

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SYMANTEC CORPORATION,
Petitioner,

v.

INTELLECTUAL VENTURES I LLC,
Patent Owner.

Case IPR2016-01433
Patent 7,757,298 B2

Before THOMAS L. GIANNETTI, HYUN J. JUNG, and
GREGG I. ANDERSON, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

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

I. INTRODUCTION

Symantec Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”), requesting institution of an *inter partes* review of claims 1–16 of U.S. Patent No. 7,757,298 B2 (Ex. 1001, “the ’298 patent”). Intellectual Ventures I LLC (“Patent Owner”) filed a Preliminary Response (Paper 5, “Prelim. Resp.”). Upon considering the Petition and the Preliminary Response, we instituted *inter partes* review of claims 1–4, 6–14, and 16 of the ’298 patent. Paper 6 (“Dec. on Inst.”).

After institution, Patent Owner filed a Response (Paper 11, “PO Resp.”), and Petitioner filed a Reply (Paper 16, “Pet. Reply”)¹. Petitioner proffered a Declaration of Jack W. Davidson, Ph.D. (Ex. 1011, “Davidson Declaration” or “Davidson Decl.”) with its Petition, and Patent Owner proffered a Declaration of David M. Goldschlag, Ph.D. (Ex. 2006, “Goldschlag Declaration” or “Goldschlag Decl.”) with its Response. Deposition transcripts for Dr. Goldschlag (Ex. 1035) and Dr. Davidson (Ex. 2010) were filed.

An oral hearing in this proceeding was held on October 12, 2017; a transcript of the hearing is included in the record (Paper 24, “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 1–4, 6–14, and 16 of the ’298 patent are unpatentable.

¹ We granted Petitioner’s unopposed motion to excuse the late filing of its Reply to the Patent Owner Response. Paper 19.

A. Grounds of Unpatentability at Issue

We instituted *inter partes* review on the grounds that, under 35 U.S.C. § 103(a):

(1) claims 1, 3, 6–10, 12, 13, and 16 are unpatentable over De Souza² and Hoffman³,

(2) claims 2 and 11 are unpatentable over De Souza, Hoffman, and Martins⁴,

(3) claims 4 and 14 are unpatentable over De Souza, Hoffman, and Farber⁵,

(4) claims 1–3, 6–11, 13, and 16 are unpatentable over Hyppönen⁶ and Johnson⁷,

(5) claims 4 and 14 are unpatentable over Hyppönen, Johnson, and Farber, and

(6) claim 12 is unpatentable over Hyppönen, Johnson, and Nachenberg⁸. Dec. on Inst. 10, 11–12, 13, 18–19, 20, 28.

B. Related Proceedings

The parties indicate that the '298 patent has been asserted in *Intellectual Ventures I LLC v. HCC Insurance Holdings, Inc.*, Case No. 6:15-cv-00660-JRG (E.D. Tex.); *Intellectual Venture I LLC v. PNC Financial Services Group, Inc.*, Case No. 2:13-cv-00740-AJS (W.D. Pa.);

² U.S. Pat. No. 5,848,418, iss. Dec. 8, 1998 (Ex. 1002).

³ U.S. Pat. No. 6,122,657, iss. Sept. 19, 2000 (Ex. 1005).

⁴ U.S. Pat. No. 5,649,205, iss. July 15, 1997 (Ex. 1010).

⁵ U.S. Pat. No. 5,978,791, iss. Nov. 2, 1999 (Ex. 1009).

⁶ U.S. Pat. No. 6,577,920 B1, iss. June 10, 2003 (Ex. 1003).

⁷ Alan Johnson, *Steganography for DOS Programmers*, Dr. Dobb's J., (1997) (Ex. 1006).

⁸ U.S. Pat. No. 5,696,822, iss. Dec. 9, 1997 (Ex. 1008).

Intellectual Venture I LLC v. PNC Financial Services Group, Inc., Case No. 2:14-cv-00832-AJS (W.D. Pa.); and *Intellectual Venture I LLC v. Erie Indemnity Co.*, Case No. 1:14-cv-00220-MRH (W.D. Pa.). Pet. 1; Paper 4, 1; Paper 12, 1; Exs. 2011–2013.

The '298 patent was also the subject of cases CBM2014-00032 and IPR2014-01516. Pet. 2; Paper 4 at 2.

C. The '298 Patent (Ex. 1001)

The '298 patent relates to “methods and apparatus for identifying and characterizing errant electronic files stored on computer storage devices.” Ex. 1001, 1:29–31. The '298 patent states that when “users upload files that are offensive, illegal, unauthorized, or otherwise undesirable,” storage resources are wasted, and thus, it provides a method “for identifying and characterizing files electronically stored on a computer storage device.” *Id.* at 1:43–46, 2:49–51. Figure 1 of the '298 patent is reproduced below:

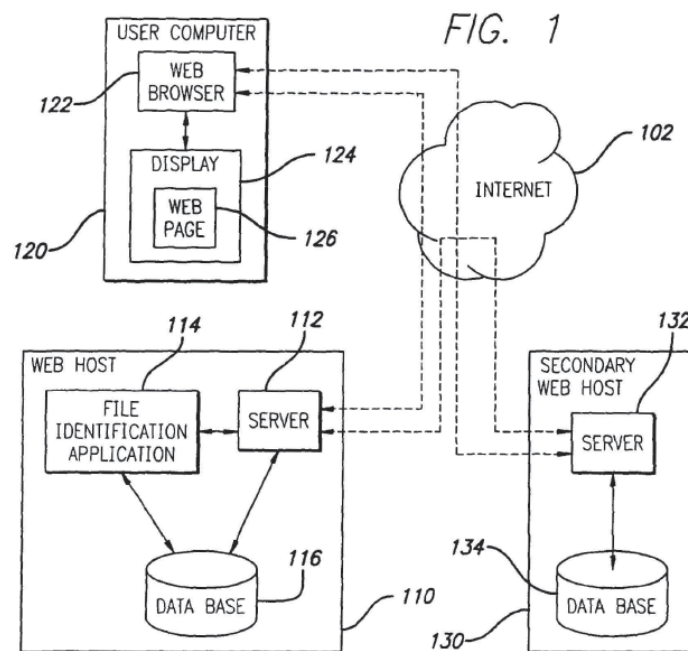


Figure 1 illustrates a wide area network in which a web host delivers web pages to users. *Id.* at 3:9–11, 36–38. User computer 120 communicates

with Web host 110 through Internet 102. *Id.* at 3:41–48. Web host 110 includes server 112 that can access data files stored in database 116, and the data files can be requested, retrieved, and viewed at user computer 120. *Id.* at 3:48–58. Web host 110 further includes file identification application 114 that analyzes data files stored on database 116 and tests various attributes of those files to determine whether they satisfy a particular profile in order to identify suspect files. *Id.* at 4:19–27, 4:48–54, Fig. 2A.

