

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KEYSIGHT TECHNOLOGIES, INC.,
Petitioner,

v.

CENTRIPETAL NETWORKS, INC.,
Patent Owner.

IPR2023-00445
Patent 10,785,266 B2

Before KEVIN F. TURNER, AARON W. MOORE, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Keysight Technologies, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1–27 (the “challenged claims”) of U.S. Patent No. 10,785,266 B2 (Ex. 1001, “the ’266 Patent”). Centripetal Networks, Inc. (“Patent Owner”) timely filed a Preliminary Response (Paper 7, “Prelim. Resp.”) contending that the Petition should be denied as to all challenged claims. We additionally authorized the filing of a Reply by Petitioner to Patent Owner’s Preliminary Response (Paper 8, “Reply”) and a Sur-reply by Patent Owner (Paper 9, “Sur-reply”) to further consider the arguments of the parties with respect to the application of our discretion under 35 U.S.C. § 314(a).

An *inter partes* review may be instituted only if “the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). For the reasons given below, Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims of the ’266 Patent. Accordingly, we institute an *inter partes* review of claims 1–27 of the ’266 Patent on the grounds of unpatentability raised in the Petition.

B. Real Party-in-Interest

Petitioner identifies itself as the sole real party-in-interest. Pet. 1. Patent Owner identifies itself as the sole real party-in-interest. Paper 4, 1.

C. Related Proceedings

The Petition states that the '266 Patent is asserted in the following litigation: *Centripetal Networks, Inc. v. Keysight Technologies, Inc.*, 2:22-cv-00002 (E.D. Va.) (filed Jan. 1, 2022). Pet. 1; Paper 4, 1.

D. The '266 Patent

The '266 Patent discloses methods and systems for protecting a secured network. Ex. 1001, code (57). The '266 Patent discloses that “network environment 100 may include networks A-E 102, 104, 106, 108, and 110,” and “may include packet security gateways [“PSGs”] 112, 114, 116, and[] 118 and security policy management server [“SPMS”] 120.” *Id.* at 4:42–43, 5:15–16. An exemplary system is illustrated in Figure 1 and is reproduced below:

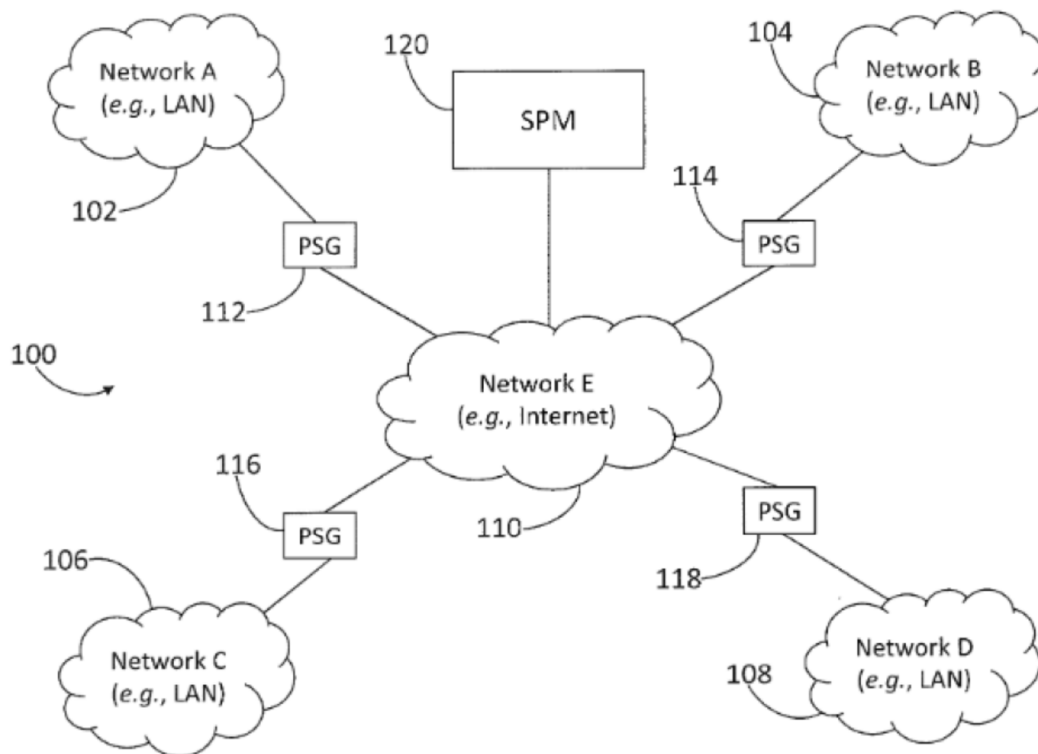


FIG. 1

The PSGs perform packet transformation functions (e.g., actions such as packet forwarding, dropping, or re-routing to a different destination address) on received packets according to rules in a dynamic security policy that specifies one or more actions that are performed on packets associated with specific criteria. Ex. 1001, 4:59–5:11; 6:24–28; 7:23–26. The dynamic security policies can be added, removed, or altered by SPMS based on information received from third-party services. *Id.* at 14:9–28; Fig. 5. The exemplary SPMS can (i) automatically create or alter a first set of packet filtering rules of a dynamic security policy based on aggregated malicious network traffic from malicious host tracker services, (ii) communicate the first set to the PSGs, (iii) alter the first set based on updates from the malicious host tracker services, and (iv) communicate an updated second set of the packet filtering rules to the PSGs. *Id.* at 13:18–14:39; Fig. 5.

