Petitioner replies that a person of ordinary skill in the art would have recognized the structured format in which Swimmer's activity data is collected and stored (i.e., "<code segment, RecType, StartTime, EndTime, function number, arg (...), ret (...)>"), with a field for each attribute, to correspond to a database schema. Pet. Reply 14 (citing Ex. 1002 ¶ 98; Ex. 1006, 9–10; Pet 46–47). According to Petitioner, "Dr. Rubin and the prior art confirm that '[a] flat-file data store schema consists of records composed of fields,' similar to Swimmer's format described above." *Id.* (quoting Ex. 1002 ¶ 98 (quoting Ex. 1086, 3:19–20)) (citing Ex. 1006, 9–10). Petitioner further replies that "Swimmer further explains that ASAX relies on the collection of activity data for subsequent virus detection," and "[a]ccordingly, Swimmer discloses storing its activity data in a collection

that is organized according to the schema of a flat-file database—including fields for certain attributes—in order to serve ASAX.” *Id.* at 14–15.

In reply to Patent Owner’s contention that Swimmer does not disclose storing anything in a database because the emulator’s stream is immediately consumed (PO Resp. 40), Petitioner contends that Swimmer contradicts that understanding. Pet. Reply 15. Specifically, Petitioner contends, “Swimmer teaches that after deriving and storing activity data, the collection may be filtered by ASAX in order to ‘reduce the number of audit records to only relevant higher-level records,’” and “[i]n order to filter the activity data of multiple records, ASAX must have access to a collection of activity data—i.e., the activity data must be derived, organized, and collected before being analyzed by ASAX.” *Id.* (citing Ex. 1006, 7).

Responding to Patent Owner’s contention that Swimmer’s “activity data collection” cannot be a database because it is a “log file” (PO Resp. 29–34), Petitioner contends that “the *name* applied to the data collection is not determinative; the *structure* of the collection is what matters,” and “[a]s Finjan’s expert admitted, something termed a ‘log file’ could still be a database if the records in the file were stored according to a database schema.” Pet. Reply 15–16 (citing Ex. 1098, 63:14–22, 64:7–10).

Petitioner further contends that Patent Owner’s assertion that Swimmer “teaches that database solutions should not be used because they are easily circumvented with polymorphic viruses” mischaracterizes Swimmer. Pet. Reply 17 (citing PO Resp. 16). According to Petitioner, “Swimmer explains that pattern matching becomes difficult when detecting polymorphic viruses, but never attributes this difficulty to the use of a database,” and “[i]n fact, Swimmer acknowledges that databases were well

known, widespread, and obvious to a [person of ordinary skill in the art.” *Id.* (citing Ex. 1006, 3 (“Usually, a scanner uses a database of virus detection information”)). Moreover, Petitioner contends, “Swimmer specifically identifies an intrusion detection system’s ability to ‘update[] virus information databases.’” *Id.* (citing Ex. 1006, 3).

Lastly, responding to Patent Owner’s assertion that Swimmer teaches away from using a database schema because it uses a “canonical” or “generic” format” (PO Resp. 37–38), Petitioner contends “[c]anonical form’ can be used to refer to a standard or prototypical form, but this does not exclude a form that complies with a type of database schema.” Pet. Reply 17. “As stated by Dr. Rubin, a [person of ordinary skill in the art] would have recognized that the audit-record format in Swimmer was typical or standard of a flat-file database,” and “[e]ven Swimmer’s characterization of the format as generic does not preclude it from being database schema for the same reasons—flat-file databases were widely known and used.” *Id.* at 17–18 (citing Ex. 1002 ¶ 98).

Having considered the full trial record, we are persuaded that Swimmer teaches storing security profile data in a “database,” as that term is properly construed as “a collection of interrelated data organized according to a database schema to serve one or more applications.” *See supra* Section III.A. In particular, the file includes audit records relating code segments with function numbers corresponding to the DOS functions they invoke; the memory/register values, if any, used in the calls to those functions; the return values, if any, returned by those functions; and the corresponding action start and end times—thus, “a collection of interrelated data.” *See* Ex. 1006, 9, Fig. 3. Those data are organized according to a database

schema, namely, the comma-delimited format “<code segment, RecType, StartTime, EndTime, function number, arg (...), ret (...)>,” “consisting of records composed of fields.” *Id.*; Pet. 46–47; Pet. Reply 14–18; Ex. 1002 ¶ 98; Ex. 1086, 3:19–20). Finally, Swimmer discloses that the audit trail data are provided as an NADF file “for further processing”—i.e., to serve an application. Ex. 1006, 7, 12–13; see Pet. 47 (“[S]ince Swimmer’s activity data is collected to support subsequent virus detection by an expert system called ‘ASAX’ (Ex. 1006 at 11), the activity data (the recited ‘security profile data’) is stored ‘to serve one or more applications.’”). Further, we determine that Swimmer’s use of the term “file” and the disclosure of “further processing” require that the data be stored, and not merely “converted,” as Patent Owner contends. See PO Resp. 38–40; Pet. 46–47; Pet. Reply 14–15.

We acknowledge that district court in the *Sophos* litigation found that the parties’ disagreement in that case “center[ed] on whether ‘database’ includes ‘simple files such as a log file,’” where, “[a]ccording to Finjan, a log file is unstructured collection of data on a computer,” and explained that “‘database’ should be construed, in part, ‘because the parties dispute the categorization of ‘log file’ as a ‘database.’” Ex. 2001, 4. In that case, the court found, based on references to a “database” in the ’494 patent itself, that “a database is used as an information source that serves protection engines when they inspect Downloadables.” *Id.* at 5–6. The court also found that the related ’780 patent “reflects the same understanding of database in its reference to a ‘security database,’” and separately “refers to an ‘event log,’ stating that it ‘includes determination results for each Downloadable

examined and runtime indications of the internal network security system.”

Id. at 6 (quoting Ex. 2028, 3:62–64). The court concluded:

The patent’s language and context supports Finjan’s definition of a database. The specifications illustrate that a “database” serves applications, a characteristic that is not included in Sophos’s definition. The fact that a database assists applications also undermines Sophos’s argument that a log file is a database, because a log file is more properly understood as a passive record, instead of a storage device that interacts with an application. The ’780 patent also differentiates between log files and “databases” by referring to them separately.

In addition, Finjan’s expert, Nenad Medvidovic, states that a person of ordinary skill in the art would understand “database” to mean “a collection of interrelated data organized according to a database schema to serve one or more applications.” [Dr.] Medvidovic further states that “[a] person would understand a simple log file is not a database because it is not structured like a database A database, on the other hand, is a structured software component that allows user and other software components to store and retrieve data in an efficient manner.” . . . [Dr.] Medvidovic’s definition appears reasonable when compared to the language of the patent and the definitions from computing dictionaries such as the IBM Dictionary of Computing and the IEEE Standard Dictionary of Electrical and Electronics Terms.

. . . .

I am persuaded by Finjan’s assertion that “[t]he claim language of the asserted patents all relate to the storage of data within the database in the context of the security profile or the downloadable security profile. The system actively uses these security profiles to detect malware and manage the system, not just for archival storage.” Therefore, I find that a log file does not qualify as a database in the context of this patent. Because Finjan’s definition appears to reflect both the context of the patent as well as a well-accepted definition of the term, I adopt Finjan’s construction of “database.”

Ex. 2001, 6–7 (internal citations omitted).

Although we agree for the reasons articulated by the district court that our adopted construction of “database” would exclude a “simple” log file consisting of an “unstructured collection of data on a computer,” we do not agree with Patent Owner’s suggestion that this construction necessarily excludes *all* log files from being databases. Notwithstanding Patent Owner’s argument that Dr. Davidson, expert witness for the petitioner in the Symantec 1892 IPR, characterized Swimmer’s audit trail as a log file and that that “is dispositive of the issue” (PO Resp. 33 (citing Ex. 2016, 76:12–78:19), we explained as follows in our Final Written Decision in the Symantec 1892 IPR:

[W]e credit [Symantec’s expert] Dr. Davidson’s deposition testimony that the word “log” refers to the *kind* of data that is stored in a file, not to the file’s format or organization, and that a log file can, therefore, be considered a database “if it’s organized in a fashion . . . for a database, which it’s an interrelated collection of data organized according to the scheme of serving one or more applications.” [Symantec 1892 IPR Ex. 2041], 50:8–51:1; *see also id.* at 52:2–10 (“Q. So a log file would be considered a database, correct? A. Again, it depends on how it’s organized whether it would be considered a database. . . . [I]t’s not like it’s one or the other. It could be both.”). In contrast, we understand the district court’s stated exclusion of “log files” from the construction of “database” to have been based on a fundamentally different interpretation of “log file” than Dr. Davidson’s, informed by Patent Owner’s representation in the district court litigation that a log file is an “unstructured collection of data.” *See* [Symantec 1892 IPR Ex. 2002], 4:20–21. In view of the clear disconnection between Dr. Davidson’s and the district court’s interpretations of the term “log file,” we disagree with Patent Owner’s contentions that “[t]he practical import” of our construction is to exclude log files from being databases (*see* [Symantec 1892 IPR, Paper 27 at 7]) and that Dr. Davidson’s “admission” that Swimmer’s audit trail is a database “is decisive” (*id.* at 9).

