

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ESET, LLC and ESET spol s.r.o.,
Petitioners

v.

FINJAN, Inc.,
Patent Owner

Patent No. 7,975,305
Issue Date: July 5, 2011

Title: METHOD AND SYSTEM FOR ADAPTIVE RULE-BASED
CONTENT SCANNERS FOR DESKTOP COMPUTERS

Inter Partes Review No. 2017-01738

**PETITIONERS' NOTICE OF APPEAL TO THE
U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT**

Pursuant to 35 U.S.C. §§ 141(c), 142, and 319, 37 C.F.R. §§ 90.2(a) and 90.3, and Rule 4(a) of the Federal Rules of Appellate Procedure, Petitioners ESET, LLC and ESET spol s.r.o. hereby appeal to the United States Court of Appeals for the Federal Circuit from the Final Written Decision (Paper 57) entered on January 24, 2019 (attached hereto as Attachment A), and from all underlying orders, decisions, rulings, and opinions adverse to Petitioners related thereto and included therein.

For the limited purpose of providing the Director with the information necessary for making the determination outlined in 37 C.F.R. § 90.2(a)(3)(ii), the issues on appeal include, but are not limited to: determination that Petitioners did not show, by a preponderance of the evidence, that any of Claims 1-25 of U.S. Patent No. 7,975,305 is unpatentable; denial of Petitioners' Motion to Exclude Evidence; repeatedly changing the applicable rules and schedule for this proceeding without due notice or consideration to entertain Patent Owner's dilatory and baseless motions; denial of Petitioners' request to file a sur-sur-reply; *ad hoc* construction of the term "selectively diverting" to improperly import limitations from the specification; adoption by the Board of a "broadest reasonable interpretation" claim construction that is *narrower* than claim constructions urged by Patent Owner in district court litigation; reconstituting the panel handling this proceeding without notice or explanation in violation of 35 U.S.C. § 316(b); any finding or determination

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supporting or relating to these issues; and all other procedural and substantive issues decided adversely to Petitioners in any order, decision, ruling, or opinion by the Board in this proceeding.

Petitioners are concurrently providing a true and correct copy of this Notice of Appeal by mail with the Director of the United States Patent and Trademark Office. Petitioners are also concurrently providing a true and correct copy of this Notice of Appeal, along with the required fees, with the Clerk of the United States Court of Appeals for the Federal Circuit.

Dated: March 25, 2019

/Nicola A. Pisano/
Nicola A. Pisano (Reg. No. 34,408)
FOLEY & LARDNER LLP
3579 Valley Centre Dr., Ste. 300
San Diego, CA 92130
(858) 847-6700

Attorneys for Petitioners
ESET, LLC and ESET spol s.r.o.

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CERTIFICATE OF SERVICE

I hereby certify that the original of this Notice of Appeal was filed via U.S.P.S. Priority Mail Express on March 25, 2019 with the Director of the United States Patent and Trademark Office at the address below:

Director of the U.S. Patent & Trademark Office
c/o Office of the General Counsel
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

A copy of this Notice of Appeal is being filed and served on March 25, 2019 as follows:

To the USPTO Patent Trial and Appeal Board:

Patent Trial and Appeal Board
Madison Building East
600 Dulany Street
Alexandria, VA 22313

(via PTAB E2E – as authorized by the Board)

To the U.S. Court of Appeals for the Federal Circuit:

Clerk of Court
U.S. Court of Appeals for the Federal Circuit
717 Madison Place, N.W.
Washington, DC 20439

(via CM/ECF – with filing fee)

Counsel for Patent Owner Finjan, Inc.:

KRAMER LEVIN NAFTALIS & FRANKEL LLP
James Hannah, Esq.
jhannah@kramerlevin.com

IPR2017-01738
U.S. Patent No. 7,975,305

Jeffrey Price, Esq.
jprice@kramerlevin.com
svdocketing@kramerlevin.com

(via email pursuant to 37 C.F.R. § 42.6(e))

Dated: March 25, 2019

By: /Nicola A. Pisano/
Nicola A. Pisano
Reg. No. 34,408
Counsel for Petitioners

ATTACHMENT A

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ESET, LLC and ESET spol s.r.o.,
Petitioner,

v.

FINJAN, INC,
Patent Owner.

Case IPR2017-01738
Patent 7,975,305 B2

Before THOMAS L. GIANNETTI, PATRICK M. BOUCHER, and
ZHENYU YANG, *Administrative Patent Judges*.

BOUCHER, *Administrative Patent Judge*.

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

In response to a Petition (Paper 2, “Pet.”) filed by ESET, LLC, and ESET spol s.r.o. (collectively, “Petitioner”), we instituted an *inter partes* review of claims 1–25 of U.S. Patent No. 7,975,305 B2 (“the ’305 patent”). Paper 10 (“Dec.”); Paper 19. During the trial, Finjan, Inc. (“Patent Owner”) filed a Response (Paper 31¹, “PO Resp.”) to which Petitioner filed a Reply (Paper 37, “Reply”) and Patent Owner filed a Sur-Reply (Paper 49, “Sur-Reply”).² Both parties filed Motions to Exclude evidence filed by the other side, with subsequent responsive briefing. Papers 46, 47, 51, 52, 54, 55. An oral hearing was held with the parties, and a copy of the transcript was entered into the record. Paper 56 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Based on the record before us, Petitioner has not shown, by a preponderance of the evidence, that any claim of the ’305 patent is unpatentable.

¹ Paper 31 is a redacted version of Patent Owner’s complete Response, filed with restricted access as Paper 30. We do not rely on the redacted portions of the Response in this Decision, and therefore cite to the publicly available version.

² Filing of the Sur-Reply was authorized in accordance with the Board’s 2018 Revised Trial Practice Guide. Paper 44. We denied Petitioner’s request to file a Sur-Sur-Reply because the “filing of a Sur-Sur-Reply is not contemplated by the revisions to the Practice Guide.” Paper 50, 3.

I. BACKGROUND

A. The '305 Patent

1. Disclosure

The '305 patent relates to network security, including scanning of mobile content for exploits through “behavioral analysis,” in which incoming content is analyzed in terms of its programmatic behavior—“[a]s distinct from prior art approaches that search for byte patterns.” Ex. 1001, 1:24–25, 1:64–67. “Exploits” are “[p]ortions of code that are malicious”; the '305 patent provides an example that uses JavaScript to create a window that fills an entire screen, leaving the user unable to access any underlying windows. *Id.* at 5:65–6:3.

Figure 2 of the '305 patent is reproduced below.

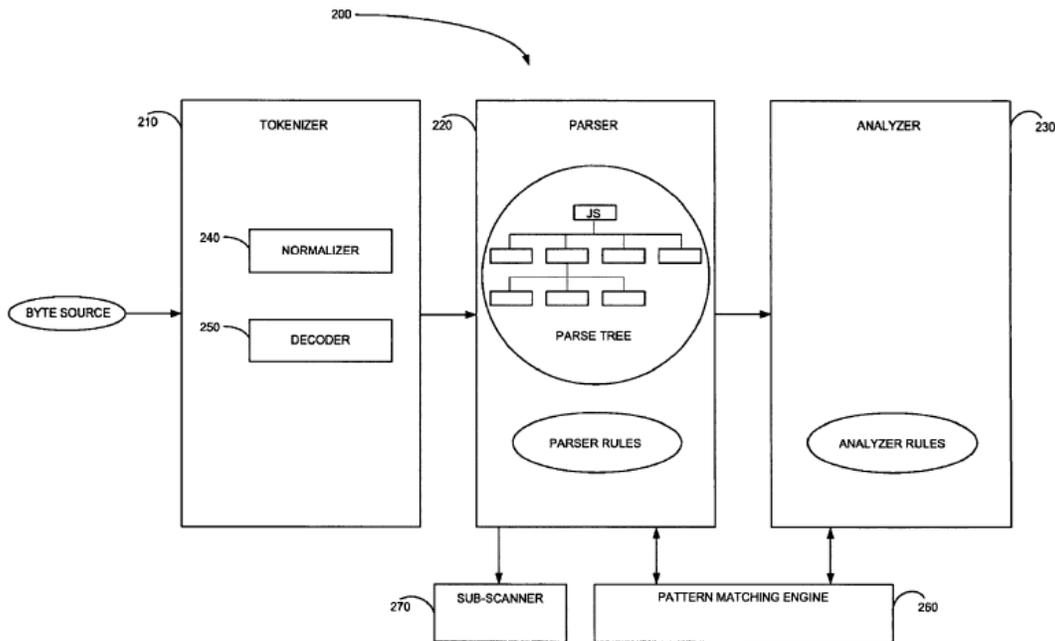


FIG. 2

Figure 2 provides a simplified block diagram of an adaptive rule-based content scanner system, which is “able to adapt itself dynamically to scan a specific type of content, such as inter alia JavaScript, VBScript, URI, URL and HTML.” *Id.* at 6:14–17, 2:10–14. The ’305 patent explains that the adaptive rule-based scanner of Figure 2 “is preferably designed as a generic architecture that is language-independent, and is customized for a specific language through use of a set of language-specific rules.” *Id.* at 8:43–46. In addition, “security violations, referred to as exploits, are described using a generic syntax, which is also language-independent.” *Id.* at 8:54–56.