E. Illustrative Claim

As noted above, Petitioner challenges claims 1–27, with claims 1, 8, 15, and 21 being independent claims. Claim 1 is illustrative of the challenged claims and is reproduced below:

1. [1.0] A method of filtering packets at a packet security gateway, of a plurality of packet security gateways that collectively provide an entire interface across a boundary of a network protected by the packet security gateway and one or more networks other than the network protected by the packet security gateway, the method comprising:
 - [1.1] receiving, by the packet security gateway and from a security policy management server external from the network protected by the packet security gateway, a dynamic security policy comprising a first set of packet filtering rules to be applied to all network traffic traversing the boundary, wherein:

- [1.2] each packet filtering rule of the first set of packet filtering rules comprises at least one packet matching criterion and a corresponding packet transformation function, and
- [1.3] one or more first packet filtering rules of the first set of packet filtering rules comprise packet matching criteria corresponding to one or more network addresses and were automatically created or altered by the security policy management server based on aggregated malicious traffic information received from at least one third party malicious host tracker service located in the one or more networks other than the network protected by the packet security gateway, that comprises network addresses that have been determined, by the at least one third party malicious host tracker service, to be associated with malicious network traffic;
- [1.4] performing, on a packet by packet basis, packet filtering on a first portion of packets corresponding to network traffic traversing the boundary via the packet security gateway based on the first set of packet filtering rules by performing at least one packet transformation function specified by at least one packet filtering rule of the first set of packet filtering rules on the first portion of packets;
- [1.5] receiving, by the packet security gateway and after performing packet filtering on the first portion of the packets, an updated second set of packet filtering rules for the dynamic security policy from the security policy management server, wherein the updated second set of packet filtering rules comprises an update to the one or more first packet filtering rules created or altered by the security policy management server based on updated malicious traffic information received from the at least one third party malicious host tracker service; and
- [1.6] performing, on a packet by packet basis, packet filtering on a second portion of the packets corresponding to network traffic traversing the boundary via the packet security gateway based on the updated second set of packet filtering rules by performing at least one packet transformation function specified by at least one packet filtering rule of the

second set of packet filtering rules on the second portion of packets.

Ex. 1001, 20:64–21:52 (with annotations provided by Petitioner,

Ex. 1009, 1–2).

F. The Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims of the '266 Patent based on the following grounds under 35 U.S.C. § 103, relying on the Declaration from Dr. Doug W. Jacobson (Ex. 1003). Pet. 12–70.

References	Basis 35 U.S.C. §	Claims Challenged ¹
Law ²	103	1–27
Law, Wood ³	103	1–24
Law, Jungck ⁴	103	6, 13, 19, 26
Law, Wood, Jungck	103	6, 13, 19, 26

¹ The Petition is inconsistent with respect to claims challenged under each ground of unpatentability. *Compare* Pet. 3 *with id.* at 63–68, 70. The table reflects the panel’s understanding of the claims challenged in each from examination of the context of the discussion of each ground.

² U.S. Patent Publication No. 2011/0072506 A1 (filed Sept. 23, 2010) (published Mar. 24, 2011) (Ex. 1005, “Law”).

³ U.S. Patent Publication No. 2007/0097976 A1 (filed May 19, 2006) (published May 3, 2007) (Ex. 1006, “Wood”).

⁴ U.S. Patent Publication No. 2009/0262741 A1 (filed June 29, 2009) (published Oct. 22, 2009) (Ex. 1008, “Jungck”).

II. DISCUSSION

A. Discretion Under 35 U.S.C. § 314(a)

Institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”); 35 U.S.C. § 314(a) (2018). The Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) (“CTPG”)⁵ states that generally “one petition should be sufficient to challenge the claims of a patent in most situations” and that “multiple petitions by a petitioner are not necessary in the vast majority of cases.” CTPG 59. “[T]o aid the Board’s assessment of ‘the potential impacts on both the efficiency of the *inter partes* review process and the fundamental fairness of the process for all parties,’” we consider a number of non-exclusive factors, “especially as to ‘follow-on’ petitions challenging the same patent as challenged previously in an IPR.” *Id.* at 56. Those factors are:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
3. whether at the time of filing of the second petition the petitioner already received the patent owner’s preliminary response to the first petition or received the Board’s decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;

⁵ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

Id. at 57 (citing *General Plastic Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, slip op. 16–17 (PTAB Sept. 6, 2017) (Paper 19) (precedential) (“*General Plastic*”)).