Symantec, slip op. at 16–17.

Lastly, to the extent that Patent Owner’s argument regarding a “timing requirement” implies that the security profile must be derived *in its entirety* before placing any of the DSP data into the database (*see* PO Resp. 40–41 (“the DSP data cannot be stored in the database until it has been derived”)), we disagree. Although the “deriving” and “storing” steps of claim 1 are separate steps, the claims do not require that the entire security profile must be derived before placing any of the DSP data into the database. The claims expressly recite deriving and storing DSP **data** – not deriving and storing the entire security profile for the Downloadable. Regardless, we are persuaded by Petitioner’s reasoning that, in order for ASAX to “reduce the number of audit records to only relevant higher-level records” (Ex. 1006, 7), the activity data must be derived, organized, and collected before being analyzed by ASAX. Pet. Reply 15.

Summary

In summary, we are persuaded, for the foregoing reasons, that Petitioner has carried its burden to demonstrate that all limitations of claim 1 are taught or suggested by Swimmer.

ii. Claim 2

Claim 2 depends from claim 1 and further recites “storing a date & time when the Downloadable security profile data was derived, in the database.” Ex. 1001, 21:26–28. In support of its contention that Swimmer renders claim 2 unpatentable, Petitioner asserts “Swimmer expressly teaches including, among the stored security profile data, time stamps indicating when a monitored action (e.g., a function call) occurred in the PC emulator: ‘*StartTime* and *EndTime* are the time stamp of action start and end

respectively.” Pet. 49–50 (quoting Ex. 1006, 9–10). Petitioner further asserts that a person of ordinary skill in the art “would have known that the term ‘time stamp’ would include a date as well as a time.” *Id.* at 50 (citing Ex. 1002 ¶ 101; Ex. 1049, 32; Ex. 1087, 3).

In response to Petitioner’s assertions, Patent Owner contends, first, that nothing in Swimmer describes what information is included in the “time stamps”; second, that the time stamps are not shown in any of the examples provided in Swimmer; and third, that a person of ordinary skill in the art would not be motivated to include the date and time in the audit trail “as Swimmer does not disclose a use for them with the VIDES system, as the audit trails are immediately consumed.” PO Resp. 46.

We have considered the evidence cited in the Petition and are persuaded, for the reasons presented by Petitioner, that Petitioner has carried its burden to demonstrate that “storing a date & time when the Downloadable security profile data was derived, in the database” is taught by Swimmer. In particular, the portion of Swimmer cited by Petitioner expressly discloses that “StartTime” and “EndTime” are included in “the final format” disclosed by Swimmer for of each audit record (i.e., *<code segment, RecType, StartTime, EndTime, function number, arg (...), ret (...)>*); that “StartTime” is “the time stamp of action start”; and “EndTime” is “the time stamp of action . . . end.” Ex. 1006, 9. Although those fields appear to be the “less important fields” omitted from the “*human readable* representation of the binary NADF file” depicted as Figure 3 of Swimmer, “so that the audit record becomes clearer and shorter” (*see id.* at 10 (emphasis added)), that does not negate their inclusion as two of only seven fields in each of Swimmer’s audit records. Further, because we find,

for the reasons stated in Section III.B.4.a.i, *supra*, that Swimmer discloses storing audit trail data in a database, we disagree with the premise of Patent Owner’s unsubstantiated attorney argument that a person of ordinary skill in the art “would not be motivated to include the date and time in the audit trail . . . as the audit trails are immediately consumed.” PO Resp. 46.

iii. Claim 6

Claim 6 depends from claim 1 and further recites that the suspicious computer operations “include calls made to an operating system, a file system, a network system, and to memory.” Ex. 1001, 21:35–37. In support of its contention that Swimmer renders claim 6 unpatentable, Petitioner argues:

Among the activity data VIDES collects in each stored audit record is the “function number” of a MS-DOS function requested by a program. (Ex. 1006 at 9.) Swimmer explains that all DOS services are provided to application programs via interrupts and that such services are provided primarily through “interrupt 0x21.” (Ex. 1006 at 7.) For example, function numbers 15 and 16 are, respectively, “Open File” and “Close File” (calls made to a file system). Function numbers 72–74 and 88 are memory-related operations (calls made to memory), and function numbers 94 and 95 are network-related operations (calls made to a network system). Since all of these functions are provided via MS-DOS interrupt 0x21 and MS-DOS is a well-known operating system, they all qualify as “calls made to an operating system.” (Ex. 1006 at 4 (referring to DOS as the “underlying operating system” in prior-art virus-detection systems), 7; Ex. 1084 at 6-11 (Int 21H functions by number and category); Ex. 1002 at ¶¶ 102-103.).

Pet. 51.

Patent Owner does not provide any separate argument with respect to claim 6 in the Patent Owner Response.

We have considered the evidence cited in the Petition and are persuaded, for the reasons presented by Petitioner, that Petitioner has carried its burden to demonstrate that Swimmer teaches that the recited suspicious computer operations “include calls made to an operating system, a file system, a network system, and to memory.”

iv. Claims 10, 11, and 15

As reproduced in Section II.D, *supra*, claim 10 is an independent claim directed to a system comprising a “receiver,” a “Downloadable scanner coupled with said receiver,” and a “database manager coupled with said Downloadable scanner,” for carrying out the “receiving,” “deriving,” and “storing” steps, respectively, recited in independent method claim 1.

In support of its contention that claim 10 is unpatentable over Swimmer, Petitioner contends that “[c]laim 10 is a system version of method claim 1,” and “Swimmer renders claim 10 obvious for the same reasons it renders claim 1 obvious.” Pet. 47. With regard to the recited “receiver,” Petitioner additionally contends that a person of ordinary skill in the art “would have understood that a firewall, in performing its filtering and blocking functions, receives incoming executable application programs that a client computer attempts to download [sic] from a source computer—i.e., Downloadables,” and “[s]uch a person also would have understood that the firewall discussed in Swimmer would include a ‘receiver’ (e.g., a secured proxy host) for performing those functions, as in the Martin reference.” *Id.* at 48 (citing Ex. 1002 ¶ 99; Ex. 1047). Regarding the recited “Downloadable scanner,” Petitioner contends that “[t]he PC emulator in the auditing system described in Swimmer . . . corresponds to the recited ‘Downloadable scanner.’ (See Ex. 1006 at 2 (‘Section 5 shows how the

expert system ASAX is used to analyse the activity data collected by the PC emulator.’.)” *Id.* Lastly, regarding the recited “database manager,”

Petitioner contends:

Swimmer discloses “storing the Downloadable security profile data in a database.” The auditing system or a portion thereof that manages the storing of “activity data” (the recited “security profile data”) in a database thus corresponds to the recited “database manager.” (See Ex. 1006 at 9–10, Figure 4 (showing an “audit” module in the VIDES system architecture).) Furthermore, a [person of ordinary skill in the art] would have understood that an auditing system like that disclosed in Swimmer, which stores structured data in a database, includes a database manager. (Ex. 1002 at ¶ 100.)

Pet. 49.

In response, Patent Owner submits that Swimmer does not disclose or suggest either the “Downloadable scanner” or the “database manager” recited in claim 10. PO Resp. 27–28, 43–46. Regarding the first of those elements, Patent Owner contends that “Swimmer . . . actually teaches against the use of scanners by reasoning that they are easily circumvented.” *Id.* at 28 (citing Ex. 1006, 3). As to the “database manager,” Patent Owner contends that the Petition “struggles to identify the claimed ‘database manager’ in Swimmer” and “vaguely states that Swimmer’s ‘audit system or a portion thereof that manages the storing of “activity data”’ is the claimed ‘database manager.’” *Id.* at 43 (citing Pet. 49). Patent Owner further contends that a person of ordinary skill in the art would “understand[] the term ‘database manager’ to mean ‘a program or programs that control a database so that the information it contains can be stored, retrieved, updated and sorted,” but that “Swimmer does not disclose [such] ‘a program or programs’” *Id.* at 43–44. “At most,” Patent Owner contends,

“Swimmer cites [Mou95], which describes ‘a converter program is called a format adaptor’ which ‘convert[s] a native file to NADF format,’” but “[c]onverting is not storing and is not the same as retrieving stored information from a database.” *Id.* at 44 (citing Ex. 1006, 12 (citing [Mou95]); Ex. 2023 (Mounji, *User Guide for Implementing NADF Adaptors*, Institut d’Informatique (Jan. 1995) (“Mou95”)), 1).