File identification application 114 can review the contents of a file to determine whether the file structure is as expected for a file of the type indicated, and if not, the file can be reported as a suspect file or marked for deletion. *Id.* at 7:4–14, Fig. 2B. File identification application 114 can also determine whether the file contains data extending past an end of data marker because any such additional data may constitute a portion of an illicit file. *Id.* at 7:26–31, Fig. 2B.

After the files within a directory have been reviewed and a list of suspect files generated, file identification application 114 compares a checksum generated from the suspect files to a library of checksum values corresponding to known illicit files. *Id.* at 7:40–45, Fig. 2C. The checksum is a unique number, generated by one of “numerous possible algorithms,” based on a range of bytes in a file. *Id.* at 7:45–47, 9:10–12; Fig. 3.

D. Illustrative Claim

The '298 patent has 16 claims, and of the claims at issue, claims 1, 10, and 16 are independent. Claim 1 is reproduced below:

1. A computer-implemented method for identifying and characterizing stored electronic files, said method comprising:

under control of one or more configured computer systems:

selecting a file from a plurality of files stored in a computer storage medium, wherein selecting the file is performed according to at least one of:

selecting the file based on the size of the file by determining whether an aggregate size of plural identically-sized files exceeds a predetermined threshold;

selecting the file based on whether content of the file matches a file type indicated by a name of the file; or

selecting the file based on whether the file comprises data beyond an end of data marker for the file;

generating an identification value associated with the selected file, wherein the identification value is representative of at least a portion of the content of the selected file;

comparing the generated identification value to one or more identification values associated with one or more of a plurality of unauthorized files; and

characterizing the file as an unauthorized file if the identification value matches one of the plurality of identification values associated with the unauthorized files.

Ex. 1001, 12:21–44.

II. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard).

In the Decision on Institution, we interpreted “portion” as “a subdivision that is less than the whole.” Dec. on Inst. 7 (citing Ex. 2001, 835, 896). Neither party presents post-institution arguments or evidence regarding the term “portion.” See PO Resp. 4–10; Pet. Reply 3–9. Thus,

based on our review of the complete record, we do not perceive any reason or evidence that compels any deviation from our interpretation of “portion.”

Petitioner proposes interpretations for “unauthorized files” and “checksum.” Pet. 12–13. Patent Owner proposes an interpretation for “unauthorized file.” PO Resp. 5–8.

For the term “selecting,” Patent Owner contends that the “ordinary meaning of [‘selecting from a plurality of files’] is apparent on its face” but “‘selecting’ should not be confused with merely identifying the ‘plurality of files’ from which the selection is to be made.” PO Resp. 8–9 (citing Goldschlag Decl. ¶¶ 37, 39). Patent Owner also argues that “selecting a file from a plurality of files” is “**not** satisfied by creating a list of files from which to choose.” *Id.* at 9–10. Petitioner replies that “there is no need for the Board to construe this phrase” and that “[t]here is no dispute that merely ‘creating’ a list of files, by itself, does not necessarily ‘select a file.’” Pet. Reply 7.

For purposes of this Decision, we adopt the parties’ agreed to understanding of “selecting a file from a plurality of files,” as recited by independent claims 1, 10, and 16, to require more than creating a list of files. No further express interpretation of the phrase is necessary for determining whether Petitioner has demonstrated unpatentability of the challenged claims by a preponderance of the evidence. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (construing only those claim terms in controversy and only to the extent necessary to resolve the controversy). Also, we determine that no other claim term requires express interpretation to determine whether Petitioner has proven unpatentability by a preponderance of the evidence. *Id.*

III. OBVIOUSNESS CHALLENGES

To prevail in its challenges, under 35 U.S.C. § 103(a), of (1) claims 1, 3, 6–10, 12, 13, and 16 as unpatentable over De Souza and Hoffman; (2) claims 2 and 11 as unpatentable over De Souza, Hoffman, and Martins; (3) claims 4 and 14 as unpatentable over De Souza, Hoffman, and Farber; (4) claims 1–3, 6–11, 13, and 16 as unpatentable over Hyppönen and Johnson; (5) claims 4 and 14 as unpatentable over Hyppönen, Johnson, and Farber; and (6) claim 12 as unpatentable over Hyppönen, Johnson, and Nachenberg, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a 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 ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1996).

As discussed below, the parties do not present arguments or evidence disputing the level of ordinary skill in the art or present objective evidence of nonobviousness. Instead, the parties’ dispute relates to the scope and content of the prior art and differences between the claimed subject matter and the prior art.

A. Level of Ordinary Skill

Petitioner contends that

A person of ordinary skill in the art . . . would have a Master’s degree in computer science, computer engineering, or a similar field, or a Bachelor’s degree in computer science, computer engineering, or a similar field, with approximately two years of industry experience relating to computer security. Additional graduate education might substitute for experience, while significant experience in the field of computer programming might substitute for formal education.

Pet. 11–12 (citing Davidson Decl. ¶¶ 34–36).

Patent Owner responds that, although it “does not necessarily agree with all aspects of Symantec’s definition, the definition is sufficiently accurate to assess the patentability challenges raised,” and Patent Owner “adopts Symantec’s proposed definition for the purpose of this IPR only.” PO Resp. 3 (citing Goldschlag Decl. ¶ 25); Goldschlag Decl. ¶ 25 (Patent Owner’s declarant stating that “I believe that [Petitioner’s] definition is sufficiently accurate to assess the patentability challenges raised against the ’298 Patent in this IPR” and “for the purpose of my analysis in this IPR only, I have adopted Symantec’s proposed definition of the person of ordinary skill in the art of the ’298 Patent”).

We, therefore, apply Petitioner’s proposed level of ordinary skill in the art, as stated on pages 11–12 of the Petition and quoted above, in analyzing its obviousness challenges.

B. Challenge Based on De Souza and Hoffman

Petitioner contends that claims 1, 3, 6–10, 12, 13, and 16 are rendered obvious by De Souza and Hoffman and supports this contention with citations to De Souza, Hoffman, and the Davidson Declaration (Ex. 1011).

Pet. 6, 16–28. Patent Owner opposes this contention and responds with citations to the same references and the Goldschlag Declaration (Ex. 2006). PO Resp. 11–27.

1. De Souza (Ex. 1002)

De Souza relates to “an apparatus and method for locating and analyzing electronic documents that contain graphic images or objectionable language.” Ex. 1002, 1:9–11. De Souza states that “widespread use of personal computers” and “easy access to computer networks” provide access to “adult subject matter consist[ing] of pornographic literature and photographs, descriptions of violent activities, and potential illegal activities, not to mention the use of offensive language.” *Id.* at 1:15–22.

De Souza’s method “checks each file to determine the file’s real type property” and “looks for files that are disguised, such as a file with an executable suffix (.exe) which in reality is a graphics file that should have had a graphics suffix (like .gif).” *Id.* at 2:1–2, 2:18–21. A “file suffix is typically the last three characters of the file name that come after the final ‘.’” and is “used as a handy way to differentiate between different files and different file formats.” *Id.* at 5:21–27.