Patent Owner argues that the *General Plastic* factors favor discretionary denial under § 314(a). Prelim. Resp. 7–22; Sur-reply 1–5. Petitioner responds to those arguments. Prelim. Reply 1–5. We consider the parties’ arguments regarding each factor below.

With respect to *General Plastic* factor (1), Patent Owner argues that this factor weighs in favor of discretionary denial because the same claims of the same patent were challenged by a prior petitioner, and the instant Petitioner used a prior Board decision denying institution “as a roadmap to address the deficiencies” of that prior petition. Prelim. Resp. 9–10 (citing IPR2021-01154, with Palo Alto Networks, Inc (“PAN”), as the prior petitioner; *see* Ex. 2004). Patent Owner also asserts that a significant relationship exists between the prior petitioner and the instant Petitioner because the instant Petitioner “created an implicit relationship with prior-petitioner PAN.” *Id.* at 9. Patent Owner also cites to prior Board decisions that it says support finding a significant relationship between different petitioners. *Id.* at 9–11 (citing *Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, Paper 11 at 10 (PTAB Apr. 2, 2019) (precedential); *Ericsson Inc. v. Uniloc 2017, LLC*, IPR2020-01550, Paper 8 at 12 (PTAB

Mar. 17, 2020); *Samsung Elecs. Co. v. Elm 3DS Innovations, LLC*, IPR2017-01305, Paper 11 at 20 (PTAB Oct. 17, 2017); *Mitek Sys., Inc. v. United Servs. Auto. Assoc.*, IPR2020-01101, Paper 29 at 3 (PTAB Jan. 26, 2021)). Patent Owner also argues that even when no relationship exists between petitioners, *General Plastic* can be used to restrict follow-on petitions. Prelim. Resp. 11–12; Sur-reply 1–5.

Petitioner asserts that Patent Owner is attempting to apply *Valve Corp.*, but the relationship between petitioners is nothing like the one in that case. Reply 1. Petitioner also asserts that it and PAN have “no relationship whatsoever, let alone a significant one.” *Id.* Petitioner continues that unlike in *Valve*, Petitioner and PAN are not co-defendants in the same litigation, nor are their accused products related to one another, and asserts that they did not coordinate in any way in preparing their respective petitions. *Id.* Petitioner further asserts that for unrelated parties who have been separately sued for making, using, or selling different accused products, *General Plastic*, factor 1, weighs strongly against discretionary denial. *Id.* at 2 (citing *Qualcomm Inc. v. Monterey Research LLC*, IPR2020-01491, Paper 10 at 10 (PTAB Mar. 8, 2021)). Petitioner also disputes that there is any “implicit relationship” between the petitioners, and points out that all of the cases cited by Patent Owner “involved a later petitioner incorporating content from the prior IPRs, modified to address deficiencies.” *Id.* at 2–3.

We agree with Petitioner’s arguments. The fact that the disclosures of cited references are the same or similar is unremarkable in that they are applied against the same claims. Additionally, Patent Owner has not presented evidence that the instant Petitioner applied the prior petition, and its non-institution, as a roadmap to try and correct errors of the prior petition.

As such, we agree with Petitioner that factor (1) weighs strongly against discretionary denial.

With respect to *General Plastic* factor (2), Patent Owner acknowledges that this factor is neutral because the instant Petitioner is not the same petitioner as in the prior proceeding. Prelim. Resp. 12. Petitioner asserts that this factor weighs against discretionary denial. Reply 4. Given the difference in the petitioners, we agree with Petitioner. As such, we find factor (2) weighs against discretionary denial.

With respect to *General Plastic* factor (3), Patent Owner argues that Petitioner had the benefit of the Patent Owner's preliminary response in the prior proceeding, and the Board's denial, as well as Patent Owner's response to the European opposition proceedings, such that this factor should weigh strongly in favor of discretionary denial. Prelim. Resp. 13–17. Petitioner responds that it did not use the prior IPR petition as a roadmap, and the European opposition proceeding involved a different family of patents, not related to the instant '266 Patent. Reply 4–5. Although Petitioner was aware of the prior petition, and its denial, it is not clear that Petitioner used those findings in the production of the instant Petition. Overall, we conclude this factor is neutral with respect to discretionary denial.

With respect to *General Plastic* factor (4), Patent Owner argues that this factor weighs in favor of discretionary denial because Petitioner had the reference Law and knew of its relevance for more than seven months before the instant Petition was filed. Prelim. Resp. 17. Patent Owner also asserts that Petitioner's delay in filing the instant Petition is unexplained, and that Petitioner waited until the last possible day to file. *Id.* at 17–19. Petitioner asserts that this factor weighs against discretionary denial. Reply 4.