Nor would it have been obvious for Swimmer’s audit system to include a “database manager” program, Patent Owner contends. PO Resp. 44. According to Patent Owner, Petitioner cites Dr. Rubin’s testimony “to argue that it would have been obvious to use a relational database for storing DSP,” “the Petition fails to articulate sufficient reasoning as to why a person of ordinary skill in the art would have incorporated a database manager within the system defined by Swimmer” *Id.* at 44–45. Relying on Dr. Medvidovic’s testimony, Patent Owner asserts that a person of ordinary skill in the art “would also understand that adapting Swimmer to use a database manager as opposed [to] sequential file dependent pipeline processing . . . would require substantial reconstruction and redesign of the elements shown in Swimmer as well as a change in the basic principle under which the Swimmer’s sequential file dependent pipeline processing was designed to operate.” *Id.* at 45–46.

In its Reply, Petitioner argues that Patent Owner mischaracterizes Swimmer in its assertion that Swimmer teaches against a scanner. Pet. Reply 13. According to Petitioner, “Swimmer merely describes the evolution of prior art scanners as they were adapted to account for weaknesses in particular types of scanning,” such as “lexical scanning,” but “Swimmer also discusses the shift to heuristic scanning, used to detect

unknown viruses,” and “Swimmer’s broad discussion does not ‘teach against’ the use of scanners, generally.” *Id.* (citing Ex. 1006, 3). Regarding the recited “database manager,” Petitioner contends that “Swimmer discloses an auditing system responsible for the storage of the ‘activity data collection,’” and that “[a] portion of this auditing system corresponds to the claimed ‘database manager’ because a POSA would have understood that such an auditing system, which collects activity data according to a canonical format in a database, includes a database manager to manage data organization and retrieval for ASAX.” *Id.* at 18 (citing Ex. 1002 ¶ 100; Ex. 1006, 9–10, Fig. 4). Petitioner further contends Patent Owner’s arguments regarding the “database manager” limitation “fall with its related argument that Swimmer does not disclose a database.” *Id.*

Having considered the full trial record, we agree with Patent Owner that Petitioner has not established that Swimmer teaches or suggests either the “Downloadable scanner” or the “database manager” recited in claim 10. *See* PO Resp. 27–28, 43–46.

First, although we agree with Petitioner that Swimmer “does not ‘teach against’ the use of scanners generally” (*see* Pet. Reply 13), Petitioner’s mere assertion that “[t]he PC emulator in the auditing system described in Swimmer . . . corresponds to the recited ‘Downloadable scanner’” and quotation of Swimmer’s statement that “Section 5 shows how the expert system ASAX is used to analyse the activity data collected by the PC emulator” do not persuade us that Swimmer teaches or suggests the “Downloadable scanner” of claim 10. The fact that Swimmer’s emulator might serve the recited *function* of “deriving security profile data for the Downloadable, including a list of suspicious operations that may be

attempted by the Downloadable” by collecting activity data in Swimmer’s system does not establish that a person of ordinary skill in the art would understand it to teach or suggest a “scanner.”

Second, although we find that Swimmer’s NADF file falls within the scope of the term “database” as that term is properly construed (*see supra* Sections III.A, III.B.4.a.i), we do not find any teaching or suggestion in Swimmer of a “database manager.” Petitioner does not offer any persuasive evidence in support of its conclusory and essentially circular arguments that either Swimmer’s audit system or some unspecified “portion” thereof corresponds to the claimed database manager because a person of ordinary skill in the art would have understood it to include one. Pet. 49; Pet Reply 18. Paragraph 100 of Dr. Rubin’s Declaration, which Petitioner cites in the Petition and the Reply as support for its arguments regarding this element, provides an example of a specific relational database management system, MySQL, that has been described as both a “relational database” and as a “Relational Database Management System,” but does not persuasively establish that a database manager could beneficially be used by Swimmer without replacing Swimmer’s NADF file with a relational database. Although we do not understand Petitioner to cite Dr. Rubin’s testimony necessarily “to argue that it would have been obvious to use a relational database for storing DSP,” as Patent Owner contends (PO Resp. 44), we agree with Patent Owner that the Petition fails to articulate sufficient reasoning as to why a person of ordinary skill in the art would have incorporated a database manager within the system defined by Swimmer (*id.* at 44–45). Neither Petitioner nor Dr. Rubin explains persuasively how, or why a person of ordinary skill in the art would have had reason to do so in

the absence of the benefit of hindsight based on the teachings of the '494 patent itself.

Accordingly, Petitioner has not shown by a preponderance of the evidence that the subject matter of claim 10—or of claims 11 and 15, which depend therefrom—would have been obvious over Swimmer.

b. Obviousness over Swimmer and Martin

Claims 3 and 12 depend from claims 1 and 10, respectively, and both further recite that the Downloadable “includes an applet.” Ex. 1001, 21:29–30, 22:21–22. Similarly, claims 4 and 13 depend from claims 1 and 10, respectively, and further recite that the Downloadable “includes an active control” (*id.* at 21:31–32, 22:23–24), and claims 5 and 14 depend from claims 1 and 10, respectively, and further recite that the Downloadable “includes program script” (*id.* at 21:33–34, 22:25–26). Petitioner contends that claims 3–5 and 12–14 of the '494 patent are unpatentable under 35 U.S.C. § 103(a) over the combination of Swimmer and Martin. Pet. 51–54. Petitioner concedes that “Swimmer does not mention the terms ‘applet,’ ‘active control,’ and ‘program script,’” but contends that “Martin expressly discloses blocking Java applets, ActiveX controls, and Javascript programs at a firewall” and that “[i]t would have been obvious to a [person of ordinary skill in the art] implementing a firewall according to the teachings in Swimmer to process incoming applets, active controls (e.g., ActiveX controls), or program scripts (e.g., Javascript programs) at a firewall, as taught in Martin.” *Id.* at 52 (citing Ex. 1047, 5, 11–13). According to Petitioner, “Martin expressly teaches that blocking those three kinds of mobile code had become important due to their increasing popularity,” and “the express teachings in Martin . . . would have motivated a [person of

ordinary skill in the art] to cover those types of mobile code in implementing a system like that described in Swimmer.” *Id.* at 52–53 (citing Ex. 1047, 5, 12; MPEP § 2143(I), Rationale (G); Ex. 1002 ¶ 104). Petitioner further contends that “Swimmer discusses detecting viruses in the context of particular types of DOS executable files” and that a person of ordinary skill in the art “would have understood that analogous code-auditing techniques could be applied to other types of executable code such as Java applets, ActiveX controls, or Javascript programs.” *Id.* at 53. According to Petitioner, “[s]uch a modification of the teachings in Swimmer would amount to the ‘[s]imple substitution of one known element [i.e., an auditing system tailored to a different kind of mobile code] for another to obtain predictable results.’” *Id.* (citing MPEP § 2143(I), Rationale (B); Ex. 1002 at ¶ 105). According to Petitioner, “[t]his conclusion is reinforced, in the case of Java applets, by the observation that the Java Virtual Machine (JVM), the platform-independent software environment in which Java applets are executed, already included rules intended to prevent an applet from performing malicious operations.” *Id.* at 53–54 (citing Ex. 1002 at ¶ 105).

In response, Patent Owner raises several arguments. First, Patent Owner repeats its previous argument that “Swimmer is not prior art to the ’494 Patent . . . and also teaches away from the invention of the ’494 Patent.” PO Resp. 47. For the reasons previously stated in Section III.B.4.a.i, *supra*, we are persuaded by Petitioner’s evidence that Swimmer is prior art to the ’494 patent and that it does not “teach away” from the claimed inventions. Patent Owner’s arguments here do not persuade us otherwise.

Second, Patent Owner contends that Martin is entirely focused on blocking Java applets and does not address “active control,” as recited in claims 4 and 13, or “program script,” as recited in claims 5 and 14. PO Resp. 48 (citing Ex. 1047, Abstract). Patent Owner argues, “Martin makes this clear by stating: ‘[n]aturally, this strategy cannot block Javascript or ActiveX code.’” *Id.* (quoting Ex. 1047, 12). Thus, Patent Owner contends, “applying Martin to Swimmer would not cure Swimmer’s deficiency because neither solution addresses Downloadables that include ‘active control’ or ‘program script.’” *Id.*

Third, Patent Owner contends that Petitioner provides insufficient motivation to combine Swimmer and Martin. PO Resp. 48–53. Patent Owner contends that Petitioner’s argument regarding motivation to combine “is based on a false premise, namely that ‘Martin expressly discloses blocking Java applets, ActiveX controls, and Javascript programs at a firewall.’” PO Resp. 49 (quoting Pet. 52). Further, Patent Owner contends, Petitioner’s assertion that modifying Swimmer to apply to applets, active controls and script would be simple substitution of one known element for another to obtain predictable results lacks any factual basis and should be rejected. *Id.* (citing Pet. 53). According to Patent Owner, Swimmer is fundamentally different from Martin in that Swimmer’s system is tied to the MS-DOS operating system to perform the emulation of an MS-DOS program and log DOS function numbers, but MS-DOS programs are binary executables not applets, active controls, or program scripts. *Id.* at 50. In fact, Patent Owner contends, MS-DOS only recognizes two program types, .COM and .EXE. *Id.* (citing Ex. 2021, 10). According to Patent Owner, “[d]ue to these fundamental differences, one of skill in the art would

understand that implementing Swimmer’s MS DOS based system at a applet blocking firewall, as taught in Martin would not work, let alone result in the claimed ability to handle a program script (e.g. JavaScript) or active control.” *Id.* at 50–51. Patent Owner further explains that one of skill in the art would also understand that any attempt to adapt Swimmer to handle Javascript would improperly require substantial reconstruction and redesign of the elements shown in Swimmer as well as a change in the basic principle under which Swimmer’s emulator was designed to run. *Id.* at 51. Further, all of Martin’s techniques are focused on blocking “applets” which are requested within HTML code. *Id.* Because Swimmer’s MS-DOS programs are not embedded in web pages nor are they Java classes that contain the signature “CA FE BA BE” for which Martin scans, Patent Owner contends implementing Swimmer in Martin would also improperly change the fundamental strategies in which Martin was designed to function. *Id.* (citing Ex. 1047, 10–12). Patent Owner contends that “[t]hese problems are compounded by Swimmer’s statement that any such firewall would be based on a virtual machine embodiment—not the emulator embodiment that forms the basis for Petitioner’s invalidity theories.” *Id.* at 51–52 (citing Ex. 1006, 13; Pet. 43–44, 46).