The file suffix is read and compared to real type property 616 which “designat[es] the actual type of file found by analyzing the contents of the file.” *Id.* at 3:50–52, 4:14–16, 4:23, 5:19–30, Fig. 2, step 206, Fig. 3, steps 302, 316, 318. The method subsequently decides if each file contains text as well as graphic images or audio clips. *Id.* at 4:3–6, Fig. 2, step 208. If real property type 616 is not equivalent to the claimed type property, then the result type property 620 is set to “questionable” with yellow color code

property 608 or “suspicious” with red color code property 608. *Id.* at 5:42–53, Fig. 4, step 402.

Once all of the files have been checked, a list of the various files is presented on a display for a user to review for subsequent destruction or some other action. *Id.* at 7:20–22. “The files are ordered by their result type property 620 and a color icon is displayed according to the color code property 608 in order to aid the user in distinguishing harmful files from innocuous ones.” *Id.* at 7:23–26.

2. *Hoffman (Ex. 1005)*

Hoffman relates to “methods for speeding up the process of browsing Web content in a computer system.” Ex. 1005, 1:23–25. Hoffman describes a filter module that manages content of Web pages downloaded from the Internet according to user-configurable filter settings. *Id.* at 5:13–17. The filter processes Web browser requests for content. *Id.* at 8:20–32. Hoffman indicates that Cyclic Redundancy Checking (“CRC”) is a “well-known checksum technique.” *Id.* at 27:3–5. Hoffman states that for ads, it “connects to the Web site, grabs the image file from the site, and then proceeds to perform a CRC calculation . . . on the image” and the “calculated CRC value is then compared against a list of image signatures or IDs.” *Id.* at 30:29–35. “If the computer ID is determined to represent a ‘bad’ image . . . the method proceeds to kill the image.” *Id.* at 30:37–41. The filter can also be “configured to kill ads or kill images larger than a preselected image size.” *Id.* at 30:23–24.

3. *Independent Claims 1, 10, and 16*

Petitioner contends that De Souza teaches or suggests the limitations of independent claims 1, 10, and 16. Pet. 18–23 (citing Exs. 1002, 1005,

1006; Davidson Decl. ¶¶ 69–73, 94–115). In particular, for “selecting a file from plurality of files,” Petitioner argues that De Souza teaches a method that locates and “selects particular files that meet certain criteria (*e.g.*, files that have a suffix that does not match the file contents . . .), designates them as questionable/red, suspicious/yellow, or unknown, and includes them in a listing of files presented to a user for further review.” *Id.* at 21 (citing Ex. 1001, 2:24–27, 3:13–4:13, 7:10–13; Davidson Decl. ¶ 105).

Petitioner also argues that “[t]o the extent De Souza does not teach generating the claimed ‘identification value’ for a selected file, this would have been obvious” because it was “commonplace in the prior art” and Hoffman expressly teaches the feature. Pet. 23–24 (citing Exs. 1004, 1005, 1007; Davidson Decl. ¶¶ 52–59, 116–120); *see also id.* at 25 (citing Davidson Decl. ¶ 270).

Petitioner contends that a person of ordinary skill in the art would look to De Souza and Hoffman and asserts that “it would have been obvious that the automated process for inspecting image files using CRCs (*i.e.*, identification values) taught by Hoffman could be applied to the mismatched graphic files identified and selected in De Souza” so as “to reduce or eliminate the need for manual review of graphic files” and “would have merely involved combining well known prior art elements, using well-known computer programming techniques, to achieve a predictable result.” Pet. 17 (citing Davidson Decl. ¶¶ 85–93). Petitioner also asserts that a person of ordinary skill in the art “would have found it obvious to apply Hoffman’s automated checksumming method for inspecting image files to analyze the graphics files selected by De Souza’s system.” Pet. 24 (citing Davidson Decl. ¶¶ 121–125).

Petitioner also argues that a person of ordinary skill in the art “would have understood that, when [Hoffman is] combined with De Souza, the selected graphics file would be characterized as an unauthorized file . . . if its identification value matched an identification value associated with a known unauthorized graphics file.” Pet. 25 (citing Davidson Decl. ¶ 131). Petitioner contends that it would have been obvious to characterize selected graphics files as unauthorized “based on whether their checksums matched one of the checksums associated with unauthorized image files.” *Id.* (citing Davidson Decl. ¶¶ 128, 129, 131, 132).

We determine that the record before us indicates that Petitioner sufficiently demonstrates that its proposed combination of De Souza and Hoffman teaches the limitations of independent claims 1, 10, and 16. Pet. 18–26 (citing Ex. 1002, Abstract, 1:7–13, 1:29–57, 2:1–4, 2:13–14, 2:18–21, 2:24–27, 2:57–4:13, 5:18–6:15, 6:50–61, 7:1–32, Fig. 1; Ex. 1005, Abstract, 3:14–38; 8:1–30:62, Davidson Decl. ¶¶ 52–59, 69–73, 94–104, 106–117). We are persuaded that the portions of De Souza and Hoffman cited by Petitioner teach or suggest the limitations of independent claims 1, 10, and 16. Further, Petitioner provides articulated reasoning with some rational underpinning. Pet. 17, 24, 25 (citing Davidson Decl. ¶¶ 85–93, 121–134, 270). We credit Dr. Davidson’s testimony as to why one of ordinary skill in the art would have combined De Souza and Hoffman.

Patent Owner first responds that Petitioner fails to show that Hoffman teaches characterizing or categorizing a file as an unauthorized file, as required by independent claims 1, 10, and 16. PO Resp. 11–12 (citing Pet. 24–25; Goldschlag Decl. ¶¶ 29, 43). Patent Owner also responds that Petitioner does not rely on “DeSouza or any other reference combined with

Hoffman” to teach characterizing or categorizing a file as an “unauthorized file.” *Id.* at 15 (citing Goldschlag Decl. ¶ 50).

In view of the complete record, Petitioner shows by a preponderance of the evidence that De Souza and Hoffman teach characterizing or categorizing unauthorized files. Petitioner argues that one of ordinary skill in the art “would have found it obvious to apply Hoffman’s automated checksumming method for inspecting image files to analyze the graphics files selected by De Souza’s system” (Pet. 24 (citing Davidson Decl. ¶¶ 121–125)) and “would have understood that, when [Hoffman is] combined with DeSouza, the selected graphics file would be characterized as an unauthorized file . . . if its identification value matched an identification value associated with a known unauthorized graphics file” (*id.* at 25 (citing Davidson Decl. ¶ 131)).