Adaptive rule-based scanner 200 includes three main components: (1) tokenizer 210, which recognizes and identifies constructs (i.e., “tokens”) within a byte source code; (2) parser 220, which controls the process of scanning incoming content, such as with a parse tree data structure that represents the incoming content; and (3) analyzer 230, which checks for exploits by searching for specific patterns of content that indicate an exploit. *Id.* at 9:9–14, 10:45–55, 2:54–57. Sub-scanner 270 is another adaptive rule-based scanner used to scan a subsection of input being processed by scanner 200. *Id.* at 12:43–44. Pattern matching engine 260 performs pattern matching for both parser 220 and analyzer 230, such as by accepting an input list of regular-expression elements describing a pattern of interest and an input list of nodes from the parse tree to be matched against the pattern of interest, and outputting a Boolean flag indicating whether a pattern is matched. *Id.* at 13:13–29.

Figure 9 of the '408 patent is reproduced below.

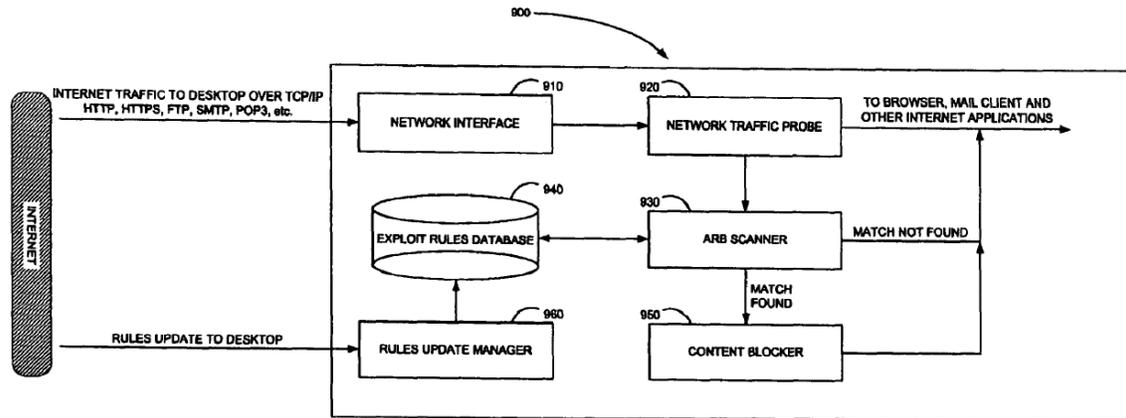


FIG. 9

Figure 9 is a simplified block diagram that illustrates a desktop-computer implementation of an adaptive rule-based content scanner. *Id.* at 19:26–30. Network interface 910 receives TCP/IP content from the Internet, and network traffic probe 920 passes incoming traffic to its destination, such as to a browser, email client, or other Internet application. *Id.* at 19:30–38. Network traffic probe 920 also “selectively diverts” incoming network traffic to adaptive rule-based scanner 930, which scans and analyzes content to detect the presence of exploits. *Id.* at 19:38–42. In the context of Figure 1 (not reproduced here), the Specification of the '305 patent explains that a pre-scanner uses “conventional signature technology” to scan content, and can thereby “quickly determine if content is innocuous, but over-blocks on the safe side.” *Id.* at 8:5–8. The pre-scanner, thus, is “useful for recognizing content that poses no security threat,” with the adaptive rule-based scanner “perform[ing] much more intensive processing” for “further diagnosis” on content that is “potentially malicious.” *Id.* at 8:9–21.

According to the '305 patent, “[i]t is expected that pre-scanner 150 filters 90% of incoming content, and that only 10% of the content requires extensive scanning by [the adaptive rule-based scanner].” *Id.* at 8:23–25.

Database 940 is maintained with coded exploit rules “in the form of deterministic or non-deterministic finite automata, which perform pattern matches appropriate to exploits under consideration.” *Id.* at 19:42–46. If adaptive rule-based scanner 930 does not detect a match with a potential exploit, the content is routed to its destination. *Id.* at 19:46–48. Conversely, if adaptive rule-based scanner detects the presence of potential exploits, the suspicious content is passed to content blocker 950, which removes or inoculates the content. *Id.* at 19:48–51. Rules update manager 960 periodically receives modified and new rules over the Internet, and updates database 940 to keep database 940 current. *Id.* at 19:52–55.

2. *Illustrative Claim*

Independent claim 1 of the '305 patent, reproduced below, recites a “security system for scanning content within a computer,” and is illustrative of the claims at issue, with independent claims 13 and 25 respectively reciting corresponding methods and computer-readable storage media. *See* Pet. 6–11 (tables provided by Petitioner illustrating correspondence of limitations in these claims).

1. A security system for scanning content within a computer, comprising:

a network interface, housed within a computer, for receiving incoming content from the Internet on its destination to an Internet application running on the computer;

a database of parser and analyzer rules corresponding to computer exploits, stored within the computer, computer exploits being portions of program code that are malicious, wherein the parser and analyzer rules describe computer exploits as patterns of types of tokens, tokens being program code constructs, and types of tokens comprising a punctuation type, an identifier type and a function type;

a rule-based content scanner that communicates with said database of parser and analyzer rules, operatively coupled with said network interface, for scanning incoming content received by said network interface to recognize the presence of potential computer exploits therewithin;

a network traffic probe, operatively coupled to said network interface and to said rule-based content scanner, for selectively diverting incoming content from its intended destination to said rule-based content scanner; and

a rule update manager that communicates with said database of parser and analyzer rules, for updating said database of parser and analyzer rules periodically to incorporate new parser and analyzer rules that are made available.

Ex. 1001, 29:44–30:47.

B. Evidence

Petitioner relies on the following references.

Chandnani	US 7,636,945 B2	Dec. 22, 2009	Ex. 1013
Freund	US 5,987,611	Nov. 16, 1999	Ex. 1014

In addition, Petitioner provides Declarations by Eugene H. Spafford, Ph.D. Exs. 1006, 1032. Dr. Spafford was cross-examined by Patent Owner, and a transcript of his deposition entered into the record. Ex. 2011. Patent Owner provides Declarations of Nenad Medvidovic, Ph.D., and Phil Hartstein. Exs. 2008, 2012. Dr. Medvidovic and Mr. Hartstein were cross-examined by Petitioner, and transcripts of their depositions entered into the record. Exs. 1033, 1034.

C. Instituted Grounds of Unpatentability

The Petition challenges claims 1–25 over Chandnani alone and over Freund in combination with Chandnani. Pet. 18–62. In the Institution Decision, we identified an inconsistency in the Petition’s presentation “in that it characterizes all of its challenges over Chandnani alone as anticipation challenges . . . but presents arguments that are clearly directed to obviousness challenges for claims 4–12 and 16–24.” Dec. 8 (citing Pet. 18, 37–41). For example, in addressing claims 4 and 16, the Petition asserts that a modification to Chandnani “would have been obvious or obvious to try,” and similar assertions are made with respect to claims 5–12 and 17–24. Pet. 37, 39 (“a person of ordinary skill would have found it obvious . . .”), 40 (same). In the Institution Decision, we found Petitioner’s intent sufficiently clear, and treated the challenges to claims 4–12 and 16–24 as obviousness challenges over Chandnani alone. Dec. 8.

With respect to those challenges, Patent Owner argues that “the Supreme Court foreclosed the type of flexibility exercised by the Board in its Institution Decision.” PO Resp. 27 (citing *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“Nothing suggests the Director enjoys a license to depart from the petition and institute a *different* inter partes review of his own design.”)). We do not reach this argument. As we explain below, we find that Chandnani does not disclose a key limitation of the independent claims, so that the Chandnani-based challenges of claims 4–12 and 16–24 fail regardless of whether they are treated as anticipation or obviousness challenges.

Our original Institution Decision denied institution of the challenge to claims 1–25 for obviousness over the combination of Freund and Chandnani because “Freund was considered extensively by the Office during prosecution, including no fewer than five Office Actions in which the Examiner and Applicant negotiated the scope of the claims in light of the teachings of Freund.” Dec. 25. In light of *SAS Institute*’s holding that a final written decision under 35 U.S.C. § 318(a) must decide the patentability of all claims challenged in a petition for *inter partes* review, we notified the parties that “we modify our Institution Decision to institute on all of the challenged claims and all of the grounds presented in the Petition.” Paper 19, 2.

Patent Owner contested that decision, requesting, in part, “that the proceedings be terminated pursuant to 35 U.S.C. § 325(d) because as

recognized in the Original Institution Decision and the Modified Institution Decision, the Petition presented “the same or substantially the same prior art or arguments previously were presented to the Office.” Paper 21, 10 (citing Dec. 25–26; Paper 19, 3). We denied that request because “we have been instructed that the Office SAS Guidance is to be interpreted with the weight of Office policy as precluding termination of a partially instituted proceeding in response to *SAS Institute*.” Paper 28, 10. Accordingly, we address the combination of Freund and Chandnani below.

D. Real Parties in Interest and Related Proceedings

The parties identify only themselves as real parties in interest. Pet. 1; Paper 3, 1.