In its Reply, Petitioner contends that Patent Owner’s argument that Martin “does not address ‘active control’ . . . or ‘program script’” (PO Resp. 48) “evinces a misunderstanding of Martin’s teachings.” Pet. Reply 19. According to Petitioner, “[w]hile Martin focuses on methods to catch Java applets, Martin teaches that active controls and program script are also potentially dangerous executables that must be blocked.” *Id.* at 20 (citing Ex. 1047, 12 (“Although we are primarily concerned with Java applets, it

should be emphasized that Netscape’s Javascript and Microsoft’s ActiveX . . . deliver the executable in the enabling document proper. . . . [T]hey must be blocked in the enabling document.”)). Petitioner further contends that Patent Owner “cherry-picks a statement from a different one of Martin’s protection strategies, which happens to be an ineffective strategy against Javascript or ActiveX,” and “ignores the full breadth of Martin’s teachings.” *Id.* Thus, Petitioner contends, a person of ordinary skill in the art “would have been motivated to modify Swimmer to detect and scan active controls and program script based on Martin’s teachings regarding the rise of downloadable executables and Martin’s express advice to block ‘Netscape’s Javascript and Microsoft’s ActiveX.’” *Id.* (citing Ex. 1047, 5, 12).

Regarding “motivation to combine,” Petitioner replies that it does not suggest a “literal combination” of Swimmer and Martin, but rather that would have been obvious to a person of ordinary skill in the art implementing Swimmer’s system as a firewall to process applets, active controls, or program scripts, “as taught by Martin, for the reasons Martin expressly identifies.” Pet. Reply 21 (citing Ex. 1002 ¶¶ 104–105). With respect to Patent Owner’s argument that Swimmer teaches use of a firewall only with a virtual machine embodiment, rather than an emulator embodiment, Petitioner further replies that “Swimmer imposes no limitation on which embodiments could be implemented as a firewall,” and that Patent Owner’s argument “hinges on improperly limiting Swimmer’s disclosure to one embodiment.” *Id.* (citing PO Resp. 51–52; Ex. 1006, 13). “Swimmer discloses multiple embodiments,” according to Petitioner, “including an emulator-based VIDES,” and “[a]ccordingly, a [person of ordinary skill in

the art] would not have been discouraged from implementing Martin’s teachings regarding dangerous executables in Swimmer’s VIDES.” *Id.* at 21–22 (citing Ex. 1002 ¶¶ 104–105).

Having considered the parties’ respective arguments and evidence, we are not persuaded that Petitioner has carried its burden to demonstrate that the combination of Swimmer and Martin teaches or suggests the method of claim 1 wherein the Downloadable is an “applet,” as further recited in claim 3, an “active control,” as further recited in claim 4, or “program script,” as further recited in claim 5, or the corresponding limitations in claims 12–14.¹¹

As Petitioner acknowledges (*see* Pet. 52), Swimmer is directed to analysis of MS-DOS executable file types, .COM and .EXE, and does not disclose analysis of applets, active controls, or program script. Ex. 1006, 5. Although, as Petitioner points out, Martin discloses a method for blocking Java applets at a firewall and further suggests that it would be desirable to block ActiveX controls and Javascript (*see* Pet. 52 (citing Ex. 1047, 5, 11–13)), Petitioner does not provide persuasive support for its contention that modification of the teachings in Swimmer to apply to such types of code “would amount to the ‘[s]imple substitution of one known element [i.e., an auditing system tailored to a different kind of mobile code] for another to obtain predictable results’” (*id.* at 53 (modification in original)). Paragraph

¹¹ Petitioner does not allege, and we do not find, that Martin teaches or suggests the “Downloadable scanner” and “database manager” elements that we find to be lacking from Swimmer in our analysis of claim 10 in Section III.B.4.a.iv, *supra*. Accordingly, for the additional reasons set forth in that section, we also are not persuaded that Petitioner has carried its burden with respect to claims 12–14, which each depend from claim 10.

105 of Dr. Rubin's Declaration, the only evidentiary support Petitioner provides for this contention, does no more with respect to this point than state verbatim Petitioner's argument without any indication of the basis for that opinion. See Ex. 1002 ¶ 105 ("Such a modification of the teachings in Swimmer would amount to the '[s]imple substitution of one known element [i.e., an auditing system tailored to a different kind of mobile code] for another to obtain predictable results.'" (modification in original)). See 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

Moreover, although Petitioner contends that it "does not suggest the literal combination of Swimmer and Martin," but rather that "it would have been obvious to a [person of ordinary skill in the art] implementing Swimmer's system as a firewall to process applets, active controls . . . or program scripts . . . , as taught by Martin" (Pet. Reply 21), we understand from both the Petition and Dr. Rubin's Declaration that that such modification would require substitution of Swimmer's auditing system with a different "auditing system tailored to a different kind of mobile code." Pet. 52; Ex. 1002 ¶ 105. Because our determination that Swimmer teaches or suggests the subject matter of claims 1, 2, and 6 is premised on the specific details of the auditing system that Swimmer *actually* discloses, including its recording of DOS function numbers corresponding to suspicious computer operations, we are not persuaded that the result that would be obtained from substituting a different auditing system would still render the subject matter of those claims obvious. We credit Dr. Medvidovic's testimony in this regard that "Swimmer's system is tied to the MS-DOS operating system to

perform the emulation of an MS-DOS program,” and that one of skill in the art would “understand that any attempt to possibly adapt Swimmer to handle JavaScript would require substantial reconstruction and redesign of the elements shown in Swimmer as well as a change in the basic principle under which . . . Swimmer’s emulator was designed to operate.” Ex. 2011 ¶ 155.

As the Supreme Court explained in *KSR*, a claimed invention “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” 550 U.S. at 418. Rather, to prove obviousness, there must have been, at the time of invention, “an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* In this case, we are not persuaded that Petitioner has identified such a reason to combine the Martin’s teachings with those of Swimmer in the fashion required by dependent claims 3–5 and 12–14. The burden to prove the unpatentability of these challenged claims rests with Petitioner, and we conclude for the foregoing reasons that Petitioner has not carried its burden.

5. *Secondary Considerations*

Patent Owner contends that its patented inventions have received “much praise and commercial success,” and that the evidence thereof is sufficient to overcome Petitioner’s obviousness challenge. PO Resp. 54. According to Patent Owner, “[t]he commercial success of the patented inventions disclosed in the ’494 Patent is evidenced through [Patent Owner’s] successful licensing program and the commercial success of the products covered under those licenses, which directly relate to the ’494 Patent.” *Id.* Patent Owner further contends its licensees have touted the benefits of the inventions disclosed in the ’494 patent and obtained

significant sales as a result of products that practice the recitations of the challenged claims. *Id.* at 55. Patent Owner asserts that various licensees have paid millions of dollars for the right to use its patented technology. *Id.* (citing Ex. 2012 ¶¶ 4–10; Exs. 2034–2039). Patent Owner also contends that after the ’494 patent issued, “several licensees entered into licenses agreements, which included a license to the ’494 Patent, to avoid litigation and to obtain a license to continue to make, use, offer to sell, and sell products that embodied the inventions disclosed in the ’494 Patent.” *Id.* “More specifically,” Patent Owner contends, it “has entered into several licenses agreements, which included a license to the ’494 Patent, including agreements with F-Secure, Avast, another confidential licensee, Proofpoint and Websense, all major players that operate in the same space as Petitioner.” *Id.* (citing Ex. 2012 ¶¶ 5–11; Exs. 2040, 2041). According to Patent Owner, Websense and Proofpoint settled during the course of litigation, and the licensees entered into licenses so they could continue selling their products after receiving notice from Patent Owner that their products infringed the ’494 Patent. *Id.* at 55–56 (citing Ex. 2011 ¶¶ 8–10). Patent Owner further provides actual or estimated revenue data for Avast, F-Secure, Websense, and Proofpoint, and contends that “[t]he fact that various companies have taken a license to the ’494 patent is powerful evidence of non-obviousness” and that “a presumption exists that the commercial success of [its] licensees[’] products is due to the patented invention of the ’494 Patent.” *Id.* at 56–60. Consequently, Patent Owner concludes,

the fact that licensees entered into a license agreement, which included a license to the ’494 Patent, to avoid litigation and to continue conducting business, including selling and offering for

sale products that encompass the patented technology licensed from Finjan shows that there is a nexus between these license agreements and the claims of the '494 Patent, and that the '494 Patent is not obvious.