We note, as pointed out by Petitioner, the European opposition in question is not directed to the instant Patent or a patent related thereto. That said, it is not clear that the relevance of Law to the instant Patent would have been immediately clear once Petitioner learned of the reference. Nonetheless, given that the delay is unexplained, we determine this factor to mildly favor discretionary denial.

With respect to *General Plastic* factor (5), Patent Owner argues that this factor weighs strongly for discretionary denial because the instant Petition was filed over 11 months after the issuance of the denial of institution of the prior petition, and Petitioner provides no explanation for the delay. Prelim. Resp. 20–21. Petitioner asserts that this factor weighs against discretionary denial because, given that Petitioner conducted a search of the prior art once Patent Owner brought suit, any benefit Petitioner derived from the prior decision against institution was a result of Patent Owner’s delay in filing suit. Reply 4–5. We agree with Petitioner that any delay in filing of the instant Petition can at least be partially mitigated due to the timing of Patent Owner’s actions. As such, we determine this factor to be neutral with respect to discretionary denial.

With respect to *General Plastic* factors (6) and (7), Patent Owner asserts that “the validity of the ’266 Patent has been thoroughly tested during the initial prosecution and the ’1154 IPR, with the Board determining that a reconsideration of the patent grant is not warranted.” Prelim. Resp. 21–22. Patent Owner also speculates that our “resources are better spent reviewing petitions asking for the first time for the Office to reconsider the initial patent grant,” and acknowledges that factor (7) is neutral because there is no

impediment to timely issuing a final determination. *Id.* at 22. Petitioner does not appear to address *General Plastic* factors (6) and (7). *See* Reply.

With respect to these latter factors, we note that the denial of the prior petition went to the relative strength of that petition's grounds and not necessarily to the "strength" of the instant Patent. We determine that the merits of Petitioner's challenge appear strong based on the present record, as discussed below. Thus, we determine the merits of Petitioner's challenge to weigh against discretionary denial and determine that institution of the instant Petition to be useful utilization of the Board's resources under the rationale for *inter partes* review. As such, we determine factors (6) and (7) weigh against discretionary denial.

In sum, we conclude that, on balance, the *General Plastic* factors weigh against discretionary denial here. We determine that the efficiency and integrity of the system are best served by declining to exercise our discretion to deny institution of review under 35 U.S.C. § 314(a).

B. Level of Ordinary Skill in the Art

Petitioner, supported by Dr. Jacobson's testimony, proposes that a person of ordinary skill in the art at the time of the invention "would have had a bachelor's degree in computer science, computer engineering, or an equivalent, four years of professional experience, and a working knowledge of packet-switched networking, firewalls, security policies, communication protocols and layers, and the use of customized rules to address cyber-attack." Pet. 8 (citing Ex. 1003 ¶ 33). Patent Owner indicates that it does not challenge the qualifications proposed by Petitioner for a person of ordinary skill in the art. Prelim. Resp. 22.

At this stage of the proceeding, we find Petitioner's proposal consistent with the level of ordinary skill in the art reflected by the prior art of record, *see Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978), and, therefore, we adopt Petitioner's unopposed position as to the level of ordinary skill in the art for purposes of this Decision.

C. Claim Construction

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2023). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

Petitioner asserts that various claim terms which appear in the challenged claims have been construed in prior proceedings, and asserts that the same should be adopted herein. Pet. 9–10. Patent Owner repeats those terms and their constructions, and agrees to adopt and apply those constructions at this time. Given the lack of controversy, we need not explicitly adopt or discuss the constructions agreed to by the parties. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)

("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

Patent Owner also asserts that the preambles of independent claims 1, 8, and 15 are limiting, and asserts that the preambles are "essential to understand the 'all traffic traversing the boundary' limitation in the body of the claims." Prelim. Resp. 23. We discuss the understanding of those limitation in our analysis below, determining the preambles to be limiting in the context discussed.

D. Legal Standards – Obviousness

The U.S. Supreme Court sets forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

As explained by the Supreme Court in *KSR International Co. v. Teleflex Inc.*,

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”)).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted).

“[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

E. Obviousness over Law

Petitioner asserts that claim 1–27 are unpatentable over Law. Pet. 12. Petitioner addresses each limitation of claim 1 and provides the testimony of Dr. Jacobson in support of its position with respect to them. Pet. 14–52; Ex. 1003 ¶¶ 59–110. Petitioner also addresses the limitations of independent claims 8, 15, and 21, referencing the analysis of independent claim 1. Pet. 52–56.