Patent Owner also responds that Petitioner equates the advertising images of Hoffman to the unauthorized files of claims 1, 10, and 16 but that Hoffman’s advertising images are not “stored on a computer without authority or permission from a system administrator.” PO Resp. 12 (citing Pet. 25; Goldschlag Decl. ¶ 46). Patent Owner also contends that “bad” or “unwanted” advertising images are not “unauthorized” files because the ’298 patent distinguishes “undesirable files” from “unauthorized files.” *Id.* at 13 (citing Pet. 25; Ex. 1001, 1:41–56; Davidson Decl. ¶¶ 130–132; Goldschlag Decl. ¶ 47). Patent Owner further contends that the “bad” images of Hoffman “are simply the ones that the end-user . . . prefers not to see” and that “Hoffman’s filtering is based on the user’s personal preferences.” *Id.* at 14–15 (citing Ex. 1005, 2:63–67, 3:51–54, 5:13–17, 30:37–41; Goldschlag

Decl. ¶ 48). Patent Owner asserts that “annoying or undesirable” images are not “unauthorized files.” *Id.* at 15.

Patent Owner’s arguments focus on Hoffman’s filtering of advertising images, which Patent Owner asserts are not “unauthorized images” (PO Resp. 11–15). Petitioner, however, does not equate the advertising images of Hoffman to the unauthorized files of the independent claims, as argued by Patent Owner. Patent Owner’s arguments do not address De Souza’s teachings of a method that locates “electronic documents that contain graphic images or objectionable language” (Ex. 1001, 1:9–11), which Petitioner relies on for the recited “unauthorized file.” *See* Pet. 25 (“POSITA would have understood that when combined with DeSouza, the selected graphics file would be characterized as an unauthorized file (*e.g.*, bad or unwanted image) if its identification value matched an identification value associated with a known unauthorized graphics file.”).

Petitioner’s proposed combination applies “Hoffman’s automated checksumming method for inspecting image files to analyze the graphics files selected by DeSouza’s system” (Pet. 24) so as to result in locating “electronic documents that contain graphic images” such as “pornographic . . . photographs . . . and potential illegal activities,” as disclosed by De Souza (Ex. 1001, 1:9–11, 1:19–21). The record before us indicates that such photographs would be “a file stored on a computer without authority or permission from a system administrator.” Goldschlag Decl. ¶ 21 (“There are several types of files that a system administrator may deem to be unauthorized . . . such as pornographic files.”).

Also, even if we were to accept Patent Owner’s proposed construction of “unauthorized file” as “a file stored on a computer without authority or

permission from a system administrator” (PO Resp. 8), we would find that De Souza teaches that its method locates “electronic documents that contain graphic images or objectionable language” (Ex. 1001, 1:9–11), finds “objectionable material” (*id.* at 1:56), and remedies problems related to “files containing pre-selected objectionable subject matter” (*id.* at 1:46–50) such as “pornographic literature and photographs, descriptions of violent activities, and potential illegal activities” (*id.* at 1:19–21).

Further, Patent Owner states that the “’298 Patent mentions a few types of files that may be stored without authorization or permission from a system administrator, such as files that violate terms of use or copyright laws.” PO Resp. 6–7. Because the full record does not indicate any meaningful difference between “potential illegal activities” (Ex. 1001, 1:19–21) and “files that violate . . . copyright laws” (PO Resp. 6–7), we determine that such potentially illegal activities are “file[s] stored on a computer without authority or permission from a system administrator” (PO Resp. 8). *See also* Goldschlag Decl. ¶ 21 (“There are several types of files that a system administrator may deem to be unauthorized . . . such as . . . files that violate the law.”).

Patent Owner also responds that Petitioner failed to demonstrate that Hoffman teaches comparing an identification value of a selected file with identification values of unauthorized files, as required by the independent claims, because Petitioner fails to show that Hoffman teaches “unauthorized files.” PO Resp. 16. Patent Owner further responds that, even if Hoffman discloses characterizing or categorizing unauthorized files, Petitioner failed to demonstrate that the characterizing includes comparing an identification value of a selected file with identification values of unauthorized files. *Id.*

Patent Owner asserts that Petitioner’s explanation is inadequate. *Id.* at 16–17 (citing Pet. 24–25; Davidson Decl. ¶¶ 128–134).

However, Petitioner argues that one of ordinary skill in the art “would have found it obvious to apply Hoffman’s automated checksumming method for inspecting image files to analyze the graphics files selected by DeSouza’s system.” Pet. 24 (citing Davidson Decl. ¶¶ 121–125). As explained above, the record indicates that Petitioner is relying on De Souza for teaching “unauthorized files,” not Hoffman as asserted by Patent Owner. We are persuaded that Petitioner shows by a preponderance of the evidence that its proposed combination of De Souza and Hoffman teaches comparing an identification value of a selected file with identification values of unauthorized files and that the characterizing includes comparing an identification value of a selected file with identification values of unauthorized files, as required by the independent claims. *See also* Davidson Decl. ¶ 90 (Petitioner’s declarant testifying “it would have been obvious . . . that the automated process for inspecting image files through the use of CRCs . . . taught by Hoffman could be applied to the graphic files identified and selected by De Souza’s system”).

Patent Owner additionally responds that the proposed combination of De Souza and Hoffman does not teach a computer or computer program for performing the “selecting a file” limitation of the independent claims. PO Resp. 17–18. Patent Owner argues that “DeSouza expressly teaches that a **user** . . . selects a file” from a displayed list of files flagged for various reasons. *Id.* at 18–20 (citing Ex. 1002, 1:7–8, 1:56–57, 2:25–27, 5:42–67, 6:1–15, claims 1–20; Goldschlag Decl. ¶¶ 53, 54, 56, 57, 59). Patent Owner also argues that one of ordinary skill in the art would understand that

presenting an itemized list of files is not selecting a file.” *Id.* at 20 (citing Goldschlag Decl. ¶ 57). Patent Owner further argues that De Souza does not suggest a computer selecting a file and does not refer to selecting a file for further processing. *Id.* (citing Ex. 1002, 1:46–49; Goldschlag Decl. ¶ 58).

The record supports Petitioner’s position by a preponderance of the evidence that De Souza “selects particular files that meet certain criteria” – e.g., files that are designated as “questionable/red, suspicious/yellow, or unknown” and “presented to a user for further review.” Pet. 21. We are persuaded that De Souza teaches that a computer or computer program “select[s] a file from a plurality of files,” as recited by independent claims 1, 10, and 16, and the file is selected for further processing. *See* Ex. 1001, 3:9–12 (“Alternate embodiments of computer system 10 may include mainframe computers, or networks of PCs”), 7:20–22 (“Once all of the files have been reviewed, a list of the various files are presented . . . for the user’s review and if necessary, destruction or some other action.”); Goldschlag Decl. ¶ 54 (“In one step in De Souza, files are marked as suspicious, questionable, or okay.”). Petitioner proposes modifying De Souza to include Hoffman’s checksumming method “to reduce or eliminate the need for manual review of graphic files.” Pet. 17.