PO Resp. 60.

Patent Owner additionally contends that a “long-felt but unmet need for an invention supports the non-obviousness of the inventions disclosed in the '494 Patent because there was unmet need for a network based system that generated DSP and stored it in a database, such as that disclosed in the '494 Patent.” PO Resp. 61 (citing Ex. 2011 ¶¶ 167–168). According to Patent Owner, “such long-felt need was also not met at the time of the '494 Patent application because if it had then *Swimmer* would not have thought a database system was impractical.” *Id.* Further, Patent Owner contends its “ability to teach a network-based system that stored DSP in a database is indicative of [Patent Owner’s] recognition of the problem and [its] ability to solve that problem.” *Id.*

Patent Owner further contends that, “[b]ased on *Swimmer*, skepticism existed regarding the ability to modify elements of VIDES-known at the time to be useful for evaluating computer viruses.” PO Resp. 61 (citing Ex. 2011 ¶ 169). According to Patent Owner, “[t]he ability to actually create a network based system that derived DSP and stored it in a database yielded unexpected results because *Swimmer* did not believe that such a system was practical,” and “[t]he fact that the inventions disclosed in the '494 [patent] overcame that skepticism and resulted in unexpected result of the patented invention supports the non-obviousness of inventions.” *Id.* at 61–62.

Patent Owner contends “*Swimmer* teaches that a desire existed for practical systems that were not currently available,” and “[a]s such,

Swimmer teaches that others had failed to build a feasible system, demonstrating the non-obviousness of the '494 Patent.” PO Resp. 62. Lastly, Patent Owner contends “[a]s discussed above, *Swimmer* explicitly teaches away from the patented invention of the '494 Patent.” *Id.*

In its Reply, Petitioner asserts that Patent Owner has failed to establish a nexus between the '494 patent and any secondary considerations evidence. Pet. Reply 22. More particularly, notwithstanding Patent Owner's assertion that a presumption of nexus applies, Petitioner argues that “a presumption of nexus only applies if the claimed invention is **coextensive with** the commercially successful product—i.e., ‘**that the successful product is the invention disclosed and claimed in the patent.**’” *Id.* (quoting *GrafTech Int'l Holdings, Inc. v. Laird Techs.*, 652 F. App'x 973, 978–79 (Fed. Cir. June 17, 2016) (emphasis added by Petitioner)). Here, Petitioner contends, “as in *GrafTech*, there is no nexus because there is no evidence that the licensees' products were coextensive with the '494 [patent's] claims, particularly as Finjan attributes identical evidence to multiple patents.” *Id.* at 22–23 (citing *GrafTech*, 652 F. App'x at 978–79; *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006); *Palo Alto Networks, Inc. v. Finjan, Inc.*, Case IPR2015-01974, Paper 22 at 47–49; *Palo Alto Networks, Inc. v. Finjan, Inc.*, Case IPR2015-02001, Paper 19 at 63–65; *Palo Alto Networks, Inc. v. Finjan, Inc.*, Case IPR2015-01979, Paper 22 at 61–64).

Petitioner contends Patent Owner has failed to establish a nexus between its licensing program and the challenged claims, between the alleged commercial success and the challenged claims, or between the alleged praise by others and the challenged claims. *Id.* at 23–25.

First, regarding Patent Owner's licensing program, Petitioner argues Patent Owner "cannot establish a nexus because it failed to disclose the terms of its portfolio licenses covering nearly 50 patents, without allocating royalties by patent, and because [Patent Owner] admits it never licensed the '494 patent alone." Pet. Reply 23 (citing Ex. 1099, 28:18–31:2, 33:11–19, 36:15–37:3, 39:25–40:20). Moreover, Petitioner argues, Patent Owner "did not disclose the amounts paid by licensees, or whether any amounts were greater or less than litigation costs," and its "unsupported assertion that '[v]arious licensees' paid 'millions of dollars' is insufficient to prove nexus." *Id.* Petitioner further cites *In re Antor Media Corp.*, 689 F.3d 1282, 1293–94 (Fed. Cir. 2012), for the proposition that no nexus is established where a patentee "merely lists the licensees and their respective sales revenue" and where the "licenses themselves are not even part of the record." *Id.*

Second, with regard to Patent Owner's alleged commercial success, Petitioner argues Patent Owner "also fails to prove that any alleged commercial success of its licensees' products is attributable to the '494 patent" or "that any licensee's products actually practice the claims." Pet. Reply 24 (citing Ex. 1098, 44:4–45:7, 60:16–61:3; Ex. 1100, 68:22–73:15, 77:24–78:6). Petitioner contends, "[n]o nexus can exist where the product in question 'includes features [] additional to those of the challenged claims'" (*id.* (quoting *Apple, Inc. v. Ameranth, Inc.*, Case CBM2015-00080, slip op. at 39–40 (PTAB Aug. 26, 2016) (Paper 44)) (citing *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994)), and "[b]oth [Patent Owner] and its expert concede that the licensee products include features and elements not claimed by the '494 [patent] and make no attempt to attribute the alleged success to

particular features” (*id.* (citing Ex. 1100, 75:11–16, 82:9–85:1; Ex. 2011 ¶¶ 161–163; PO Resp. 57, 58)).

Third, regarding alleged praise by others, Petitioner argues that the evidence cited by Patent Owner actually shows that many of the cited products include features not covered by the ’494 patent, “a fact that is conceded by [Patent Owner] and clearly shows a lack of ‘commensurate’ scope.” Pet. Reply 25 (citing *Apple v. Ameranth*, slip op. at 48 (finding product praise too broad to tie the products to the claims)).

Lastly, regarding Patent Owner’s contentions of “long-felt need,” “skepticism,” and “failure by others,” Petitioner argues that Patent Owner’s reliance only on general industry statements and the Swimmer reference itself to demonstrate long-felt need is insufficient (Pet. Reply 25 (citing PO Resp. 59; *MotivePower, Inc. v. Cutsforth, Inc.*, Case IPR2013-00274, slip op. at 60–61 (PTAB Sept. 9, 2016) (Paper 44))); and that Dr. Medvidovic’s testimony cited by Patent Owner “provides zero evidence of skepticism by the industry or ‘any objective evidence for his opinion of the state of the conventional thinking in the art’” (*id.* (quoting *Geosys-Intl., Inc. v. Farmers Edge*, Case IPR2015-00711, slip op. at 20–21 (PTAB Aug. 17, 2016) (Paper 34))).

We agree with Petitioner that Patent Owner’s evidence fails to demonstrate a nexus between its license agreements, alleged commercial success, or alleged praise by others and the claimed inventions of the ’494 patent. In particular, Patent Owner fails to show that its licensing program was successful because of the merits of claims 1, 2, and 6 of the ’494 patent, as opposed to, for example, other of the numerous patents in Patent Owner’s licensed portfolio, business decisions to avoid litigation,

prior business relationships, or for other economic reasons. To be accorded substantial weight, there must be a nexus between the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). Nexus is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden of showing that there is a nexus lies with the Patent Owner. *See Paulsen*, 30 F.3d at 1482. Although “there is a presumption of nexus for objective considerations when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘is the invention disclosed and claimed in the patent’” (*WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (quoting *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997))), Patent Owner carries the burden of demonstrating that the “thing . . . that is commercially successful is the invention disclosed and claimed in the patent” (*Demaco*, 851 F.2d at 1392). Moreover, “[w]hen the thing that is commercially successful is not coextensive with the patented invention—for example, if the patented invention is only a component of a commercially successful machine or process—the patentee must show prima facie a legally sufficient relationship between that which is patented and that which is sold.” *Id.* Patent Owner has not made such a showing in this case. For example, as Petitioner points out (*see* Pet. Reply 23), Patent Owner has failed to provide the relevant terms of its license agreements or to allocate royalties by patent, despite that its agreements cover numerous patents. Additionally, we agree with Petitioner that Patent Owner’s reliance on the same evidence and arguments

when asserting secondary considerations for unrelated patents in Cases IPR2015-01979 (concerning U.S. Patent No. 8,141,154 B2) and IPR2015-02001 (concerning U.S. Patent No. 8,225,408 B2), and for a related patent claiming different subject matter in Case IPR2015-01974 (concerning U.S. Patent No. 7,647,633 B2), casts doubt on the existence of any such relationship in this case. In the absence of an established nexus with the claimed invention, secondary consideration factors are not entitled to much, if any, weight and generally have no bearing on the legal issue of obviousness. *See In re Vamco Mach. & Tool, Inc.*, 752 F.2d 1564, 1577 (Fed. Cir. 1985).