The ’305 patent is asserted by Patent Owner against Petitioner in Civil Action No. 3:17-cv-00183-CAB-BGS (S.D. Cal.). Pet. 1; Paper 3, 1.

The ’305 patent is also the subject of Reexamination Control No. 90/013,660, and the Board’s decision holding claims 1, 2, 5, and 13 unpatentable is currently on appeal to the Federal Circuit. Pet. 1; Paper 3, 1; *Ex parte Finjan, Inc.*, Appeal No. 2017-010477 (PTAB July 2, 2018).

II. MOTIONS

A. Motion for Entry of Default Protective Order and to Seal

Patent Owner moves (1) for entry of the Board’s Default Protective Order, filed by Patent Owner as Exhibit 2026, and (2) to seal portions of its

Response and portions of Mr. Hartstein’s Declaration, filed as Exhibit 2012. Paper 32, 1. The Motion asserts that portions of these documents “[c]ontain[] highly confidential information regarding licensing practices.” *Id.* In particular, Patent Owner asserts that “information regarding certain licenses, and the development efforts and strategies at Finjan, would allow competitors to access information that would significantly harm Finjan’s competitive position in the marketplace.” *Id.* at 3.

Petitioner has not opposed the Motion. Patent Owner indicates that it “conferred with Petitioner regarding the scope of the Default Protective Order,” and that “Petitioner does not object to entry of the Default Protective Order.” *Id.* at 4.

Except as ordered otherwise, proceedings before the Board are available to the public. The Board’s standards for granting motions to seal are discussed in *Garmin International v. Cuozzo Speed Technologies, LLC*, Case IPR2012-00001, slip op. (PTAB March 14, 2013) (Paper 34). In summary, there is a strong public policy for making all information covered in *inter partes* review proceedings open to the public. The standard for granting a motion to seal is “good cause.” 37 C.F.R. § 42.54. The moving party bears the burden of showing that the relief requested should be granted. 37 C.F.R. § 42.20(c). This includes showing that the information is truly confidential, and that such confidentiality outweighs the strong public interest in having an open record. A motion to seal is required to include a certification that the moving party has in good faith conferred, or

attempted to confer, with the opposing party in an effort to come to an agreement on the scope of the protection sought. *Garmin* at 3.

Patent Owner makes a sufficient showing with respect to each of these factors, and the amount of information sought to be sealed is appropriately limited. We accordingly grant the motion.

B. Petitioner’s Motion to Exclude Evidence

Petitioner filed a Motion to Exclude Exhibits 2008–2010 and 2012–2025, as well as “those portions of the Patent Owner’s Response (Paper 30) that rely on the foregoing exhibits.” Paper 46, 1. These include the Declarations of Dr. Medvidovic and Mr. Hartstein. Exs. 2008, 2012. With respect to these Declarations, Petitioner agreed at the oral hearing that, rather than arguing to exclude the testimony, it should “really be arguing for limited weight.” Tr. 37:25–38:5. We consider the motion in that context.³

³ The objections underlying Petitioner’s Motion to Exclude Evidence were not timely filed. 37 C.F.R. § 42.64(b)(1) (requiring filing of an objection “within five business days of service of evidence to which the objection is directed”); *see* Paper 46, 2 n.1 (acknowledging filing of objections after more than five business days). Petitioner provides no legal support for its contention that service by Patent Owner late in the day “result[s] in de facto service” on the next day. *See* Paper 46, 2 n.1. Petitioner alternatively contends that it should be accorded a one-day extension “[a]s an accommodation” because it agreed to a one-day extension for the filing of Patent Owner’s Response. *Id.*; *see* Tr. 39:6–40:2. Although we encourage reciprocal courtesy among parties, we are not in a position to police the granting of such courtesy, particularly after the fact. Nevertheless, in the interest of a complete record, we address the merits of Petitioner’s Motion.

First, with respect to Dr. Medvidovic's Declaration, Petitioner contends that Dr. Medvidovic "lacks the knowledge and experience necessary" to provide testimony regarding "how Chandnani and Freund would have been understood by a person of ordinary skill in the art in August 2004, when the application that matured as the '305 patent was filed." Paper 46, 2–3. According to Petitioner, Dr. Medvidovic's experience after the 2004 filing date is "irrelevant." *Id.* at 3–5 (Petitioner highlighting that "[o]nly two of his graduated PhD students did so before 2004," that no conferences chaired or co-chaired by Dr. Medvidovic were prior to 2004, that Dr. Medvidovic edited only one journal prior to August 2004, that several books edited by Dr. Medvidovic are dated after August 2004, and discounting work performed in 2013–2015).

We disagree with such a characterization. Experience obtained after a certain date may still usefully inform what a person of skill in the art would have understood as of that date, and we discern insufficient reason to discount it. *See T. Rowe Price Investment Servs., Inc. v. Secure Access, LLC*, Case CBM2015-00027, slip op. at 21–22 (PTAB June 13, 2016) (Paper 31) ("In holding that, to testify as an expert under FRE 702, one must be qualified as an expert in the pertinent art, the Federal Circuit has not placed temporal restrictions, such as requiring an expert be qualified in the pertinent art at the time of the invention") (citing *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008)); *U.S. Endoscopy Group, Inc. v. CDX Diagnostics, Inc.*, Case IPR2014-00639, slip op. at 18

(PTAB Sept. 14, 2015) (Paper 27) (“A witness must provide testimony about the level of skill in the art as of the critical date; however, the witness need not have acquired that knowledge as of the critical date.”).

Petitioner also attacks the pertinence of Dr. Medvidovic’s experience as insufficiently related to anti-virus or malware work. *Id.* But as Patent Owner emphasizes, Dr. Medvidovic has significant relevant experience that includes tenured university positions, a position as Editor-in-Chief of *IEEE Transactions on Software Engineering*, the supervision of seventeen graduated doctoral students in the field of computer science, and the publication of numerous refereed journal articles and book chapters in the field of computer science. Ex. 2028, 5–63; Paper 52, 4–6. In addition, “Dr. Medvidovic has been qualified as an expert in many district court litigations concerning [Patent Owner’s] patents, including the ‘305 Patent.” Paper 52, 5–6 (citing *Finjan, Inc. v. Blue Coat Systems LLC*, Case No. 5-15-cv-03295, Dkt. No. 505 at 898:20–25 (N.D. Cal.); *Finjan, Inc. v. Sophos, Inc.*, Case No. 3-14-cv-01197, Dkt. No. 364 at 760:12–15 (N.D. Cal.)).

According to Petitioner, Dr. Medvidovic “also demonstrated that his opinions are unreliable by relying on hearsay third-party webpages from 2016.” Paper 46, 5. But expert witnesses are permitted to rely on hearsay and other forms of inadmissible evidence “[i]f experts in the field would reasonably rely on those kinds of facts or data in forming an opinion on the subject.” Fed. R. Evid. 703.

We discern insufficient compelling reasons presented by Petitioner not to accord due weight to the testimony of Dr. Medvidovic, and accordingly deny the motion in this respect.

Second, with respect to Mr. Hartstein's Declaration and various exhibits identified by Petitioner, we do not rely on such evidence in our analysis. Petitioner's Motion is therefore moot with respect to such evidence.

C. Patent Owner's Motion to Exclude Evidence

Patent Owner moves to exclude the Declarations of Dr. Spafford (Exs. 1006, 1032) and the deposition testimony of its own declarants (Exs. 1033, 1034). Paper 47, 1. Patent Owner's Motion is grounded in its contention that "Petitioner's Reply improperly introduced new arguments, including new bases of invalidity, and evidence that are inadmissible under 37 C.F.R. § 42.61 and are properly subject to exclusion." *Id.* (citing *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1081 (Fed. Cir. 2015)). In addition, Patent Owner contends that Dr. Spafford's Declarations "should similarly be excluded because his opinions are conclusory, unreliable and could have been submitted earlier with its Petition." *Id.* at 5. Accordingly, "Patent Owner respectfully requests the Board exclude and not consider new evidence introduced in the Reply because it was available at the time that Petitioner filed its Petition." *Id.* (citing Office Patent Trial Practice Guide,

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77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012); *Scotts Co. v. Encap LLC*, Case IPR2013-00110, slip op. at 5–6 (PTAB June 24, 2014) (Paper 79)).

We exercise our discretion and decline to exclude either the Reply or the evidence identified by Petitioner. Those materials include relevant argument and evidence that bear on other issues in the proceeding. Nevertheless, because we agree with Patent Owner that new arguments are introduced with respect to the combination of Freund and Chandnani, we limit our consideration of those materials as we discuss more fully in our analysis below. We are also insufficiently persuaded by Patent Owner’s arguments that we should exclude the deposition testimony of its own declarants. *See* Paper 47, 7 (arguing Petitioner’s reliance on deposition transcripts is “misleading and confusing,” “taken out of context,” “inadmissible under FRE 402 and 403,” and “unfairly prejudicial”). Patent Owner was afforded adequate opportunity to place its declarants’ cross-examination testimony in context during the proceeding, including through redirect examination and its authorized filing of a Sur-Reply.

III. ANALYSIS

A. *Legal Principles*

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir.

2001). While the elements must be arranged in the same way as is recited in the claim, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990). Identity of terminology between the anticipatory prior art reference and the claim is not required. Prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.3d 559, 562 (CCPA 1978)).