Patent Owner does not contest Petitioner’s assertions for limitations [1.2] and [1.4]–[1.6] of claim 1. *See generally* Prelim. Resp. For the uncontested limitations ([1.2], [1.4]–[1.6]), we have considered Petitioner’s evidence and arguments with respect to these limitations, including the relevant testimony of Dr. Jacobson and find it to be sufficient to show that

Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests these limitations. Accordingly, we focus our discussion on contested limitations [1.0], [1.1] and [1.3], and Patent Owner's arguments regarding these limitations. We begin with a brief discussion of Law, and then consider Petitioner's arguments with respect to limitations [1.0], [1.1] and [1.3], as well as Patent Owner's arguments asserting deficiencies in those limitations.

1. Law

Law is directed to a Unified Threat Management System ("UTMS") for securing network traffic in a process control system. Ex. 1005, code (54), Abs. An exemplary implementation of the system is provided in Figure 3 and is reproduced below:

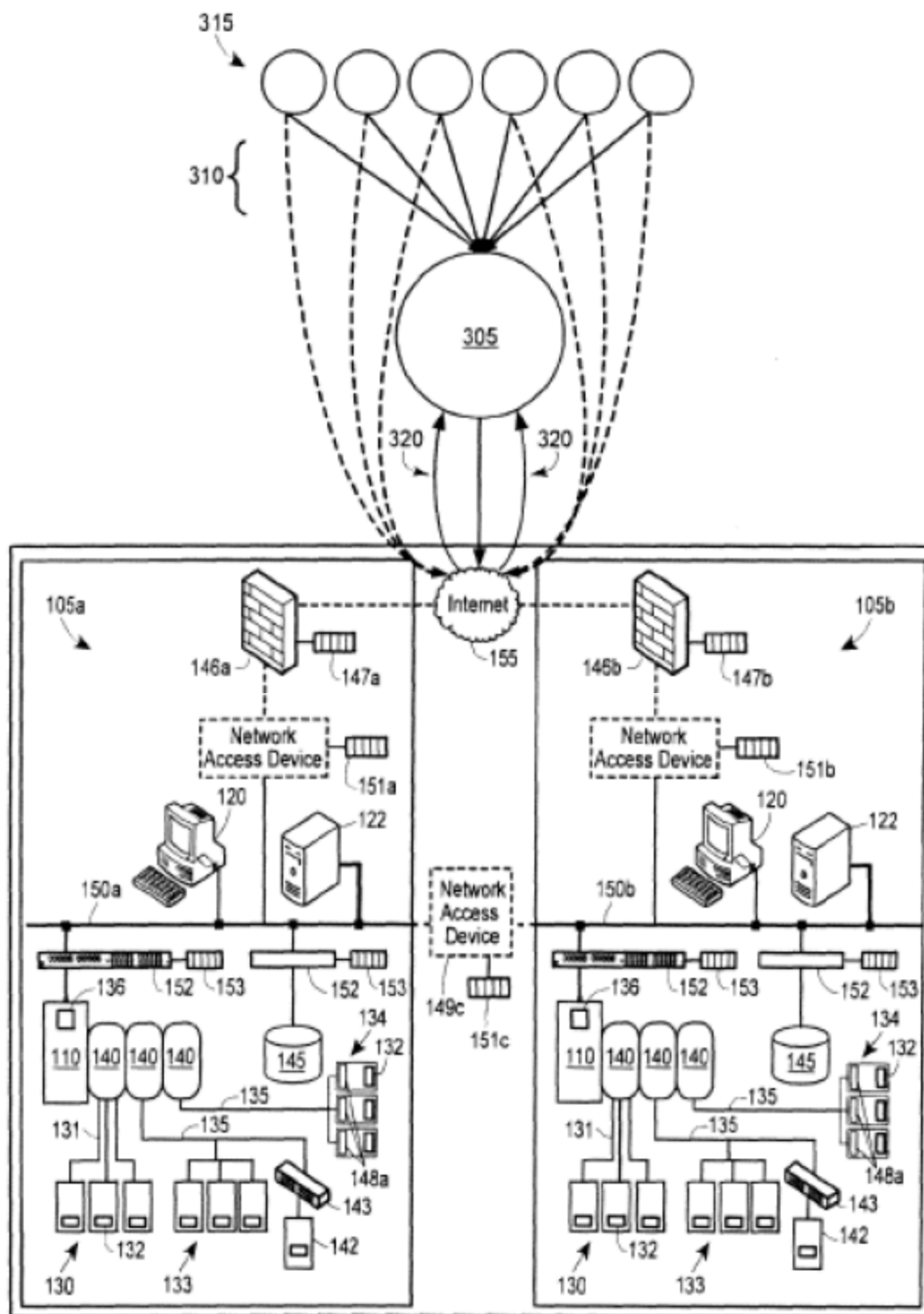


Fig. 3

Fig. 3 of Law illustrates the updating of rulesets of the UTMS

Law discloses UTMS-configured network devices, such as firewalls 146a and 146b, that implement “one or more rulesets to inspect and drop malicious packets from the network before the malicious packets can reach their intended destination.” *Id.* ¶ 52. Firewalls 146a and 146b protect network 150, which may include subnetworks 150a and 150b. *Id.* ¶¶ 54–55.