We also agree with Petitioner that Patent Owner's evidence does not persuasively establish the existence of a long-felt but unsatisfied need, skepticism by others, or failure by others. Patent Owner's arguments regarding those indicia are based largely on assumptions regarding Swimmer, with which we disagree. For the reasons stated in Section III.B.4.a.i, *supra*, for example, we do not understand Swimmer to have "thought a database system was impractical," but, on the contrary, we conclude that Swimmer taught storage of DSP data in a database. Further, we are not persuaded by Patent Owner's contentions that Swimmer teaches away from the invention of the '494 patent, but we instead conclude that Swimmer teaches or suggests all elements of claims 1, 2, and 6. *See supra* Sections III.B.4.a.i – iii. We determine that our conclusions directly undermine the premises of Patent Owner's arguments in this regard.

6. Conclusions

Patent Owner's weak evidence of secondary considerations in this case does not outweigh Petitioner's strong evidence regarding the teachings

of Swimmer with respect to the subject matter of claims 1, 2, and 6 of the '494 patent. Accordingly, for the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 1, 2, and 6 of the '494 patent would have been obvious to a person of ordinary skill in the art at the time of the invention over Swimmer and that those claims are, therefore, unpatentable. We also conclude, however, that Petitioner has not shown by a preponderance of the evidence that claims 10, 11, and 15 are unpatentable over Swimmer, or that claims 3–5 and 12–14 are unpatentable over the combination of Swimmer and Martin.

C. Patent Owner's Identification of Arguments Allegedly Exceeding Proper Scope of Petitioner's Reply

As authorized by an Order dated December 13, 2016 (Paper 29), Patent Owner filed an “Identification of Arguments Exceeding the Proper Scope of Reply” (Paper 32), identifying, by page and line numbers, nine portions of Petitioner's Reply, as well as nine exhibits submitted with the Reply, that it alleges exceed the proper scope of reply. Petitioner filed a response (Paper 40), in which it identifies, for each portion of the Reply and exhibit identified by Patent Owner, citations to the Petition where it alleges the corresponding arguments previously appeared, citations to the material contained in the Patent Owner Response that it alleges triggered or caused it to include the challenged material in or with the Reply, or both. We have considered the parties' respective submissions in rendering this Final Written Decision, and have accorded Petitioner's Reply appropriate weight in view of Patent Owner's identifications, as indicated in the above discussion and in the following analysis of Patent Owner's Motion to Exclude. *See supra* Section III.B.4, *infra* Section III.D.2.

D. Motions to Exclude

In *inter partes* review proceedings, documents are admitted into evidence subject to an opposing party asserting objections to the evidence and moving to exclude the evidence. 37 C.F.R. § 42.64. The movant has the burden of showing that an objected-to exhibit is not admissible.

37 C.F.R. § 42.20(c).

1. Petitioner's Motion to Exclude

Petitioner moves to exclude paragraphs 159–166 of Dr. Medvidovic's Declaration (Ex. 2011), relating to Patent Owner's licensing activities (*id.* ¶¶ 159–160) and alleged nexus (*id.* ¶¶ 161–166), as containing opinions outside the scope of Dr. Medvidovic's expertise and not based on reliable facts or methods, as well as the following of Patent Owner's exhibits, on the identified bases:

- Exhibit 2016 (Deposition transcript of Dr. Davidson from the Symantec 1892 IPR) – inadmissible hearsay;
- Exhibit 2020 (definition of “log file” from wikipedia.org) – inadmissible hearsay, lack of authentication;
- Exhibit 2022 (definition of “log file” from techterms.com) – inadmissible hearsay, lack of authentication;
- Exhibit 2024 (Declaration of Dr. Medvidovic in support of Patent Owner's opening claim construction brief in the Sophos litigation) – inadmissible hearsay, lack of authentication, unfair prejudice; and
- Exhibit 2025 (Patent Owner's disclosure of asserted claims and infringement contentions from the *Websense* litigation) – inadmissible hearsay, lack of authentication, unfair prejudice.

Paper 31.

Petitioner's Motion to Exclude is dismissed as moot, because the evidence objected to is not relied upon in reaching our conclusions herein.

In that regard, we note that we have in this Decision cited certain arguments of Patent Owner that in turn cite portions Exhibits 2016, 2020, and 2022, relating to whether Swimmer’s audit trail may be termed a “log file.” See *supra* Section III.B.4.a.i. Nonetheless, because we determine that the term “database,” as properly construed, does not categorically exclude “log files” (see *supra* Sections III.A, III.B.4.a.i), our conclusions as to the patentability of the challenged claims do not depend on whether or not we consider those exhibits.

2. Patent Owner’s Motion to Exclude

Patent Owner moves to exclude Swimmer (Ex. 1006), Martin (Ex. 1047), and both declarations of Mr. Hawes (Exs. 1088, 1089), as well as Exhibits 1091 (article titled “A New Toy in the Avast Research Lab”), 1093 (U.S. Patent No. 5,361,359), 1094 (U.S. Patent No. 5,434,562), 1095 (Exhibits 1006, 1007, 1011, and 1037 from the Symantec 1892 IPR), 1096 (Exhibits 1038–1040 from the Symantec 1892 IPR), and 1097 (Exhibits 1041 and 1026 from the Symantec 1892 IPR).¹² Paper 35 (“PO Mot. Excl.”), 2–5, 7–15. Patent Owner additionally moves to exclude portions of the Reply that rely on Exhibits 1092 (Patent Owner’s opening claim construction brief from the *Blue Coat* litigation), 1093–1097, 1098

¹² Patent Owner states in the introductory paragraph of its Motion to Exclude that it “hereby moves to exclude the following exhibits submitted in this proceeding by Petitioner Palo Alto Networks, Inc.: 1092, 1098, 1100, 1095, 1089, 1088, 1089, 1006, and 1047.” PO Mot. Excl. 1. However, subsequent pages of the Motion additionally request exclusion of Exhibits 1091, 1093, and 1094 (*id.* at 4), as well as Exhibits 1096 and 1097 (*id.* at 2). As to Exhibits 1098 and 1100, Patent Owner asserts only that the Board should exclude portions of Petitioner’s Reply relying on those exhibits. *Id.* at 6–7.

(deposition transcript of Dr. Michael T. Goodrich), and 1100 (deposition transcript of Dr. Medvidovic). *Id.* at 4–7. Petitioner filed a Response to Patent Owner’s Motion (Paper 42, “Pet. Opp. Mot. Excl.”), and Patent Owner filed a Reply to Petitioner’s Response (Paper 48, “PO Reply Mot. Excl.”).

As an initial matter, we do not refer to or rely upon Exhibits 1091, 1092, 1095, 1096, and 1097 in reaching our conclusions herein. Accordingly, we dismiss as moot Patent Owner’s Motion to Exclude to the extent it relates to those exhibits.

We address the remaining evidence below.

a. Exhibits 1093 and 1094

Patent Owner seeks to exclude Exhibits 1093 and 1094 as belatedly presented, lacking authentication, and unfairly prejudicial, as well as to exclude associated arguments at pages 9 and 10 of the Reply. PO Mot. Excl. 4–5. Patent Owner also contends Petitioner’s reliance on these “new” exhibits is improper because they are not part of the instituted grounds in this proceeding. *Id.* at 4.

Petitioner responds that Exhibits 1093 and 1094 properly rebut Patent Owner’s characterization of a person of ordinary skill in the art’s understanding of exemplary computer operations recorded by Swimmer (citing PO Resp. 21–22), by “[s]howing that a [person of ordinary skill in the art] already understood some operations, such as file writes or write access, as potentially malicious.” Pet. Opp. Mot. Excl. 3 (citing Pet. Reply 9). Petitioner contends that this argument is not new and causes no prejudice to Patent Owner. *Id.* In particular, according to Petitioner, “Petitioner

previously identified exemplary suspicious operations in its Petition, including write operations.” *Id.* (citing Pet. 45–46).

Patent Owner replies that “Petitioner is **not** utilizing these exhibits to ‘rebut [Patent Owner’s] characterizations,’” but instead “uses them in an attempt to justify Petitioner’s and Dr. Rubin’s reliance on an MS-DOS book ‘to support that Swimmer’s function numbers correspond to computer operations,’” and “[t]his delayed use of evidence has ‘denied [Patent Owner] the opportunity to file responsive evidence’ regarding key evidence to Petitioner’s position and thus should be excluded.” PO Reply Mot. Excl. 1–2 (citing Pet. Reply 9; PO Mot. Excl. 3–4; Pet. Opp. Mot. Excl. 3).