A claim is unpatentable for obviousness 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) when in evidence, objective indicia of non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness”)); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

To prevail on its challenges, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the 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”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner does not 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).

B. Level of Skill in the Art

Neither party articulates a proposed level of skill in the art in its papers, but their respective experts address the issue. Ex. 1006 ¶¶ 20–21;

Ex. 2008 ¶¶ 34–39. Petitioner’s expert, Dr. Spafford, asserts that a person of ordinary skill in the art “would have been a person having at least a bachelor-level degree in computer science and three years of experience in the design and development of computer security/anti-virus software, or a person with a Ph.D. in computer science and two-three years’ involvement in academic research relating to computer virus detection and computer security.” Ex. 1006 ¶ 20. Patent Owner’s expert, Dr. Medvidovic, asserts that such a person “would be someone with a bachelor’s degree in computer science or 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. 2008 ¶ 36.

Our analysis does not depend on nuanced distinctions in the level of skill in the art, and we find the articulations by the two experts to be generally similar. Moreover, Dr. Medvidovic specifically testifies that his opinions “would be the same if rendered from the perspective of a person of ordinary skill in the art set out by Dr. Spafford.” *Id.* ¶ 39. Accordingly, we adopt the level of skill asserted by Dr. Spafford. We would, however, reach the same result under either formulation.

C. Claim Construction

In an *inter partes* review proceeding based on a petition filed prior to November 13, 2018, the Board interprets claims of an unexpired patent using the broadest reasonable construction in light of the specification of the

patent in which they appear. *See* 37 C.F.R. § 42.100(b) (2016); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under the broadest reasonable interpretation standard, claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. Previously Construed Terms

Each of independent claims 1, 13, and 25 recites “a database of parser and analyzer rules corresponding to computer exploits, . . . wherein the parser and analyzer rules describe computer exploits as patterns of types of tokens, tokens being program code constructs, and types of tokens comprising a punctuation type, an identifier type and a function type.” Ex. 1001, 29:49–56, 31:19–26, 32:28–35. In the Institution Decision, we provided preliminary constructions of the following terms that appear within this recitation:

Term	Construction
“database”	a collection of interrelated data organized according to a database schema to serve one or more applications
“parser rules”	patterns of tokens that form syntactical constructs of program code
“analyzer rules”	patterns of tokens that correspond to potential exploits
“function type”	a form of keyword token that represents a function

The parties do not dispute these constructions, and we adopt them for this Decision. *See, e.g.*, Tr. 8:25–9:1 (Petitioner stating “we believe they are correct”); PO Resp. 14 (“Patent Owner applies these constructions herein”).

2. “*selectively diverting*”

Independent claim 1 recites “selectively diverting incoming content from its intended destination to said rule-based content scanner,” and claims 13 and 25 similarly recite “selectively diverting . . . the received incoming content from its intended destination.” Ex. 1001, 29:65–66, 31:16–17, 32:25–26. Patent Owner proposes that “the term ‘selectively diverting incoming content from its intended destination to said rule-based content scanner’ means ‘making a choice between sending the incoming content to the intended destination and the scanner’ and requires that at least some incoming content will reach its intended destination without being diverted to the rule-based content scanner.”⁴ PO Resp. 20–21. Patent Owner makes several points in support of its proposed construction, relying on the plain and ordinary language of the claim, related written description in the ’305 patent, and testimony of its expert, Dr. Medvidovic. *Id.* at 15–21. In addition, Patent Owner contends that Petitioner’s declarant, Dr. Spafford,

⁴ Petitioner alleges that Dr. Medvidovic “offer[s] three conflicting definitions.” Reply 6. Although we recognize the variations in testimony identified by Petitioner, we understand Patent Owner’s position to be that advocated in its Response, and Dr. Medvidovic’s testimony is helpful in evaluating that position.

“agreed with Patent Owner’s proposed construction of the term” on cross-examination. *Id.* at 16. Petitioner does not propose an alternative construction for us to consider, but disputes aspects of Patent Owner’s reasoning. *See* Reply 6–8.⁵

In construing the phrase, our analysis addresses (1) the claim language itself, (2) the written description of the patent, and (3) the testimony of the parties’ experts. First, with respect to the claim language, independent claim 1 specifically recites “receiving incoming content from the Internet *on its destination to an Internet application running on the computer.*” Ex. 1001, 29:46–48 (emphasis added). Independent claims 13 and 25 similarly recite receiving content from the Internet “on its destination to an Internet application.” *Id.* at 31:14–15, 32:23–24. At the oral hearing, the parties agreed that the “destination” recited in this limitation corresponds to the “intended destination” recited in the “selectively diverting” limitation. Tr. 43:5–26, 75:6–12. We agree that this is the natural reading of the claim, and

⁵ Because Petitioner does not propose an explicit construction, Patent Owner contends that “[o]n this basis alone, the claims should be found not-unpatentable.” Sur-Reply 5 (citing 37 C.F.R. § 42.104(b)(3); *ams AG v. 511 Innovations, Inc.*, Case IPR2016-01792, slip op. at 13 (PTAB Mar. 16, 2017) (Paper 15)). We disagree that the authority cited by Patent Owner—a non-precedential Board decision not binding on this panel—stands for the broad proposition that “where a claim term is in dispute, [and a petitioner] does not provide an explicit claim construction or demonstrate that a plain and ordinary meaning is appropriate, the proper disposition is a finding that [the petitioner] did not meet its burden to define a disputed claim term.” *See id.*

it is consistent with the description of Figure 9 of the '305 patent (reproduced above), which explains that network traffic probe 920 “generally passes incoming network traffic to its destination, be it a browser, e-mail client or other Internet application.” Ex. 1001, 19:35–38.

Second, with respect to the written description of the '305 patent, in whose light we necessarily consider construction of the “selectively diverting” limitation, Dr. Medvidovic makes the following observation regarding Figure 9 (reproduced *supra*): “there are two arrows exiting the network traffic probe, with one arrow leading to the internet applications (intended destinations) and one arrow leading to the [adaptive rule-based] scanner.” Ex. 2008 ¶ 54. From this, Dr. Medvidovic infers that the network traffic probe thus “makes a choice to either divert incoming content from an internet application to [the adaptive rule-based scanner].” *Id.* ¶ 55. “And,” according to Dr. Medvidovic, “as a result of this choice, at least some incoming content will reach its intended destination without being diverted to the rule-based content scanner.” *Id.* We agree with this conclusion, which is reinforced by the explanation in the '305 patent that the network traffic probe “generally passes incoming network traffic to its destination.” Ex. 1001, 19:36–37.

Third, Patent Owner contends that the cross-examination testimony of Petitioner’s expert, Dr. Spafford, also supports its position that the word “selectively” means “that only some incoming content is diverted.” PO Resp. 15. We agree. On cross-examination, Dr. Spafford testified that

“‘selectively’ means that there is some determination or choice being made” and that “[d]iverting to’ means altering the flow of data control, whatever is being diverted.” Ex. 2011, 25:19–23; *see also id.* at 26:5–10 (Dr. Spafford agreeing that “selectively diverting term means that there’s a choice between sending the incoming content to the rule-based content scanner or to the intended destination”).⁶

Petitioner responds to Patent Owner’s argument in two principal ways. First, Petitioner notes that Dr. Medvidovic agrees that the “selectively diverting” term should be construed the same way for all claims, despite differences in the specific language of the three independent claims. Reply 7 (citing Ex. 1034, 136:9–18; Ex. 2008 § VI.A.). According to Petitioner, “[c]laims 13 and 25 do not require that anything ‘*reach* its intended destination,’ . . . nor even that there be a ‘choice’ made between the rules-

⁶ Dr. Spafford testified that “intended destination” is “a somewhat vague term,” but asserted that it can be understood as the “application it was originally destined to go to.” Ex. 2011, 25:24–26:4. Although the term may be vague when considering the “selectively diverting” limitation in isolation, that vagueness is resolved when considering the claim as a whole. As we discuss above, the parties agree that the “intended destination” is an Internet application running on the computer, in accordance with a recitation that appears elsewhere in each independent claim.

based scanner and the destination.”⁷ *Id.* Petitioner thus contends that Patent Owner’s proposed construction amounts to “engrafting such limitations onto the term ‘selectively diverting,’” and “render[ing] superfluous the language of claim 1 of ‘selectively diverting *incoming content from its intended destination to said rule-based scanner,*’ while such limitations were expressly omitted by the patentee for claims 13 and 25.” *Id.* (quoting Ex. 1001, 29:65–66 (emphasis by Petitioner)).

This argument is not persuasive. Although claims 13 and 25 (unlike claim 1) do not include the language “to said rule-based scanner” in their version of the “selectively diverting” limitation, they both additionally recite “scanning . . . the selectively diverted incoming content,” as an evident parallel that accounts for the different statutory classes of the claims. Ex. 1001, 31:17–18, 32:27. In the context provided by this additional recitation, we do not discern a meaningful difference in the requirements of the independent claims as related to the “selectively diverting” limitation.