Law discloses that cyber security risk management firm 305 may distribute rulesets to Law’s firewalls over the Internet. *Id.* ¶¶ 66, 88, Fig. 3. In turn, cyber security risk management firm 305 may formulate rulesets based on aggregated threat data 310 from various third-party sources 315, which include cyber-security threat intelligence providers such as “the Vulnerability Research Service (VRS) of Assurent Secure Technologies.” *Id.* ¶ 92. Cyber security risk management firm 305 is a “perpetual service that proactively supplies the UTMS-configured firewalls ... with” updated “rulesets to meet the latest security threats.” *Id.* ¶¶ 22, 88 (disclosing that “the various rulesets ... require updates to remain effective against network threats”).

Law also provides its UTMS in the context of protecting a “process control network,” such as a communication network implemented in the context of “process control systems like those used in power generation, chemical, petroleum, or other processes.” Ex. 1005 ¶ 3. Petitioner asserts that persons of ordinary skill in the art would have understood the applicability of Law’s UTMS to protecting any network. Pet. 13 (citing Ex. 1003 ¶ 58).

2. *Claim Limitation [1.0]*

i) *Petitioner's Assertions*

Claim limitation [1.0], the preamble of independent claim 1, is directed to a method of filtering packets. Petitioner asserts that Law discloses the filtering of packets, with Law's firewalls 146a and 146b each corresponding to the claimed "packet security gateways," and located at the perimeter of a network. Pet. 14 (citing Ex. 1005 ¶ 22, Fig. 1A; Ex. 1003 ¶ 59). Petitioner points to Law's disclosure that "[t]he communication network 150a, 150b may be a local area network (LAN) ... and may be implemented using hardwired or wireless technology" including "standard protocols such as Ethernet." *Id.* at 15 (quoting Ex. 1005 ¶ 55).

Petitioner also asserts that persons of ordinary skill in the art would have understood that Law's perimeter UTMS firewalls 146a and 146b are gateways, as they are firewalls that separate a LAN (e.g., LANs 150a and 150b) from the Internet. Pet. 17 (citing Ex. 1003 ¶ 61). In addition, the firewalls are configured to perform one or more operations on a packet. *Id.* (citing Ex. 1005 ¶ 103; Ex. 1003 ¶ 61). Petitioner also asserts that firewall 146a provides the entire interface across a boundary of a network protected by the firewall 146a (LAN 150a) and one or more networks other than the network protected by firewall 146a (Internet 155). *Id.* at 18 (citing Ex. 1005, Fig. 1A; Ex. 1003 ¶ 62). In addition, Petitioner asserts that, based on the descriptions in Law, one of ordinary skill in the art would have understood the firewalls to provide the entire interface, because it was acknowledged that any external connection into a process control system network presents a possible point of attack into the system. *Id.* at 19 (citing Ex. 1005 ¶ 10). Petitioner also asserts that Law's express disclosure of an alternative

“bypass” embodiment further confirms that the non-bypass embodiments, such as those illustrated in Figures 1A and 3, necessarily provide the entire interface across the boundary of the network protected by firewalls. *Id.* at 21 (citing Ex. 1003 ¶ 65).

ii) Patent Owner’s Arguments

Patent Owner argues Law fails to teach or suggest that the PSGs collectively provide an interface across a boundary of the protected network. Prelim. Resp. 29. Patent Owner argues that Law’s firewalls 146a and 146b each protect its own network, i.e. LAN 150a and LAN 150b, respectively, such that either LAN becomes part of the “one or more networks other than the network protected by the PSG.” *Id.* at 30–32. Patent Owner also argues that even if LANs 150a and 150b are joined into a single network, as Petitioner alleges, claim 1 requires “a packet security gateway, of a plurality of packet security gateways that collectively provide an entire interface across a boundary of a network protected by the packet security gateway,” such that firewall 146a does not protect LAN 150b. *Id.* at 32–33.

We do not agree with Patent Owner’s arguments. Under Petitioner’s discussion of Law, Internet 155 is the other network and LANs 150a and 150b constitute a single network through network access device 149c. If we take the LANs as a single network, then intrusions prevented by either firewall would protect the overall network collectively. As discussed below, we are persuaded, by Petitioner, that one of ordinary skill in the art would have regarded the paired LANs of Law as viewable as a single network, when compared to the Internet, and each firewall would provide protections to the single network.

Patent Owner also argues that Law does not teach or suggest that network access device 149c joins LANs 150a and 150b into a single network because these networks still need to communicate with each other over yet another network, such as the Internet. Prelim. Resp. 33–35. Patent Owner also argues that a device that controls network access between two sub-systems or a sub-system and the Internet does not transform two separate networks into one. *Id.* at 34–35.