We agree with Petitioner that Exhibits 1093 and 1094, both of which were also identified in Patent Owner’s Identification of Arguments Exceeding the Proper Scope of Reply (*see* Paper 32, 2; *supra* Section III.C), provide evidence of the knowledge of a person of ordinary skill in the art at the time of Swimmer’s publication and are proper reply evidence in light of Patent Owner’s argument that Swimmer does not list “suspicious computer operations” (*see* PO Resp. 21–22).¹³ Further, contrary to Patent Owner’s contentions, we do not find it necessary for Petitioner to “justify [its] and Dr. Rubin’s reliance on an MS-DOS book”—apparently referring to Exhibit 1084, the admissibility of which Patent Owner does not challenge. Swimmer’s disclosure that “*function number* is the number of the DOS

¹³ In this regard, we note that a motion to exclude ordinarily is not the proper mechanism for raising the issue of whether a reply or reply evidence is beyond the proper scope permitted under the rules, as a motion to exclude is for challenging the “admissibility of evidence” under the Federal Rules of Evidence. 37 C.F.R. §§ 42.62, 42.64; Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,758, 48,767 (Aug. 14, 2012).

function requested by the program” (Ex. 1006, 9), taken together with Swimmer’s disclosure that “[a]ll DOS services are provided to application programs via interrupts Primarily, interrupt 0x21 is used” (*id.* at 7), provides sufficient reason, in our view, to turn to Exhibit 1084 to confirm the understanding of a person of ordinary skill in the art as to the meaning of disclosed function numbers.

Accordingly, we deny Patent Owner’s Motion to Exclude to the extent it relates to Exhibits 1093 and 1094.

b. Exhibits 1098 and 1100

Patent Owner contends that Petitioner misrepresents Exhibits 1098 and 1100 in its Reply and that the portions of the Reply relying on those exhibits should be excluded as “improper and not in compliance with the Federal Rules of Evidence.” PO Mot. Excl. 5. In particular, Patent Owner contends that Petitioner cites to Dr. Goodrich’s deposition transcript (Ex. 1098) and Dr. Medvidovic’s deposition transcript (Ex. 1100) “in alleging that ‘[Patent Owner] has not shown that any licensee’s products actually practice the claims’” (PO Mot. Excl. 6 (citing Pet. Reply 24 (citing Ex. 1098, 44:4–45:7, 60:16–61:3; Ex. 1100, 68:22–73:15, 77:24–78:6))), but that “[t]o the contrary, a review of the **entirety** of both transcripts reveals that **both** experts discussed the various licensees’ practice of the patent claims” (*id.* (citing Ex. 1098, 56:24–57:25; Ex. 1100, 77:19–23)). Patent Owner further contends that Petitioner “further misrepresents Dr. Medvidovic’s testimony in asserting that ‘Swimmer’s focus on actions resulting in infection – i.e., suspicious operations – further motivates tuning the emulator to reduce overhead, as suggested by Swimmer” (*id.* at 6–7 (citing Pet. Reply 12))), but that “Dr. Medvidovic neither cites to nor

discusses any supposed ‘actions resulting in infection’ under Swimmer or any ‘motivat[ion] to tun[e] the emulator to reduce overhead’ in the cited portions of his transcript” (*id.* at 7 (citing Ex. 1100, 34:15–35:13, 42:25–46:14)).

Petitioner responds that it “did not misrepresent the testimony contained in Exhibits 1098 and 1100”; that “th[os]e exhibits are relevant and are not prejudicial”; that “[Patent Owner’s] allegation that Dr. Medvidovic does not discuss any motivation to tune the emulator is also directly contradicted by the portion of the transcript Petitioner cites”; and that “[Patent Owner’s] assertions are more properly directed at the sufficiency of these exhibits in supporting Petitioner’s case, and not at their admissibility.” Pet. Resp. Mot. Excl. 8–10.

In its reply brief, Patent Owner repeats its contentions that Petitioner misrepresents the contents of Exhibits 1098 and 1100 and that the portions of Petitioner’s Reply relying on them “should be excluded as having minimal probative value outweighed by prejudice.” PO Reply Mot. Excl. 5.

Having considered the parties’ respective positions, we agree with Petitioner (*see* Pet. Resp. Mot. Excl. 10) that Patent Owner’s arguments for exclusion of Exhibits 1098 and 1100 go to the sufficiency of the evidence—as well as to the weight that should be given to the cross-examination testimony of Dr. Goodrich and Dr. Medvidovic—not to the admissibility of that evidence. As explained in *Laird Technologies Inc. v. GrafTech International Holdings, Inc.*, Case IPR2014-00025 (PTAB Mar. 25, 2015) (Paper 45) (“Laird Techs.”), “[a] motion to exclude . . . is not an appropriate mechanism for challenging the sufficiency of evidence or the proper weight that should be afforded an argument.” Slip op. at 42. Moreover, “[o]ur

general approach for considering challenges to the admissibility of evidence was outlined in *Corning Inc. v. DSM IP Assets B.V.*, Case IPR2013-00053, slip op. at 19 (PTAB May 1, 2014),” which stated that, “similar to a district court in a bench trial, the Board, sitting as a non-jury tribunal with administrative expertise, is well-positioned to determine and assign appropriate weight to evidence presented.” *Id.* (citing *Donnelly Garment Co. v. NLRB*, 123 F.2d 215, 224 (8th Cir. 1941) (“One who is capable of ruling accurately upon the admissibility of evidence is equally capable of sifting it accurately after it has been received”)); *see also Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1221 (Fed. Cir. 2006) (“Vaughan’s challenge goes to the weight of the evidence rather than the admissibility of Lueptow’s testimony and analysis.”). In reaching our decision, we have considered and weighed the testimony provided by Dr. Goodwin and Dr. Medvidovic, as well as Petitioner’s arguments relying on that testimony, in light of Patent Owner’s arguments, but we decline to exclude the cited exhibits or the portions of the Reply citing them. Accordingly, Patent Owner’s Motion to Exclude is denied to the extent it relates to Exhibits 1088 and 1089.

c. Exhibits 1088 and 1089

Patent Owner’s seeks to exclude the Declaration (Ex. 1088) and Supplemental Declaration (Ex. 1089) of Mr. Hawes “because his opinions are conclusory and unreliable.” PO Mot. Excl. 10–12 (citing Fed. R. Evid. 602, 702). According to Patent Owner, Mr. Hawes’s lacks any personal knowledge for the representations made in his declaration regarding the public availability of Swimmer in 1995, and his statements in that regard are based on hearsay. *Id.* at 10. Further, Patent Owner contends, Mr. Hawes’s

declarations should be excluded because his opinions are conclusory, unreliable and lack foundation. *Id.* at 11. Patent Owner also alleges that Mr. Hawes's Supplemental Declaration was untimely filed and constitutes improper reply material, because it includes exhibits that Mr. Hawes confirmed could have been cited in his earlier declaration, and the information in the Supplemental Declaration was contained in some of the same resources relied upon in his earlier declaration. *Id.* at 9–11 (citing Ex. 2045, 34:9–15).

Patent Owner's arguments again concern the weight that we should accord to the evidence, rather than its admissibility, and are not the proper subject of a motion to exclude. Although we recognize that Mr. Hawes did not begin working at Virus Bulletin until 2006 and did not personally attend the 1995 Virus Bulletin Conference (*see* Ex. 2045, 7:8, 13:17–19), we credit his testimony as based on his personal knowledge of Virus Bulletin's regular business practices and his understanding of Virus Bulletin's business records derived from his employment at and role as Chief of Operations at Virus Bulletin (*see id.* at 12:25–13:9; Ex. 1088 ¶¶ 1–5; Ex. 1089 ¶¶ 1–9; *see also* Fed. R. Evid. 803(6) (records kept in the course of regularly conducted business activity not excluded by hearsay rule)). Moreover, we agree with Petitioner that because Mr. Hawes's testimony is based on his perceptions, rather than on any alleged scientific or specialized knowledge, Patent Owner's reliance on Federal Rule of Evidence 702 ("Testimony by Experts") is misplaced. *See* Pet. Opp. Mot. Excl. 10. Accordingly, we deny Patent Owner's Motion to Exclude as it relates to Exhibits 1088 and 1089.

d. Exhibit 1006

Patent Owner seeks to exclude Swimmer (Ex. 1006) on the basis that it is unauthenticated, hearsay, and irrelevant. PO Mot. Excl. 12–13. In particular, Patent Owner contends, Petitioner failed to authenticate Swimmer as a document that was publicly available in 1995, offering no evidence of the publication date of Swimmer beyond the first Hawes Declaration (Ex. 1088), which Patent Owner contends is itself inadmissible. PO Mot. Excl. 12. Patent Owner further contends that the supplemental declarations Petitioner with its Reply to establish Swimmer’s public availability should be excluded because they are belated, irrelevant, and fail to authenticate Swimmer. *Id.* Lastly, Patent Owner contends Petitioner has not established the relevance of Swimmer because it has not shown Swimmer is available as prior art. *Id.* at 13.