Second, Petitioner emphasizes that Dr. Spafford introduced a nuance by “clarifying that the diversion is only from *‘the path* to the intended

⁷ Petitioner also contends that claims 13 and 25 do not require that the incoming content “pass *directly*’ to anything,” as Dr. Medvidovic asserts elsewhere in his declaration. Reply 7 (quoting Ex. 2008 ¶ 83) (emphasis by Petitioner)). But Patent Owner concedes that its proposed construction “is concerned with where the incoming content is *sent*, whether or not the path to the intended destination is ‘direct’ or whether there is some ‘intermediate processing’ in between.” Reply 7; Sur-Reply 6; *see* Tr. 65:14–21. We accordingly do not address this aspect of Petitioner’s argument.

destination.”” Reply 8 (quoting Ex. 2011, 26:12 (emphasis by Petitioner)). That is, Petitioner argues that its expert’s position is that “the content continues along the path to the intended destination but that any number of intervening actions (other servers, scans, complete blocking, etc.) may occur along the way.” *Id.* This nuance is not dispositive in our analysis of the prior art discussed below, and, as we note above, *supra* n.4, Patent Owner concedes that there may be some intermediate processing. It necessarily follows that any content that is not diverted from the path to its intended destination will ultimately reach its intended destination.

In light of these considerations, we construe the “selectively diverting” limitation, for all claims, in a manner similar to Patent Owner’s proposal as “making a choice between (1) sending the incoming content along the path to the intended destination and (2) sending the incoming content to the scanner, such that at least some incoming content will reach its intended destination without being diverted to the rule-based content scanner.”

3. “exploit”

The parties dispute construction of the term “exploit,” which is recited in each of the challenged independent claims. PO Resp. 21–22; Reply 4–6; Sur-Reply 2–5. Resolution of the parties’ disagreement on this point does not impact our Decision, and we accordingly do not construe the term explicitly. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*,

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868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)) (only terms in controversy need to be construed, and only to the extent necessary to resolve the controversy).

D. Chandnani

1. Overview of Chandnani

Chandnani “relates to the detection of script language viruses,” particularly polymorphic script language viruses, which copy themselves differently to change their signatures and make themselves appear different each time they spread. Ex. 1013, 1:15–18, 2:54–56. Figure 2 of Chandnani is reproduced below.

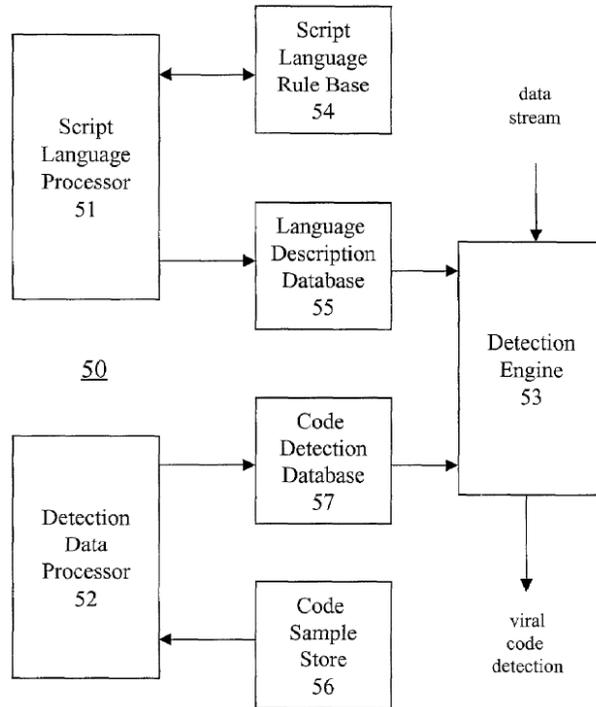


FIG. 2

Figure 2 provides a block diagram of a script language virus detection apparatus. *Id.* at 4:11–13. The apparatus includes script language processor 51 and detection data processor 52, which are used in preparing data that are subsequently used by detection engine 53 in performing a lexical analysis of a data stream to detect viral code. *Id.* at 5:2–9. Aspects of the manner in which the data are prepared for use by detection engine 53 are relevant to understanding the operation of a lexical analyzer (not shown) in detection engine 53.

Two sets of data are prepared. First, language definition rules and language check rules for respective target script languages are defined and

stored in rule base 54. *Id.* at 5:41–44. Such rules respectively “describe the constructs of the target script language and any relations between the constructs” and “define characteristics of the target script languages [to] differentiate one language (or group of languages) from another language (or group of languages).” *Id.* at 5:25–33. The rules are processed by script language processor 51 to generate language description data for the target script languages, and are stored in language description data module 55. *Id.* at 5:44–49.

Second, samples of polymorphic script language viral code are collected over time and stored in code sample store 56. *Id.* at 6:59–61. The samples are analyzed by detection data processor 52 to generate viral code detection data that are stored in code detection database 57. *Id.* at 6:61–67. Such analysis of the collected samples uses “pattern matching and/or CRC signature checking.” *Id.* at 6:62–66. “Pattern matching” recognizes “a pattern of (not necessarily sequential) characters or instructions that is found in each instantiation of the associated virus.” *Id.* at 2:19–21. “CRC signature checking” recognizes a “signature in the form of a 2-byte number derived from the contents of the subject file.” *Id.* at 2:40–43. Chandnani thus explains that “the viral code detection data may include multiple layers of tests. Each of the tests may be specified as a token pattern match methodology or a CRC signature check or a combination of token pattern match and CRC signature check methodologies.” *Id.* at 7:1–5.

With such data prepared, detection engine 53 may analyze a data stream generated from a potentially infected file, such as may be stored on a hard disk or floppy disk, or received via a network like the Internet. *See id.* at 4:35–40. Although Chandnani describes tokenization as part of that process, that aspect of its description is not of particular relevance to our analysis. *See id.* at 8:5–17. More relevantly, Chandnani describes analyzing the data stream by (1) using the language description data stored in language description database 55 to recognize the script language used in the data stream; and (2) thereafter using the viral code detection data for the recognized script language, stored in code detection database 57, to detect viral code. *Id.* at 8:4–42. Chandnani summarizes the latter part of this process as follows:

[T]he code detection module 57 may include multiple entries, with each entry corresponding to one or more pattern matches and/or CRC signature checks to be performed in sequence for detection of a corresponding virus. The detection engine 53 retrieves the entries of detection data in turn and performs the pattern match or CRC signature check corresponding to the retrieved detection entry, until a match is found. Depending on the data in the selected detection entry, a pattern match or CRC check on the generated token stream is attempted. If there is a match, viral code has been detected.

Id. at 8:32–42.

That process is illustrated more fully by Figure 7 of Chandnani, which is reproduced below.

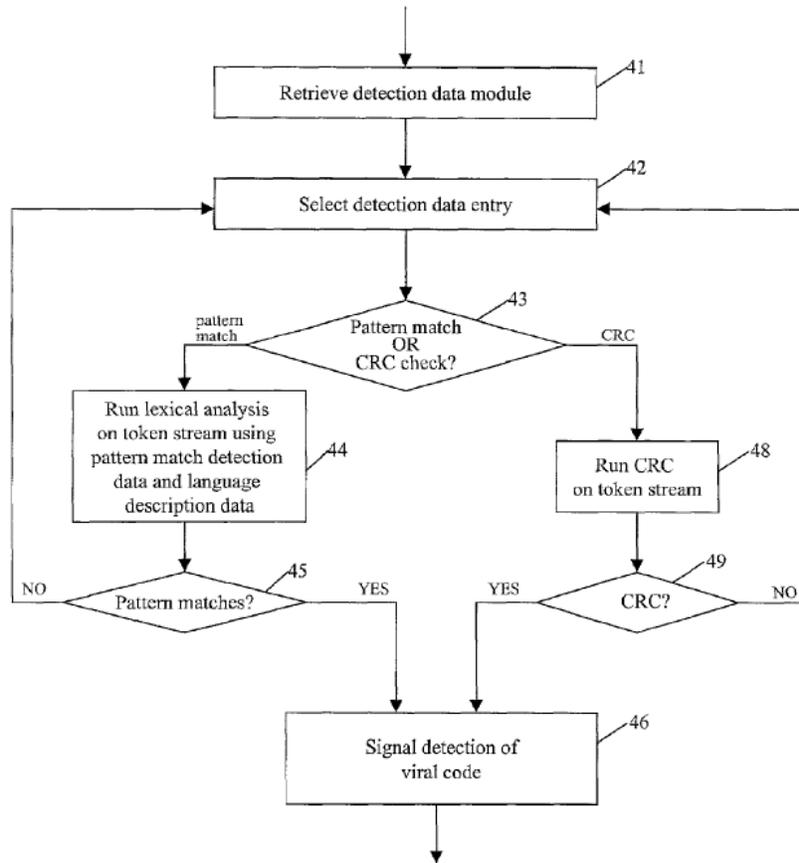


FIG. 7

Figure 7 is a “flow chart of a method of detecting a script language virus.” *Id.* at 4:26–27. As illustrated, the method loops through entries retrieved from code detection database 57 at steps 41 and 42, performing either a pattern match test or a CRC signature test, as determined at step 43 in accordance with the prepared characteristics of the viral code detection data. *Id.* at 8:44–56. If the test identifies a match, as checked at step 45 or 49, depending on the type of test performed, viral code is signaled at block 46.