Also, we find that De Souza teaches selecting files according to a certain criteria, specifically, selecting files that have mismatching real type property 616 and claimed type property 618. Ex. 1002, 5:42–53; *see also* Goldschlag Decl. ¶ 36 (“The verb ‘selecting’ is not a technical term with any special meaning unique to the field of computer security”), ¶ 55 (“De Souza also lists some of the ‘[r]easons as to why the file was flagged.’”). The record persuades us that De Souza, thus, teaches “selecting a file from a

plurality of files,” as required by independent claims 1, 10, and 16. We find that De Souza teaches that, if a file has mismatching real type property 616 and claimed type property 618, the file is presented for user review or some other action. Ex. 1001, 5:42–53, 7:20–22. In other words, the file is selected from a plurality of files based on the mismatching of its properties 616, 618.

Patent Owner argues that De Souza does not meet the “selecting a file” limitation because De Souza describes how the user (and not a computer or computer program) selects from a listing of files that are suspicious or questionable. PO Resp. 18. However, we find that De Souza meets this limitation because, as discussed above, it teaches a prior selecting was accomplished by its method that results in a file being flagged as suspicious or questionable. Ex. 1001, 5:42–53, 7:20–22. Each of the flagged files in the listing has met the mismatching criteria, and each requires user review; however, other files do not meet the mismatching criteria and do not require further user review. *Id.* at 7:20–26. Thus, each file flagged as suspicious or questionable is the result of “selecting a file from a plurality of files,” such that it can be listed and subsequently dealt with by a user.

To further illustrate the point above, we find that De Souza’s method can flag just a single file with mismatching real type property 616 and claimed type property 618 that would be presented to a user for further action. In such a case with only a single file flagged, the method of De Souza would teach a single selection, and the single selected file would not result in “creating a list of files from which to choose” (PO Resp. 8–9) or require any further selection.

Patent Owner asserts that Petitioner relies “entirely on De Souza” for the “selecting a file” limitation, and that Petitioner did not present any evidence or argument that it would have been obvious to modify De Souza so that a computer selects a file. PO Resp. 20–21. Petitioner, however, for the reasons discussed, has sufficiently established that De Souza teaches a computer implemented method that “selects particular files that meet certain criteria.” See Pet. 18–21; Pet. Reply 13. We find that the record shows that De Souza teaches its method of flagging files is implemented on a computer system. Ex. 1001, Abstract, 1:29–57, 2:57–3:12, 3:29–32, 5:61–6:15, 6:50–61, Fig. 1; Davidson Decl. ¶¶ 69–73, 94–103.

Patent Owner further responds that Petitioner’s arguments that De Souza and Hoffman relate to the same systems are conclusory and insufficient to show that one of ordinary skill would have had reason to combine De Souza and Hoffman. PO Resp. 21–22 (citing Pet. 17). Patent Owner asserts that De Souza and Hoffman are concerned with different fields of computer technology. *Id.* at 22–26 (citing Ex. 1002, 1:17–22, 1:31–34, 1:36–46, 3:66–4:3, 5:27–30, 6:1–15, 6:21–25, 6:31–48, Figs. 3–5; Ex. 1005, 1:24–27, 2:51–56, 3:1–2, 5:29–30, 28:51–54, 30:23–25; Davidson Decl. ¶¶ 57, 87; Goldschlag Decl. ¶¶ 62–69).

Petitioner, however, provides persuasive reasons other than De Souza and Hoffman being related to the same systems to show that one of ordinary skill in the art would have combined De Souza and Hoffman. See, e.g., Pet. 17 (arguing “it would have been obvious that the automated process for inspecting image files using CRCs (*i.e.*, identification values) taught by Hoffman could be applied to the mismatched graphic files identified and selected in DeSouza” so as “to reduce or eliminate the need for manual

review of graphic files” and “would have merely involved combining well known prior art elements, using well-known computer programming techniques, to achieve a predictable result”), 24 (arguing that a person of ordinary skill in the art “would have found it obvious to apply Hoffman’s automated checksumming method for inspecting image files to analyze the graphics files selected by DeSouza’s system”).

Patent Owner lastly responds that the “person of ordinary skill in the art would not have expected Hoffman to succeed in automatically identifying the types of files that DeSouza relies on the user to identify,” “would not have believed that Hoffman could successfully replace the human analyst of DeSouza,” and would not incorporate Hoffman’s CRC algorithm into De Souza. PO Resp. 26–27 (citing Goldschlag Decl. ¶¶ 69, 70).

Petitioner argues not only that its proposed combination of De Souza and Hoffman would replace a human analyst, but rather that such combination also would “*reduce . . . the need for manual review of graphic files.*” Pet. 17 (emphasis added); *see also* Pet. Reply 16–17. Petitioner, thus, argues, and the record shows, that applying Hoffman to De Souza would reduce the number of files that must be manually reviewed. The record does not support Patent Owner’s position.

For the reasons above, we determine that Petitioner has shown by a preponderance of the evidence that independent claims 1, 10, and 16 are unpatentable over De Souza and Hoffman.

4. Dependent Claims 3, 6–9, 12, and 13

Petitioner also contends that De Souza and Hoffman teach or suggest the limitations of dependent claims 3, 6–9, 12, and 13. Pet. 22–28 (citing

Exs. 1002, 1003, 1005). Petitioner further provides arguments why the combination would have been obvious. *See id.* (citing Davidson Decl. ¶¶ 53–61, 135–147).

We find that the relied upon portions of De Souza and Hoffman teach the limitations of claims 3, 6–9, 12, and 13. Ex. 1002, 2:24–27, 7:20–32; Ex. 1005, 30:23–46; Davidson Decl. ¶¶ 53–59, 135–137, 140–143. Specifically, we find that Hoffman teaches a method that “undertakes a CRC check of the image” that “connects to the website, grabs the image file from the site, and then proceeds to perform a CRC calculation . . . on the image.” Ex. 1001, 30:29–34. Hoffman, thus, teaches “wherein generating an identification value comprises generating a checksum,” as recited by claims 3 and 13. *See also* Davidson Decl. ¶¶ 57, 59. We also find that Hoffman teaches a “calculated CRC value is then compared against a list of image signatures or IDs” (Ex. 1005, 30:34–35), and therefore, Hoffman teaches “processing a plurality of known unauthorized files to generate the plurality of identification values,” as required by claim 6. We agree with Petitioner that one of ordinary skill in the art “would have understood that, in order to have a list of identification values associated with known bad files, as taught by Hoffman, this list would have necessarily been created by processing these known files to generate their CRC values.” Pet. 26–27 (citing Davidson Decl. ¶ 138).

We further find that De Souza teaches “presenting the identified unauthorized file for human review prior to disposing of it,” as required by claim 7; “automatically notifying a third party that the file has been identified,” as required by claim 8; and “deleting the identified unauthorized file from the computer storage medium,” as required by claim 9. Ex. 1002,

7:20–32 (“a list of the various files are presented . . . for the user’s review and, if necessary, destruction or other action”). *See also* Davidson Decl. ¶ 142 (stating that automatic third party notification was known). As for claim 12, we find that Hoffman teaches its limitation of “selecting the file from a plurality of files stored on the computer storage medium based on size of the file” because Hoffman teaches a Filter module that is “configured to kill ads or kill images larger than a preselected image file.” Ex. 1005, 30:23–24. We also determine that the record adequately supports Petitioner’s asserted reasons for combining De Souza and Hoffman. Davidson Decl. ¶¶ 60–61, 139, 144–147.