Petitioner responds that Patent Owner’s arguments are directed at the sufficiency of Petitioner’s proof and not the admissibility of Swimmer, and, therefore, those arguments should be rejected. Pet. Opp. Mot. Excl. 11. Petitioner further responds that Swimmer was authenticated by its distinctive characteristics, including its title, author information, and header and footer information indicating that it was published in the Virus Bulletin Conference proceedings in September 1995, which have been corroborated and authenticated by the testimony of Mr. Hawes. *Id.* at 11–12 (citing Ex. 1006, 1; Ex. 1088; Ex. 1089; Pet. 6–7; Pet. Reply 3–5). Petitioner contends that Patent Owner “offers no evidence showing Swimmer’s characteristics are untrustworthy, and in light of the authenticating evidence, Swimmer—and the date on its face—should not be excluded.” *Id.* at 12 (citing Fed. R. Evid. 901(b)(1), (b)(4); *Ericsson, Inc. v. Intellectual Ventures I LLC*,

IPR2014-01149, slip op. at 13 (PTAB Dec. 9, 2015) (Paper 68)). Petitioner further contends that, even if the date on Swimmer’s face is hearsay, dates on prior art have been repeatedly admitted by the Board under the residual hearsay exception. *Id.* at 12–13 (citing Fed. R. Evid. 807; *Int’l Bus. Machs. Corp. v. Intellectual Ventures II LLC*, IPR2015-00089, slip op. at 52–56 (PTAB Apr. 25, 2016) (Paper 44); *QSC Audio Prods., LLC v. Crest Audio, Inc.*, IPR2014-00127, slip op. 14–15 (PTAB Apr. 29, 2015) (Paper 43)). Further, Petitioner contends it submitted both Mr. Hawes’s testimony and extensive corroborating evidence regarding Swimmer’s date of public availability. *Id.* at 13. Finally, Petitioner contends that Patent Owner’s arguments that Swimmer is not relevant are based on alleged insufficiency to prove Swimmer’s public accessibility, but that Swimmer is relevant to Petitioner’s invalidity case, and the date on Swimmer is relevant to public availability. *Id.*

In its Reply to Petitioner’s Opposition, Patent Owner repeats its assertion that Mr. Hawes’s declarations should be excluded and further contends that “Petitioner’s arguments all rely on the assumption that Swimmer is prior art, but Petitioner has failed to demonstrate that Swimmer was publicly available” and that “the mere date on a document is **insufficient** to establish its date of public availability.” PO Reply Mot. Excl. 5.

As explained in Section III.B.4.a.i, *supra*, we are persuaded by Mr. Hawes’s testimony that Swimmer was publicly available as of September 1995, more than one year prior to the November 6, 1997, earliest filing date to which we determine the challenged claims to be entitled. *See supra* Section II.C. Accordingly, we conclude that Swimmer is prior art

under 35 U.S.C. § 102(a) and (b), and we are persuaded that Exhibit 1006 has been sufficiently authenticated within the meaning of Federal Rule of Evidence 901. Accordingly, we deny Patent Owner's Motion to Exclude as to Exhibit 1006.

e. Exhibit 1047

Patent Owner seeks to exclude Martin (Ex. 1047) as unauthenticated and irrelevant. PO Mot. Excl. 13–15. We need not reach the merits of Patent Owner's arguments because, as explained above, even if the disputed evidence is considered, Petitioner has not met its burden of showing unpatentability of claims 3–5 and 12–14 over the combination of Swimmer and Martin by a preponderance of the evidence. *See supra* Section III.B.4.b. Accordingly, we dismiss as moot Patent Owner's challenges to the admissibility of Exhibit 1047.

f. Conclusion

For the foregoing reasons, Patent Owner's Motion to Exclude is dismissed as to Exhibits 1047, 1091, 1092, 1095, 1096, and 1097; and denied as to Exhibits 1006, 1088, 1089, 1093, and 1094, and the identified portions of Petitioner's Reply.

E. Patent Owner's Motion for Observations

Patent Owner filed a Motion for Observations regarding the cross-examination of Mr. Hawes, specifically regarding Petitioner's assertion in its Reply that "Swimmer was . . . distributed to 163 attendees." Paper 34 ("Obs."), 1 (citing Pet. Reply 5; Ex. 2045, 22:10–21, 44:21–45:4). Petitioner, in turn, filed a Response to Patent Owner's Observations. Paper 41 ("Obs. Resp."). We have reviewed the identified testimony in light of Patent Owner's observations and Petitioner's responses (Obs. 1; Obs. Resp.

1–5 (citing Ex. 2045, 12:18–13:16, 25:12–26:8, 36:11–37:23, 39:4–41:3)), and have taken into account Mr. Hawes’s admissions (1) that the list of 163 delegates provided as Exhibit B to his Supplemental Declaration indicated people that paid to attend the Virus Bulletin conference, but does not indicate whether any of them actually attended the conference (Ex. 2045, 22:10–21); and (2) that he does not have firsthand knowledge about the percentage of registered attendees versus actual attendees from 1995 until 2006 (*id.* at 44:21–45:4), in assessing the weight to be given to his testimony regarding the number of attendees.

F. Patent Owner’s Motion for Entry of Protective Order and to Seal

Patent Owner filed a Motion for Entry of the Default Protective Order and to Seal Certain Exhibits under 37 C.F.R. §§ 42.14 and 42.54, specifically seeking to seal portions of paragraph 8 of the Supplemental Declaration of Mr. Kim (Ex. 2048; the “Subject Exhibit”). Paper 45. Patent Owner represents that it has met and conferred with Petitioner regarding the scope of the Default Protective Order and that Petitioner does not object to the entry thereof. *Id.* at 3.

There is a strong public policy in favor of making information filed in an *inter partes* review open to the public, especially because the proceeding determines the patentability of claims in an issued patent and, therefore, affects the rights of the public. *See Garmin Int’l, Inc. v. Cuozzo Speed Techs., LLC*, Case IPR2012-00001 (PTAB Mar. 14, 2013) (Paper 34). Under 35 U.S.C. § 316(a)(1) and 37 C.F.R. § 42.14, the default rule is that all papers filed in an *inter partes* review are open and available for access by the public; a party, however, may file a concurrent motion to seal and the information at issue is sealed pending the outcome of the motion. It is,

however, only “confidential information” that is protected from disclosure. 35 U.S.C. § 316(a)(7); see Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760 (Aug. 14, 2012). The standard for granting a motion to seal is “for good cause.” 37 C.F.R. § 42.54(a). The party moving to seal bears the burden of proof in showing entitlement to the requested relief, and must explain why the information sought to be sealed constitutes confidential information. 37 C.F.R. § 42.20(c).

In reviewing the Subject Exhibit, we conclude that it may contain confidential information. Accordingly, we are persuaded that good cause exists to have the identified portions remain under seal, and the Motion for Entry of the Default Protective Order and To Seal is granted.

The Office Patent Trial Practice Guide provides:

Expungement of Confidential Information: Confidential information that is subject to a protective order ordinarily would become public 45 days after denial of a petition to institute a trial or 45 days after final judgment in a trial. There is an expectation that information will be made public where the existence of the information is referred to in a decision to grant or deny a request to institute a review or is identified in a final written decision following a trial. A party seeking to maintain the confidentiality of information, however, may file a motion to expunge the information from the record prior to the information becoming public. § 42.56. The rule balances the needs of the parties to submit confidential information with the public interest in maintaining a complete and understandable file history for public notice purposes. The rule encourages parties to redact sensitive information, where possible, rather than seeking to seal entire documents.

77 Fed. Reg. at 48,766.

Consequently, 45 days from entry of this decision, all information subject to a protective order will be made public by default. In the interim,

Patent Owner may file a motion to expunge any such information that is not relied upon in this Decision. *See* 37 C.F.R. § 42.56.

IV. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, and 6 of the '494 patent are unpatentable under 35 U.S.C. § 103(a) over Swimmer. Petitioner has not demonstrated that claims 10, 11, and 16 are unpatentable over Swimmer or that claims 3–5 and 12–14 are unpatentable over the combination of Swimmer and Martin.

V. ORDER

Accordingly, it is

ORDERED that claims 1, 2, and 6 of the '494 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 3–5 and 10–15 of the '494 patent have not been shown to be unpatentable;

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

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is dismissed-in-part and denied-in-part;

FURTHER ORDERED that Patent Owner's Motion for Entry of the Default Protective Order and To Seal is granted; and

FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2016-00159
Patent 8,677,494 B2

For PETITIONER:

Orion Armon
Christopher Max Colice
Brian Eutermoser
Jennifer Volk-Fortier
COOLEY LLP
oarmon@cooley.com
mcolice@cooley.com
beutermoser@cooley.com
jvolkfortier@cooley.com

Michael T. Rosato
Andrew S. Brown
Neil N. Desai
WILSON SONSINI GOODRICH & ROSATI
mrosato@wsgr.com
asbrown@wsgr.com
ndesai@wsgr.com

For PATENT OWNER:

James Hannah
Jeffrey H. Price
Michael Lee
Shannon Hedvat
KRAMER LEVIN NAFTALIS & FRANKEL LLP
jhannah@kramerlevin.com
jprice@kramerlevin.com
mhlee@kramerlevin.com
shedvat@kramerlevin.com

Michael Kim
FINJAN, INC.
mkim@finjan.com