We do not agree with Patent Owner’s arguments. As Petitioner points out, Law refers to “network 150,” rather than separately specifying subnetworks 150a and 150b. Pet. 21 (citing Ex. 1005 ¶ 55). We also agree with Petitioner that all network traffic between joined LANs 150a and 150b and the Internet must pass through either firewall 146a or 146b, and that Law’s disclosure of an alternative “bypass” embodiments confirms that ordinarily skilled artisans would have viewed firewalls 146a and 146b as providing the entire interface across the boundary of the network. *Id.* (citing Ex. 1003 ¶¶ 64–65).

We have considered Petitioner’s evidence and arguments with respect to limitation [1.0], including the relevant testimony of Dr. Jacobson, and Patent Owner’s traversing arguments, and find Petitioner’s evidence and arguments to be sufficient to show that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests this limitation.

3. *Claim Limitation [1.1]*

i) *Petitioner’s Assertions*

Claim limitation [1.1] is directed to the step of receiving from a security policy management server, external from the network, a first set of

packet filtering rules to be applied to all network traffic traversing the boundary. Petitioner asserts that Law’s cyber security risk management firm 305 corresponds to the claimed “security policy management server,” and is located on an external network (i.e., Internet 155), and distributes to Law’s perimeter UTMS firewalls 146a and 146b a dynamic security policy comprising a first set of packet filtering rules to be applied to all network traffic traversing the boundary between protected network 150 and Internet 155. Pet. 23–24 (citing Ex. 1005 ¶¶ 22, 66, 88, 92, Fig. 3; Ex. 1003 ¶ 69).

Petitioner also asserts that because cyber security risk management firm 305 distributes ruleset 147 to perimeter UTMS firewalls 146a and 146b over the Internet 155 (Ex. 1005 ¶¶ 66, 88), a person of ordinary skill in the art would have understood that firm 305 necessarily comprises a server. Pet. 26–27 (citing Ex. 1003 ¶ 71). In addition, although Law details that specific rulesets correspond to specific firewalls, persons of ordinary skill in the art would have understood that firewalls 146a and 146b may apply the same ruleset, which Law also identifies as “ruleset[] 147.” *Id.* at 27 (citing Ex. 1005 ¶ 88; Ex. 1003 ¶ 71).

ii) Patent Owner’s Arguments

Patent Owner points to the language of limitation [1.1], which provides “a dynamic security policy comprising a first set of packet filtering rules to be applied to all network traffic traversing the boundary.” Prelim. Resp. 36. Patent Owner argues that Petitioner’s arguments for this limitation fail because each of Law’s firewalls applies a different ruleset tailored to the particular network it protects. *Id.* Patent Owner argues that based on the teachings of Law, its firewalls (146a, 146b) would have included unique rulesets having rules that target the specific threats and vulnerabilities of the

particular devices, applications, and other components deployed in the respective sub-systems that they protect, such that the different firewalls would not apply the same first set of packet filtering rules. *Id.* at 36–38 (citing Ex. 1005 ¶¶ 22, 88–89).

We do not agree with Patent Owner’s arguments. Petitioner asserts that Law details that “[w]here the UTMS-configured device is a perimeter device,” such as perimeter UTMS firewalls 146a and 146b, “the rulesets 147 and 151 may include a global set of rules for access to any device within the subsystems 105a, 105b.” Pet. 30 (quoting Ex. 1005 ¶ 51). Based on this, we agree with Petitioner that persons of ordinary skill in the art would have understood that perimeter UTMS firewalls 146a and 146b would have applied ruleset 147 to all network traffic passing therethrough. *Id.* (citing Ex. 1003 ¶ 77). Additionally, if ordinarily skilled artisans would have viewed subsystems 105a, 105b as a single network, per Petitioner’s assertions, they also would have been motivated to have Law’s firewalls protect against threats common thereto, and would have applied, at least partially, a common ruleset to both firewalls.

We have considered Petitioner’s evidence and arguments with respect to limitation [1.1], including the relevant testimony of Dr. Jacobson, and Patent Owner’s traversing arguments, and find Petitioner’s evidence and arguments to be sufficient to show that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests this limitation.

4. *Claim Limitation [1.3]*

i) *Petitioner's Assertions*

Claim limitation [1.3] details that the first packet filtering rules include packet matching criteria corresponding to one or more network addresses and were automatically created or altered by the SPMS based on aggregated malicious traffic information. Petitioner asserts that Law details that each packet filtering rule in ruleset 147 applied by the perimeter UTMS firewalls 146a and 146b comprises packet matching criteria. Pet. 35–36 (citing Ex. 1005 ¶¶ 102–103; Ex. 1003 ¶ 86).