Patent Owner does not present arguments specifically for claims 3, 6–9, 12, and 13. *See* Pet. Reply 17–18 (stating “PO does not raise any other arguments concerning any of the challenged dependent claims and therefore, they stand or fall with the independent claims”).

Based on the complete record, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 3, 6–9, 12, and 13 are unpatentable over De Souza and Hoffman.

C. Challenge Based on De Souza, Hoffman, and Martins

Petitioner contends that claims 2 and 11 are rendered obvious by De Souza, Hoffman, and Martins with citations to the asserted references and the Davidson Declaration (Ex. 1011). Pet. 6, 28–30.

1. Martins (Ex. 1010)

Martins relates to “a process of retrieving a list of files, based upon specified search criteria . . . and providing said list to other file processors to act upon selectively.” Ex. 1010, 1:6–10. Martins can “[s]tore a list of retrieved files such that said list can be sorted alphabetically” (*id.* at 2:39–

42), “by file extension then by file name” (*id.* at 6:61), “by other parameters such as file size, date, etc.” (*id.* at 9:32–33), or “in any desired manner” (*id.* at 9:36–37).

2. Claims 2 and 11

Claim 2 depends directly from claim 1, and claim 11 depends directly from independent claim 10. Ex. 1001, 12:45–48, 13:36–39. Claim 2 recites “further comprising selecting the file from one of a plurality of sequentially-ordered files in a directory of the computer storage medium,” and claim 11 recites “wherein the application further comprises the function of selecting the file from one of a plurality of sequentially-ordered files in a directory of the computer storage medium.” *Id.*

Petitioner argues that a person of ordinary skill in the art “would have readily understood that [computer] files would be stored in directories that contained multiple files sequentially ordered in some manner,” as required by dependent claims 2 and 11. Pet. 29 (citing Exs. 1006, 1026; Davidson Decl. ¶¶ 159, 165–167). Petitioner also cites Martins as expressly teaching the feature. *Id.* (citing Ex. 1010; Davidson Decl. ¶¶ 160–164).

Petitioner asserts that a person of ordinary skill in the art “would have been motivated to incorporate Martins’ file retrieval tool in order to search for and select files based on the search criteria taught by DeSouza” and “could then be passed to other programs for further processing, such as the checksumming operations taught by Hoffman.” Pet. 30 (citing Davidson Decl. ¶¶ 149–157). Petitioner also contends that the combination “would have merely involved combining well known prior art elements, using well-known computer programming techniques, to achieve a predictable result.” *Id.* (citing Davidson Decl. ¶ 158).

We find that the relied upon portions of De Souza, Hoffman, and Martins teach the limitations of claims 2 and 11. Ex. 1002, 1:61–64, 3:43–46; Ex. 1006, 3–4; Ex. 1010, Abstract, 2:39–42, 8:38–44, 8:62–64, 9:10–11, 9:24–28, 9:32–44, 6:61–63; Davidson Decl. ¶¶ 159, 160–167. We also determine that the record adequately supports Petitioner’s asserted reasons for combining De Souza, Hoffman, and Martins. Davidson Decl. ¶¶ 149–158.

Patent Owner does not present arguments specifically for claims 2 and 11. Tr. 18 (Patent Owner’s counsel stating that the “parties did not separately argue Martins, Farber or Nachenberg”); *see also* Pet. Reply 17–18 (stating “PO does not raise any other arguments concerning any of the challenged dependent claims and therefore, they stand or fall with the independent claims”).

Based on the complete record, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2 and 11 are unpatentable over De Souza, Hoffman, and Martins.

D. Challenge Based on De Souza, Hoffman, and Farber

Petitioner contends that dependent claims 4 and 14 are rendered obvious by De Souza, Hoffman, and Farber, supporting these contentions with citations to these references and the Davidson Declaration (Ex. 1011). Pet. 7, 30–32.

1. Farber (Ex. 1009)

Farber relates to “data processing systems wherein data items are identified by substantially unique identifiers which depend on all of the data in the data items.” Ex. 1009, 1:14–18. The “terms ‘True Name’, ‘data identity’, and ‘data identifier’ refer to the substantially unique data identifier

for a particular data item.” *Id.* at 6:6–8. “A True Name is computed using a function, MD, which reduces a data block B . . . to a relatively small, fixed size identifier.” *Id.* at 12:55–57. If the data item is a compound data item, the data item is partitioned into segments, and a True Name for each segment can be computed. *Id.* at 14:12–22. Then, Farber can create an indirect block consisting of the computed segment True Names. *Id.* at 14:22–25.

2. Claims 4 and 14

Claim 4 depends indirectly from claim 1, and claim 14 depends indirectly from independent claim 10. Ex. 1001, 12:52–56, 14:8–11. Claim 4 recites “generating an identification value comprises generating a first checksum corresponding to a first portion of said stored file and a second checksum corresponding to a second portion of said stored file,” and claim 14 recites “generating an identification value comprises generating a checksum corresponding to a first portion of the selected file and a second checksum corresponding to a second portion of the selected file.” *Id.*

Petitioner argues that Hoffman teaches calculating a checksum for a selected file so as to compare to a list of checksums. Pet. 31. Petitioner relies on Farber for teaching generating checksums for two portions of a selected file, as required by dependent claims 4 and 14. *Id.* at 31–32 (citing Ex. 1009; Davidson Decl. ¶ 175).

Petitioner contends that a person of ordinary skill in the art would have looked to De Souza, Hoffman, and Farber and would have been motivated “based on express statements in DeSouza and Farber emphasizing the need to protect users and organizations from exposure by identifying and addressing noncompliant or illegal files.” Pet. 30 (citing Exs. 1002, 1009;

Davidson Decl. ¶¶ 169–171). Petitioner also argues that it would have been obvious that “Farber’s technique . . . could be used to generate checksums for the selected graphics files in DeSouza and Hoffman” and “would be readily compatible with the checksum-based methods for analyzing images files taught by Hoffman.” *Id.* at 31 (citing Ex. 1009; Davidson Decl. ¶¶ 55–59, 172, 174). Petitioner contends that its proposed combination “would have involved nothing more than a simple substitution of one well-known checksumming algorithm for another.” *Id.* (citing Davidson Decl. ¶¶ 173–174).

We find that the relied upon portions of De Souza, Hoffman, and Farber teach the limitations of claims 4 and 14. Ex. 1009, 14:13–22; Davidson Decl. ¶ 175. We also determine that the record adequately supports Petitioner’s asserted reasons for combining De Souza, Hoffman, and Farber. Ex. 1002, 1:29–50; Ex. 1009, 6:6–10, 12:55–60, 13:10–14, 32:17–48; Davidson Decl. ¶¶ 55–59, 169–174.