Id. at 8:59–60. Otherwise, if no match is identified, the method returns to step 42 to select another detection data entry to perform another test. *Id.* at 8:56–59.

2. *Independent Claims 1, 13, and 25*

Our analysis focuses on the dispositive issue of whether Chandnani discloses the “selectively diverting” limitation of the independent claims. According to the Petition, “Chandnani teaches two types of selective diversion of incoming content, either of which satisfies the claim limitations of the ’305 patent.” Pet. 34. These may be characterized as respectively relying on explicit and inherent teachings of Chandnani.

a. Explicit Teachings

According to Petitioner, Chandnani explicitly “teaches selectively diverting only a subset of incoming data to the lexical analysis engine” in connection with the disclosure related to Figure 7, reproduced above. *Id.* at 35. In advancing this contention, the Petition respectively draws correspondences between the “network traffic probe” and “rule-based content scanner” recited in independent claim 1 and blocks 43 and 44 of Chandnani’s Figure 7. *Id.*; Reply 9. With such correspondences, the Petition argues that “depending on the determination made by the network traffic probe, which has intercepted the file prior to it being stored/copied/executed/opened on the computer by step 43, only some data

is diverted to the lexical analyzer before it is allowed to reach its intended destination.” Pet. 35 (citing Ex. 1006 ¶ 71). Petitioner’s Reply elaborates: “Chandnani at box 43 of Figure 7 performs a CRC check (similar to the pre-scanner of the ’305 patent) and then either diverts some content to the rule-based scanner (box 44) or allows the content to continue along the path to the intended destination.” Reply 10.

We are not persuaded by Petitioner’s analysis that Chandnani teaches this limitation. The problem with Petitioner’s analysis is that it obscures the fact that the independent claims are explicit with respect to what the “intended destination” is. As we note above, the “intended destination” is “an Internet application running on the computer.” *See* Ex. 1001, 29:47–48, 31:15, 32:23–24. The decision made at block 43 of Chandnani’s Figure 7, i.e., whether to run a lexical analysis using pattern-match detection at block 44 or to run a CRC signature check at block 48, may properly be characterized as “selective.” *See* Ex. 2011, 60:14–17 (Petitioner’s expert, Dr. Spafford, agreeing that block 43 “makes a choice between applying a CRC check and a token pattern match”). But the claims require more. They are specific that the selective diversion be from the path to the Internet application running on the computer.

We agree with Patent Owner that “[s]ignaling of viral code is not an intended destination,” as the term is used in the claims, “let alone the Internet application that Petitioner agrees is the intended destination recited in the claims of the ’305 Patent.” *Sur-Reply* 12 (citing Reply 11). We thus

also agree with Patent Owner that Petitioner is incorrect in characterizing Chandnani as teaching that “only some data is diverted to the lexical analyzer before it is allowed to reach its intended destination.” *See* Pet. 35; PO Resp. 32.

That is, we disagree with Petitioner that “if the content passes the CRC check of Chandnani, just like pre-scanner 150 of the ’305 patent, the content will continue on its path to the intended destination.” Reply 11. Rather, Figure 7 of Chandnani illustrates a loop in which sequential detection data entries of an incoming stream are either subject to a pattern-match analysis or a CRC analysis. The same subsequent actions are available, regardless of which type of analysis is performed: either the check fails and the detection of viral code is signaled at block 46 or the check passes and the next detection data entry is selected at block 42 for analysis. Ex. 1013, 8:43–60. Figure 7 of Chandnani does not show explicitly what happens after all detection data entries have been analyzed, but implies that the stream is only allowed to continue on its path to the intended destination if all entries pass their respective analyses. *See id.* If

any one of those entries fails, detection of viral code is signaled, as indicated at block 46.⁸ *See id.*

Accordingly, we find that block 43 of Chandnani’s Figure 7, and related description, does not disclose “selectively diverting incoming content from its intended destination,” as recited in independent claim 1 and as similarly recited in independent claims 13 and 25.

b. Inherent Teachings

The Petition contends that, because Chandnani expressly states that its “disclosure relates to the detection of *script language* viruses,” “Chandnani could be viewed as teaching diversion of only script languages to its rule-based scanner.” Ex. 1013, 1:15–16 (emphasis added); Pet. 34 (citing Ex. 1013, 1:15–16, abst., Fig. 6; Ex. 1006 ¶ 70). Neither the Petition, nor the cited supporting testimony of Dr. Spafford, provides sufficient facts or reasoning to support the contention. The Institution Decision expressed our

⁸ Patent Owner asserts that “[g]iven the sequential nature of these tests, and the fact that these tests are always conducted before allowing a program to reach any intended destination, Chandnani will *always* perform a pattern match test ‘before the file is stored/copied/executed/opened on the computer.’” PO Resp. 34 (emphasis added). Dr. Medvidovic makes a similar assertion. Ex. 2008 ¶ 87. This assertion appears not to account for the special case in which *all* viral code detection data stored in code detection database 57 are analyzed using CRC signature checking. But as Patent Owner explained at the oral hearing, in that special case, “there’s not even a rule-based scanner to divert to” as the claim requires. *See* Tr. 46:16–48:13.

preliminary conclusion that “[s]uch speculation as to how a person of skill in the art ‘could’ have understood Chandnani is insufficient to support an anticipation challenge.” Dec. 20, n.2 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)).

Despite our preliminary conclusion, and notwithstanding the cursory treatment of this theory in the Petition, this argument received significant attention during the trial, including extended cross-examination of both sides’ experts. *See* PO Resp. 35–36; Reply 12–13; Sur-Reply 14–16; Ex. 1034, 206:6–214:25; Ex. 2027, 11:12–12:23, 16:19–17:9, 21:8–60:5. In addition, the argument developed from its initial presentation, with Dr. Spafford attesting that his original statement “was unclear” and “correct[ing] [his] former testimony to state that not only ‘could’ a person of ordinary skill reasonably had such an interpretation, but a person of skill in the art at the relevant time . . . **would** have understood the disclosure of Chandnani in just such a manner.” Ex. 1032 ¶¶ 3, 5.

Dr. Spafford identifies several aspects of a skilled artisan’s knowledge that he asserts support his corrected statement: (1) “lexical analysis could not be performed for a language for which there was no pre-existing viral code detection data,” *id.* ¶ 6; (2) “the teaching of Chandnani could not be used for non-script related files,” *id.* ¶ 7; (3) “to create a commercially viable anti-malware software product it must include various techniques for analyzing different types of incoming content,” *id.* ¶ 8; (4) “if a binary file were sent to Chandnani, not only would that file not be processed by the

methods in Chandnani, but such processing would be a waste of computing resources,” *id.* ¶ 9; and (5) “there is no error checking disclosed in Chandnani to determine if the file received is one that could actually be parsed by the techniques taught by Chandnani,” *id.* ¶ 10. In light of these various pieces of knowledge, Dr. Spafford’s “corrected” testimony concludes that “one of skill in the art would have understood that Chandnani *inherently discloses* selectively diverting only selected script files to the scanning engine and allowing all other file types to bypass Chandnani.” *Id.* ¶ 11 (emphasis added).

The original Petition does not express Petitioner’s argument in terms of inherency, but it is unambiguous from Dr. Spafford’s later testimony that inherency is a fundamental basis for his conclusion. In addition, Petitioner makes no argument that diversion only of selected script files to the scanning engine is taught expressly by Chandnani, and it is well-settled that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal*, 814 F.2d at 631. Accordingly, we treat Petitioner’s more developed argument as an inherency argument. *See* Reply 12 (addressing “Patent Owner’s contention that Chandnani does not inherently disclose diversion of non-script language content”).

“To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary

skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotations omitted). In this context, Dr. Medvidovic provides relevant testimony. In addressing the “selectively diverting” limitation, Dr. Medvidovic testifies unequivocally that “Chandnani scans all files.” Ex. 2008 ¶ 67. This statement was challenged by Petitioner on cross-examination, and Dr. Medvidovic explained that Chandnani “talks about using scripting code . . . but it doesn’t talk about any other code other than scripts coming in. In other words, whatever is coming in to the top of Figure 7, the only thing Chandnani ever talks about is the code that it actually does scan.” Ex. 1034, 210:24–212:7. In addition, when asked on cross-examination whether he would “expect Chandnani to be able to process nonscript files,” Dr. Medvidovic replied that “[i]t’s possible it might,” and that Chandnani includes “description that suggests that it might” when identifying keywords that are “not necessarily associated just with scripts.” Ex. 1034, 209:8–21. That is, according to Dr. Medvidovic, Chandnani does not exclude the scanning of non-script-language content as an inherency argument requires.

Dr. Spafford’s testimony on this point is also problematic because Dr. Spafford reaches the conclusion that “the above described aspects of Chandnani demonstrate that one of skill in the art would have understood that the content coming into the scanner in Chandnani *has already been*

specifically selected such that only script files (and only the types of script files that can be processed by Chandnani) are diverted to the scanning engine in Chandnani.” Ex. 1032 ¶ 11 (emphasis added; emphasis by Dr. Spafford omitted). That is, Dr. Spafford describes Chandnani as “only one part of a multi-layered approach to malware detection” such that there might be some *preselection* of content. *Id.* ¶ 10. Neither Dr. Spafford nor Petitioner identifies a “network traffic probe” that is “operatively coupled to said network interface and to said rule-based content scanner,” and that inherently performs such preselection, as would be required by independent claim 1 under this theory. *See* Ex. 1001, 29:63–67.