Petitioner also asserts that Law discloses rules that were automatically created by the security policy management server, and that persons of ordinary skill in the art would have found it obvious for at least a portion of the constructed rules to have been constructed automatically. Pet. 36–38 (citing Ex. 1003 ¶ 89). Additionally, Petitioner asserts that Law expressly discloses automatically updating (i.e., altering) rulesets in response to detected conditions. *Id.* at 38–39 (citing Ex. 1005 ¶¶ 83, 88–89).

ii) *Patent Owner's Arguments*

Patent Owner argues that Petitioner's theory with respect to this limitation is flawed because the UTMS-configured firewall devices in Law do not receive newly created rulesets from firm 305, because the initial ruleset 147 is created by operators within the process control system, and because, while firm 305 provides updates to these operator-created rulesets 147, it does not do so automatically because IT personnel are still required to update rulesets when new threats are detected. Prelim. Resp. 39. Patent Owner continues that operators within the process control system create the initial ruleset 147 and the first set of rules, and firm 305 is simply leveraged

as a remediation service that provides updates to ruleset 147 when new threats are detected. *Id.* at 39–43 (citing Ex. 1005 ¶¶ 16, 23, 30, 81, 88–90). Patent Owner argues that, at best, Law’s UTMS-configured firewall devices receive updates to the operator-created ruleset 147 from firm 305. *Id.* at 44–51.

We do not agree with Patent Owner’s arguments. We are not persuaded that the received packet filtering rules (limitation [1.1]) need be the first set of rules to be applied or modified by the PSGs. As such, this comports with the system in Law, since an initial ruleset can be created by operators, and the claimed “first set of packet filtering rules” would be an update to that initial ruleset, received from firm 305. We are persuaded by Petitioner that Law expressly discloses automatically updating (i.e., altering) rulesets in response to detected conditions, and that those updated rulesets would have been distributed for use. *See* Pet. 36–39 (citing Ex. 1005 ¶¶ 21, 83, 88–89).

We have considered Petitioner’s evidence and arguments with respect to limitation [1.3], including the relevant testimony of Dr. Jacobson, and Patent Owner’s traversing arguments, and find Petitioner’s evidence and arguments to be sufficient to show that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests this limitation.

5. *Independent Claims 8, 15, and 21*

As noted above, Petitioner also addresses the limitations of independent claims 8, 15, and 21, referencing the analysis of independent claim 1. Pet. 52–56. Patent Owner does not separately address the limitations of the other independent claims, other than asserting that they

recite the same or similar recitations as recited by independent claim 1⁶. Prelim. Resp. 29–32. We have considered Petitioner’s evidence and arguments with respect to these limitations and find Petitioner’s evidence and arguments to be sufficient to show that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests the limitations of independent claims 8, 15, and 21.

6. *Dependent Claims 2–7, 9–14, 16–20, and 22–27*

Petitioner also addresses the limitations of dependent claims 2–7, 9–14, 16–20, and 22–27. Pet. 57–63. Patent Owner does not separately address the limitations of the dependent claims. *See generally* Prelim. Resp. We have considered Petitioner’s evidence and arguments with respect to the limitations of the dependent claims and find Petitioner’s evidence and arguments to be sufficient to show that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Law teaches or suggests the limitations of dependent claims 2–7, 9–14, 16–20, and 22–27.

F. Other Obviousness Grounds

Having determined that Petitioner has demonstrated a reasonable likelihood of prevailing on the basis of the first ground applying Law alone, applicable to all challenged claims, we do not explicitly address the patentability challenges on the basis of the remaining grounds. We also note that Patent Owner does not separately address the additional grounds, other than arguing that the additional references fail to “cure any of Law’s deficiencies as set forth above,” i.e., raising arguments only against the

⁶ Patent Owner’s Preliminary Response does not appear to address the limitations of independent claim 21, although included in the ground of unpatentability over Law.

ground applying Law alone. *See* Prelim. Resp. 51–52. Because Petitioner has satisfied the threshold for institution as to at least one claim, we institute an *inter partes* review on all claims and all grounds raised in the Petition. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (interpreting the relevant statutory provisions, in light of *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018), to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

III. CONCLUSION

For the foregoing reasons, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that at least one claim of the ’266 Patent is unpatentable.

IV. ORDER

Accordingly, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–27 of the ’266 Patent on the following asserted grounds:

Claims 1–27 under 35 U.S.C. § 103(a) as unpatentable over Law;

Claims 1–24 under 35 U.S.C. § 103(a) as unpatentable over Law and Wood;

Claims 6, 13, 19, and 26 under 35 U.S.C. § 103(a) as unpatentable over Law and Jungck; and

Claims 6, 13, 19, and 26 under 35 U.S.C. § 103(a) as unpatentable over Law, Wood, and Jungck;

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FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, the trial commencing on the entry date of this Decision.

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