Patent Owner does not present arguments specifically for claims 4 and 14. Tr. 18 (Patent Owner’s counsel stating that the “parties did not separately argue Martins, Farber or Nachenberg”); *see also* Pet. Reply 17–18 (stating “PO does not raise any other arguments concerning any of the challenged dependent claims and therefore, they stand or fall with the independent claims”).

Based on the complete record, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 4 and 14 are unpatentable over De Souza, Hoffman, and Farber.

E. Challenge Based on Hyppönen and Johnson

Petitioner contends that claims 1–3, 6–11, 13, and 16 are rendered obvious by Hyppönen and Johnson with citations to these references and the Davidson Declaration (Ex. 1011). Pet. 7, 32–45.

1. Hyppönen (Ex. 1003)

Hyppönen relates to the “screening of computer data for macro viruses.” Ex. 1003, 1:5–7. “Macros” are “generally small executable programs” to provide, for example, customized menu bars or templates. *Id.* at 1:47–50. Hyppönen provides a macro virus controller associated with a first database containing a set of signatures derived from known macro viruses, a second database containing a set of signatures derived from commercially available macros, and a third database containing a set of signatures derived from macros created and used at the local network level. *Id.* at 4:50–5:11. The macro virus controller analyzes files to determine if those files contain a macro. *Id.* at 5:23–31. If the file contains a macro, the macro virus controller scans its databases to determine if a corresponding signature is in one of the databases, and then displays an alert to indicate a known virus is present in the file or that the detected macro is unknown. *Id.* at 5:32–65.

2. Johnson (Ex. 1006)

Johnson is an article titled “Steganography for DOS Programmer.” Ex. 1006, 1. It states that steganography “is a branch of cryptography that deals with concealing messages.” *Id.* Johnson describes that a text file is a “last-record-check” type of file, because “the last record is a flag or sentinel that marks the end of the file.” *Id.* It also describes appending another file so as to hide a file beyond the end of file flag. *Id.* It provides a program to

scan all the files in a directory for possible hidden data. *Id.* at 3–4 (“Listing Five”).

3. Independent Claims 1, 10, and 16

Petitioner contends that Hyppönen teaches or suggests the limitations of independent claims 1, 10, and 16. Pet. 34–37 (citing Ex. 1003; Davidson Decl. ¶¶ 206–215), 39–42 (citing Ex. 1003; Davidson Decl. ¶¶ 224–226). Petitioner also contends that Johnson, like Hyppönen, teaches or suggests “techniques for identifying and selecting particular files stored on a computer system.” Pet. 37–38 (citing Ex. 1006; Davidson Decl. ¶¶ 216–217). Petitioner further relies on Johnson for teaching or suggesting selecting a file based on whether the file includes data beyond its end of data marker. *Id.* (citing Ex. 1006; Davidson Decl. ¶¶ 218–219); *see also id.* at 32–33 (citing Exs. 1003, 1006, 1018–1020; Davidson Decl. ¶¶ 180–203), 40 (citing Ex. 1006; Davidson Decl. ¶ 222), 42 (citing Davidson Decl. ¶¶ 227, 228).

Petitioner argues that “Hyppönen makes clear that its virus detection techniques can be applied equally to other types of files and viruses” and that it was known that “similar viruses were being written to target and infect text-based files” and “viruses were commonly hidden at the end of text files after an end-of-data marker.” Pet. 33–34 (citing Ex. 1003, 6:1–7; Davidson Decl. ¶¶ 190–202; Ex. 1018, Abstract, 1:39–47; Ex. 1019, 6:40–7:26; Ex. 1020, 17:65–18:2).

Petitioner also argues that a person of ordinary skill in the art would have been motivated “to seek out and incorporate techniques for identifying text files with hidden data beyond the end-of-data marker, such as taught by Johnson” and “to apply the checksumming virus detection methods taught

by Hyppönen to analyze text-based files with hidden data identified by Johnson.” *Id.* at 34 (citing Davidson Decl. ¶¶ 197, 204, 205); *see also id.* at 39 (citing Davidson Decl. ¶¶ 204, 205, 220), Pet. Reply 20 (arguing Hyppönen “does serve as a motivation to incorporate scanning for other virus types such as text file viruses discussed in Kuo”). Petitioner also asserts that its proposed combination “would have involved nothing more than combining well-known prior art elements, using conventional computer programming techniques, to achieve a predictable result.” Pet. 39 (citing Davidson Decl. ¶ 205).

Petitioner does not demonstrate by a preponderance of the evidence that independent claims 1, 10, and 16 are unpatentable over Hyppönen and Johnson. Petitioner does not persuade us that one of ordinary skill in the art would have modified Hyppönen with the teachings of Johnson. We agree with Petitioner that Hyppönen is “generally directed to methods for analyzing files to detect the presence of computer viruses” (Pet. 32 (citing Ex. 1003, Abstract, 1:40–53, 5:27–28)) and that Johnson describes “techniques used to conceal data or information” (Pet. 33 (citing Ex. 1006, 1)). *See also* Ex. 2010, 49:21–23 (Petitioner’s declarant answering “That’s correct” when asked “So Hypponen is about computer virus screening right?”), 55:8 (Petitioner’s declarant answering “Yes, [Johnson] discusses steganography”). However, Petitioner does not persuade us that Hyppönen’s methods for detecting computer viruses would have motivated one of ordinary skill in the art to seek out and incorporate techniques, such as Johnson’s, for finding files with data hidden after an end of data marker. Petitioner provides insufficient reasoning as to why or how a reference

directed at virus detection would motivate a skilled artisan to seek out a reference describing only concealing data.

We also agree with Patent Owner that none of Petitioner's cited references teach or suggest that files with data beyond their end of data marker were known to be susceptible to virus infection. PO Resp. 39–42 (citing Pet. 33, 34; Ex. 1006, 1, 3; Ex. 1019, 2:4–11, 2:15–16, 6:40–7:26; Ex. 1020, 14:7–25; Goldschlag Decl. ¶¶ 94–103; Ex. 2010, 34:10–13, 51:2, 95:6–96:9, 97:8–11, 99:25–100:3). Petitioner cites Exhibits 1018 (“Kuo”), 1019 (“Tate”), and 1020 (“Drake”) as demonstrating that it was well-known that viruses were hidden after an end of data marker. Pet. 33–34.