More important, all the independent claims require selective diversion of “incoming content” or “received incoming content.” *Id.* at 29:65, 31:15–16, 32:25. The preselection of content described by Dr. Spafford is inconsistent with this requirement because, even under that theory, all “incoming content” is subject to scanning in Chandnani.

Petitioner summarizes its argument by relying on Dr. Spafford’s corrected testimony, in combination with pervasive references in Chandnani to “script language viruses,” to conclude that “[a]nalyzing anything other than script language files with Chandnani would provide no benefit and would instead result in drawbacks and potential errors.” Reply 13 (citing

Ex. 1032 ¶¶ 7–9)⁹. But rather than establishing inherency of the “selectively diverting” limitation, such an argument merely amounts to a suggestion that the teachings of Chandnani could be modified to exclude scanning of nonscript content to mitigate those potential drawbacks. And whatever ambiguities might exist with respect to whether the Petition sets forth anticipation or single-reference obviousness grounds with respect to certain dependent claims, there is no dispute that the Petition unambiguously relies on Chandnani for *anticipation* of the independent claims. *See, e.g.*, Tr. 31:3–5 (“We believe claim 1’s anticipated by Chandnani. We don’t think there’s anything in claims 13 or 25 that is narrow[er] or that would save either of those claims.”).

c. Summary

For the foregoing reasons, we find that Petitioner does not demonstrate, by a preponderance of the evidence, that Chandnani describes, expressly or inherently, the “selectively diverting” limitation of the independent claims. Accordingly, we conclude that Petitioner does not

⁹ Petitioner appears to argue that “the legal construct of statutory interpretation, *expressio unius est exclusio alterius*,” supports its argument. Reply 13. But Petitioner cites to no authority that explains the application of such a doctrine of *statutory* interpretation to understanding the disclosure of a *prior-art patent document*. In particular, Petitioner does not sufficiently explain the interplay of that doctrine with the patent doctrine of inherency, which its argument invokes.

demonstrate, by a preponderance of the evidence, that independent claims 1, 13, or 15 are anticipated by Chandnani.

3. Dependent claims 2–12 and 14–24

Each of dependent claims 2–12 and 14–24 depends, directly or indirectly, from independent claim 1 or 13. Ex. 1001, 30:47–31:10, 31:31–32:19. Petitioner’s arguments for these claims do not present any alternative theory that addresses the “selectively diverting” limitation of the underlying independent claims. *See* Pet. 36–41. This is true regardless of whether the challenges to claims 4–12 and 16–24 are considered as anticipation challenges or as obviousness challenges. Petitioner’s analysis of the dependent claims is thus insufficient for the same reasons as its analysis of the independent claims.

We conclude that Petitioner does not demonstrate, by a preponderance of the evidence, that claims 2–12 and 14–24 are unpatentable over Chandnani.

E. Freund

1. Overview of Freund

Freund describes “system[s] and methods for client-based monitoring and filtering of access, which operates in conjunction with a centralized enforcement supervisor.” Ex. 1014, 3:51–54. Figure 3A of Freund is reproduced below.

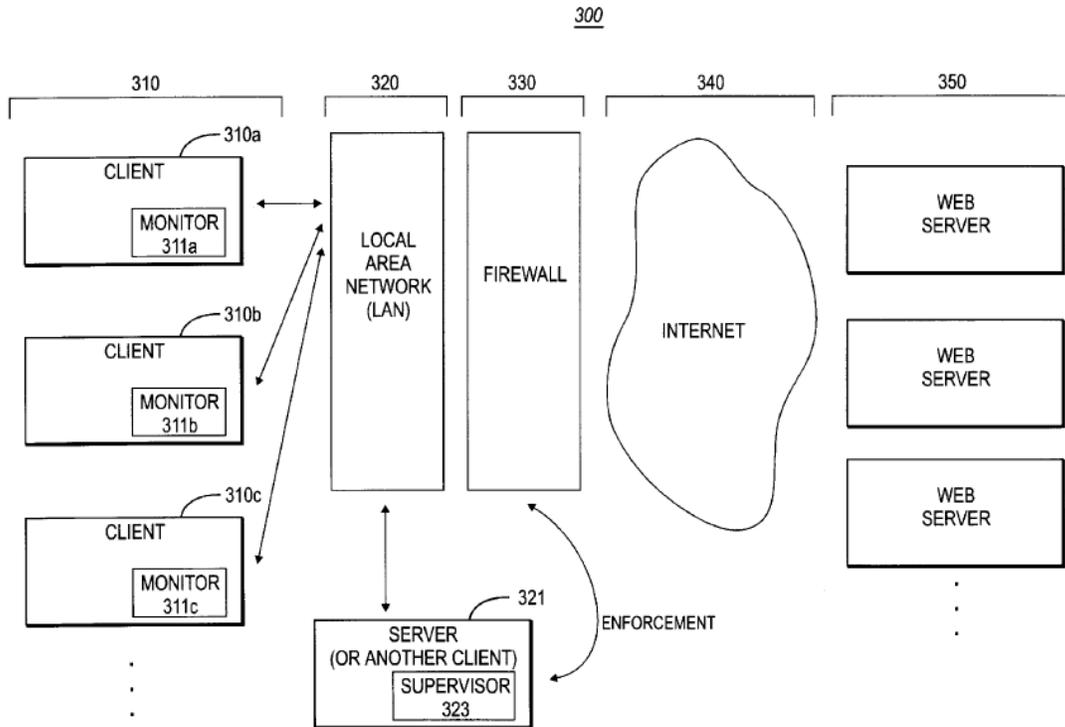
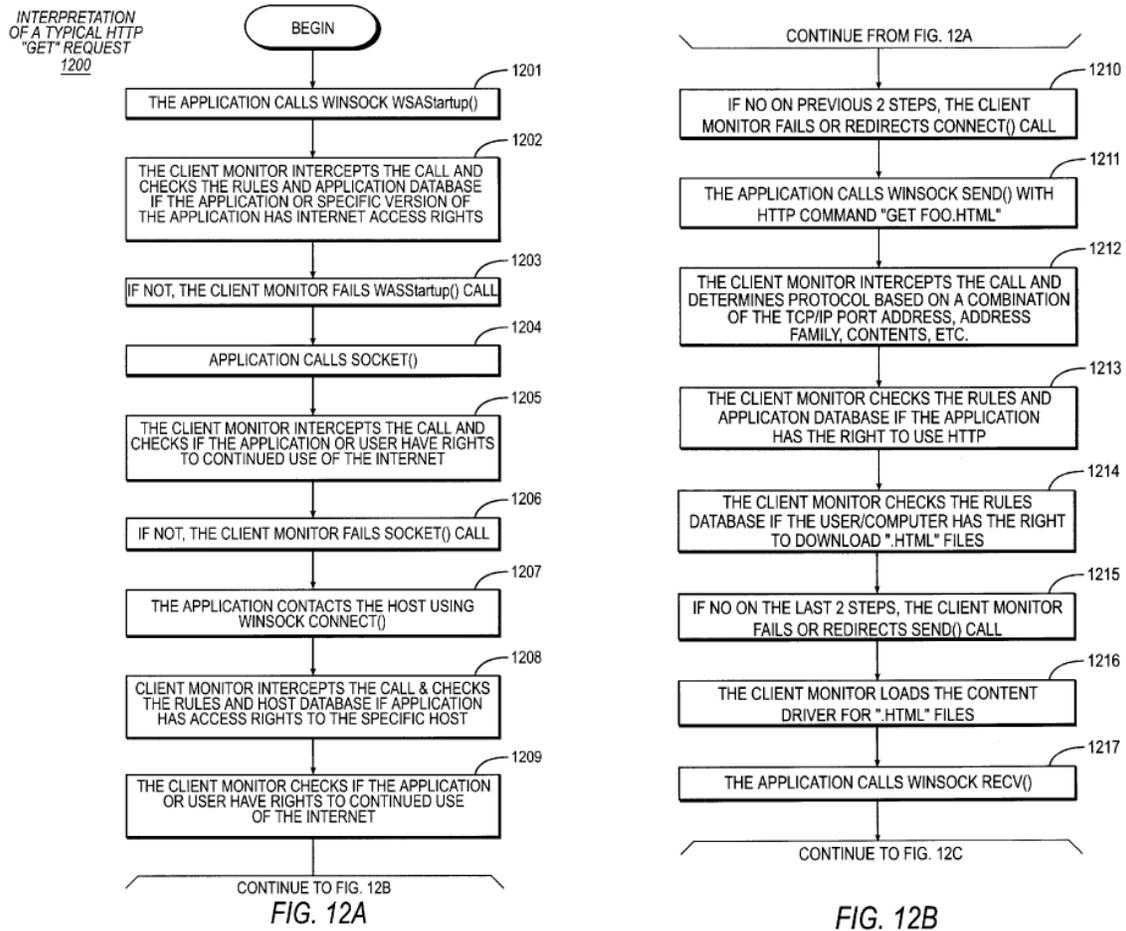


FIG. 3A

Figure 3A provides an overview of Internet-based client/server system 300, which includes multiple clients 310 connected to network 320, with network 320 itself communicating with Internet 340 through firewall 330. *Id.* at 14:52–15:11. Each client 310 includes a client-side monitoring component 311 (“Client Monitor”) for monitoring Internet access. *Id.* at 14:59–62.

Of particular relevance is Freund’s description of “a method . . . for interpreting protocol commands,” illustrated in Figures 12A–C. *See id.* at 6:62–64. A portion of the flowchart illustrating that method, Figures 12A and 12B, is reproduced below.



Figures 12A (left) and 12B (right) illustrate a portion of Freund’s method for interpreting protocol commands, such as a typical HTTP “GET” request. *Id.* at 29:18–19. As Freund explains, “[a]t any time during the method, the Client Monitor can fail or redirect a call.” *Id.* at 29:20–21.

At step 1211 of Figure 12B, an application makes a “call” with the GET command to download a file, foo.html (“GET foo.html”). *Id.* at 29:43–44. But prior to making that call, the Client Monitor performs certain checks. For example, at step 1202 of Figure 12A, “the Client Monitor

intercepts the call and checks the rules and application database to see if the application or a specific version of the application has Internet access rights.” *Id.* at 29:25–28. If not, the Client Monitor fails the call at step 1203. *Id.* at 29:28–29. In addition, at step 1205, “the Client Monitor intercepts the call and checks if the application or user has the right to continued use of the Internet.” *Id.* at 29:30–32. If not, the Client Monitor fails the call at step 1206. Further, at steps 1208–1210 (straddling Figures 12A and 12B), the call may be failed or redirected if the Client Monitor determines that the application does not have necessary access right or the user does not have the right to continued Internet use. *Id.* at 29:35–43.

After issuing the GET command at step 1211, the Client Monitor determines the protocol to be used at step 1212, checks whether the application has the right to use HTTP at step 1213, and checks whether the user has the right to download .html files at step 1214. *Id.* at 44–52. If these checks do not also pass, the Client Monitor fails or redirects the call at step 1215. If the checks pass, the Client Monitor loads the content driver for .html files at step 1216 and “passes the contents to the content driver” for parsing and checking for components known or suspected to cause security problems. *Id.* at 29:54–30:1.

2. Independent Claims 1, 13, and 25

The Petition challenges independent claims 1, 13, and 25 for obviousness over the combination of Freund and Chandnani. Pet. 42–56. In

doing so, Petitioner contends that all limitations of the independent claims are taught by Freund, but relies on Chandnani “[t]o the extent Freund is deemed not to explicitly teach that its parser and analyzer rules include a punctuation type, an identifier type, and a function type.” *Id.* at 51. That is, the only limitation of the independent claims for which the Petition relies on any teaching outside of Freund is that “the parser and analyzer rules describe computer exploits as patterns of types of tokens, tokens being program code constructs and types of tokens comprising a punctuation type, an identifier type and a function type.” *See* Ex. 1001, 29:52–56, 31:23–27, 32:31–35.

In addressing the “selectively diverting” limitation discussed for the grounds based on Chandnani alone, the Petition draws a correspondence between the “rule-based scanner” recited in claim 1 and the “content driver” described by Freund. Pet. 55. With this correspondence, Petitioner focuses its argument on the behavior described above with respect to Figures 12A and 12B of Freund. *Id.* In doing so, Petitioner contends that the “selectively diverting” limitation is met because Freund’s Client Monitor sometimes fails or redirects the call to the GET command, and sometimes passes the call by allowing content to be passed to the content driver. *Id.*

We agree with Patent Owner that “[t]his disclosure does not teach selectively diverting incoming content to a content scanner at least because every single incoming HTML file is sent to the content driver.” PO Resp. 45. That is, all incoming HTML files are subject to processing by the content driver because, if the user or computer does not have the right to

download .html files, the GET command that is intercepted at step 1212 of Freund is never sent to the host, and the host never sends the contents of foo.html. *See id.* at 46 (citing Ex. 1014, 29:43–60). Accordingly, we find that Freund does not disclose the “selectively diverting” limitation of the independent claims.

In its Reply, Petitioner presents a significant shift in position. Rather than relying on *Freund* for all limitations, except one related to parser and analyzer rules, the Reply takes the position that *Chandnani* discloses all limitations and that “[t]o the extent that Chandnani is not viewed by the Board as disclosing selectively diverting incoming content from the intended destination and to its rule-based scanner, then Freund discloses that feature.” Reply 18–19. But the Petition does not present a theory that relies on Chandnani for all limitations except the “selectively diverting” limitation, nor any reasoning how or why a person of skill in the art would have combined what Petitioner purports to be such a teaching into the systems and methods described by Chandnani. *See* Pet. 60–62 (addressing combination of Freund and Chandnani relying on argument directed to parser and analyzer rules: “Such a[] person of ordinary skill also would have understood that in parsing and tokenizing the incoming data, it would have been necessary to identify token types corresponding to punctuation, function types and identifiers (e.g., expressions), as taught in Chandnani.”).

We find that Petitioner’s argument regarding the combination of Chandnani with Freund’s purported disclosure of the “selectively diverting”

limitation is a new argument, and we accordingly limit our consideration of it. “A reply may only respond to arguments raised in the corresponding . . . patent owner response.” 37 C.F.R. § 42.23(b). As the Board’s 2018 Revised Trial Practice Guide¹⁰ explains, “[w]hile replies . . . can help crystalize issues for decision, a reply . . . that raises a new issue or belatedly presents evidence may not be considered.” Trial Practice Guide Update, 15. “Examples of new issues are new theories or arguments necessary to make out petitioner’s case-in-chief for the unpatentability of an original or proposed substitute claim.” *Id.* (citing *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016)).

Nevertheless, we note that this new theory is inconsistent with our finding that Freund does not disclose the “selectively diverting” limitation recited in the independent claims. And Petitioner’s new theory is defective because it insufficiently explains how or why a person of ordinary skill in the art would make the proposed combination.

For these reasons, we conclude that Petitioner does not demonstrate, by a preponderance of the evidence, that independent claims 1, 13, or 25 are unpatentable under 35 U.S.C. § 103(a) over Freund and Chandnani.

¹⁰ The Trial Practice Guide Update is available at https://www.uspto.gov/sites/default/files/documents/2018_Revised_Trial_Practice_Guide.pdf

3. *Dependent Claims 2–12 and 14–24*

Each of dependent claims 2–12 and 14–24 depends, directly or indirectly, from independent claim 1 or 13. Ex. 1001, 30:47–31:10, 31:31–32:19. Petitioner’s arguments for these claims do not present any alternative theory that addresses the “selectively diverting” limitation of the underlying independent claims. *See* Pet. 56–60. Petitioner’s analysis of the dependent claims is thus insufficient for the same reasons as its analysis of the independent claims.

We conclude that Petitioner does not demonstrate, by a preponderance of the evidence, that claims 2–12 and 14–24 are unpatentable under 35 U.S.C. § 103(a) over Freund and Chandnani.

F. *Other Patent Owner Arguments*

Patent Owner contends that secondary considerations support its position that the challenged claims are patentable: “Indeed, [Patent Owner’s] patented inventions have received much praise and commercial success that Petitioner fails to acknowledge. This evidence on its own is enough to overcome Petitioner’s challenges to the obviousness of the ‘305 Patent.” PO Resp. 54–55 (citing *Institut Pasteur & Université Pierre et Marie Curie v. Focarino*, 738 F.3d 1337, 1346 (Fed. Cir. 2013)). Because we find Petitioner’s case-in-chief to be insufficient, we do not reach these arguments.

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In addition, Patent Owner challenges certain procedural aspects of this proceeding by contending that (1) the Board's modified Institution Decision (Paper 19) is untimely, PO Resp. 23–24; and (2) the Board failed to satisfy due-process requirements, failed to comport with 35 U.S.C. § 316(b), and abused its discretion by substituting Judge Arpin with Judge Giannetti on the panel, *id.* at 24–26. Also because we find Petitioner's case-in-chief to be insufficient, we do not reach these arguments.

IV. ORDER

It is

ORDERED that Patent Owner's Motion for Entry of Default Protective Order and to Seal (Paper 32) is *granted*;

FURTHER ORDERED that the Board's Default Protective Order (Exhibit 2026) is hereby entered;

FURTHER ORDERED that the unredacted version of Patent Owner's Response (Paper 30) and the restricted version of Exhibit 2012 remain sealed;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence (Paper 46) is *denied*;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence (Paper 47) is *denied*;

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FURTHER ORDERED that, under the standard of a preponderance of the evidence, claims 1–25 of U.S. Patent No. 7,975,305 B2 have not been shown to be unpatentable; and

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

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PETITIONER

Nicola Pisano
Christopher Bolten
Scott Penner
FOLEY & LARDNER LLP
npisano@foley.com
cbolten@foley.com
spenner@foley.com

PATENT OWNER

James Hannah
Jeffrey Price
KRAMER LEVIN NAFTALIS & FRANKEL LLP
jhannah@Kramerlevin.com
jprice@kramerlevin.com