However, the full record does not support that it was well-known that viruses were hidden after an end of data marker. Kuo merely states that virus creators have targeted text files. Ex. 1018, 1:42–47; Davidson Decl. ¶ 192; Ex. 2010, 68:11–13 (when asked “what is the end of file marker for an ASCII text file,” Petitioner's declarant responding “it is Control Z”), 95:6–96:9 (Petitioner's declarant, when asked “does Kuo describe an example of a computer virus that consists of a text file appended to another text file after the Control Z character?,” answering “No”). Tate describes placing a modified CRC after the end of a file. Ex. 1019, 6:40–7:26; Davidson Decl. ¶ 200; Ex. 2010, 97:8–11 (when asked “would you agree that the CRC that is appended to the end of Tate files is a virus,” Petitioner's declarant answering “No, it is not a virus”). Drake teaches reading past the end of an executable file to verify there is no viral extension. Ex. 1020, 17:65–18:2; Davidson Decl. ¶ 201; Ex. 2010, 99:15–100:3 (when asked “Does Drake describe an example of a computer virus that consists of a text file after . . . a Control Z

character,” Petitioner’s declarant answering “I don’t think he is specifically . . . talking about text files here”).

Also, Dr. Davidson states in paragraph 199 of his declaration that “[v]irus writers have often exploited this behavior by placing virus codes beyond the end of file marker.” However, this statement does not cite to any support, and we cannot find any in the record. Further, Petitioner’s declarant testified that he has not encountered a “computer virus that consists of a text file appended to another text file after a Control Z character.” See Ex. 2010, 100:16–25, 103:19–24.

Thus, in view of the full record, Petitioner does not persuade us that “it was well-known that these viruses were commonly hidden at the end of text files after an end-of-data marker” and that one of ordinary skill in the art “would have been motivated to seek out and incorporate techniques for identifying text files with hidden data beyond the end-of-data marker, such as taught by Johnson.” Pet. 34. Petitioner, therefore, does not demonstrate by a preponderance of the evidence that independent claims 1, 10, and 16 are unpatentable over Hyppönen and Johnson.

4. Dependent Claims 2, 3, 6–9, 11, and 13,

Claims 2, 3, and 6–9 depend directly from claim 1, and claims 11 and 13 depend directly from claim 10. For dependent claims 2 and 11, Petitioner contends that a person of ordinary skill in the art “would have understood that the files being selected in Hyppönen and Johnson were selected from a plurality of files that were sequentially ordered in some manner.” Pet. 42–43 (citing Exs. 1003, 1006, 1010, 1026; Davidson Decl. ¶¶ 230–233). Petitioner also contends that Hyppönen teaches or suggests the limitations of dependent claims 3, 6–8, and 13. Pet. 43–44 (citing Ex. 1003; Davidson

Decl. ¶¶ 234, 235, 237, 238). For dependent claim 9, Petitioner argues that Hyppönen teaches or suggests its subject matter and that a person of ordinary skill in the art would have understood that the “obvious and natural course of action would be to automatically delete the file or provide a user with the option to delete the file.” *Id.* at 44 (citing Exs. 1002, 1005, 1006, 1024; Davidson Decl. ¶¶ 239, 240).

Petitioner’s arguments for its challenges of dependent claims 2, 3, 6–9, 11, and 13 do not cure the deficiencies discussed above for its challenge of independent claims 1 and 10. Therefore, we determine that Petitioner fails to demonstrate by a preponderance of the evidence that claims 2, 3, 6–9, 11, and 13 are unpatentable over Hyppönen and Johnson.

F. Challenge Based on Hyppönen, Johnson, and Farber

Petitioner argues that Hyppönen, Johnson, and Farber render obvious dependent claims 4 and 14 with citations to these references and the Davidson Declaration (Ex. 1001). Pet. 7, 45–46. Farber is discussed above in Section III.D.1.

1. Claims 4 and 14

Petitioner contends that Hyppönen teaches or suggests “techniques for calculating a checksum signature for a selected file and then comparing it to a database of checksum signatures associated with known viruses.” Pet. 45. Petitioner relies on Farber for teaching or suggesting “generating two checksums corresponding to two portions of the file,” as required by claims 4 and 14. Pet. 46 (citing Ex. 1009; Davidson Decl. ¶ 247).

Petitioner argues that a person of ordinary skill in the art “would have understood that Farber’s True Name checksumming techniques could be used to generate the ‘checksum signatures’ taught by Hyppönen” and that

“doing so would have been a simple substitution of one well-known checksumming technique . . . for another.” Pet. 45 (citing Ex. 1009; Davidson Decl. ¶¶ 241–246).

Petitioner’s arguments for its challenges of claims 4 and 14 do not cure the deficiencies discussed above for its challenge based on Hyppönen and Johnson. Therefore, we determine that Petitioner has not shown by a preponderance of the evidence that claims 4 and 14 are unpatentable over Hyppönen, Johnson, and Farber.

G. Challenge Based on Hyppönen, Johnson, and Nachenberg

Petitioner asserts that dependent claim 12 is rendered obvious by Hyppönen, Johnson, and Nachenberg with citations to these references and the Davidson Declaration (Ex. 1011). Pet. 7, 46–47.

1. Nachenberg (Ex. 1008)

Nachenberg describes a polymorphic anti-virus module 200 that detects polymorphic viruses. Ex. 1008, 1:7–9, 2:46–50. Module 200 includes static exclusion module 230 that can access size/type data 226 to eliminate certain polymorphic viruses from consideration, such as by considering the type of target file each known polymorphic virus is designed to attack and the minimum and maximum sizes of the load image of each polymorphic virus. *Id.* at 2:50–55, 5:63–65, 6:25–40. Nachenberg indicates that polymorphic viruses can generate executable images having a range of sizes but that there is a minimum size for the executable image provided by the unencrypted static virus body. *Id.* at 6:55–56.

2. Claim 12

Claim 12 depends directly from independent claim 10 and recites “wherein the application further comprises the function of selecting the file

from a plurality of files stored in the computer storage medium, based on size of the file.” Ex. 1001, 14:1–4. Petitioner relies on Nachenberg for teaching or suggesting the limitations of claim 12. Pet. 46–47 (citing Ex. 1008; Davidson Decl. ¶¶ 254, 255). Petitioner argues that a person of ordinary skill in the art would have been motivated to combine Hyppönen, Johnson, and Nachenberg to incorporate Nachenberg’s teachings to detect additional virus types and “would have merely involved combining well known prior art elements, using well-known computer programming techniques, to achieve a predictable result.” Pet. 47 (citing Exs. 1003, 1008; Davidson Decl. ¶¶ 252, 253, 256, 257).

Petitioner’s arguments for its challenge of claim 12 do not cure the deficiencies discussed above for its challenge based on Hyppönen and Johnson. Therefore, we determine that Petitioner has not shown by a preponderance of the evidence that claim 12 is unpatentable over Hyppönen, Johnson, and Nachenberg.

IV. CONCLUSION

For the foregoing reasons, based on the full record before us, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–4, 6–14, and 16 of the ’298 patent are unpatentable.

V. ORDER

Accordingly, it is:

ORDERED that claims 1–4, 6–14, and 16 of U.S. Patent No. 7,757,298 B2 have been shown, by a preponderance of the evidence, to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, the 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.

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Patent 7,757,298 B2

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