No. 23-____

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

IN RE CENTRIPETAL NETWORKS, LLC,

Petitioner.

On Petition for Writ of Mandamus to the
United States Patent and Trademark Office,
No. IPR2022-00182

PETITION FOR WRIT OF MANDAMUS

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CERTIFICATE OF INTEREST

Counsel for Petitioner certifies the following:

1.   The full name of every party or amicus represented by me is:

Centripetal Networks, LLC

2.   The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

Not Applicable.

3.   All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

CNI Holdings, Inc.

4.   The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Kramer Levin Naftalis & Frankel LLP: James Hannah, Jeffrey H. Price, and Jenna Fuller

Banner & Witcoff, Ltd.: Bradley C. Wright, Scott M. Kelly, and John R. Hutchins

Dowd Scheffel PLLC: Matthew J. Dowd and Robert J. Scheffel

5.   The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. See Fed. Cir. R. 47. 4(a)(5) and 47.5(b). (The parties should attach continuation pages as necessary):

None

6.   Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6): **None**

Date: <u>March 23, 2023</u>   <u>*/s/ Matthew J. Dowd*   </u>
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TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Administrative Proceedings

Statutes

Rules

INTRODUCTION

In our system of separation of powers, executive-branch officials sometimes perform adjudicatory tasks that have more in common with judicial proceedings than the discretionary responsibilities ordinarily associated with the executive. There are few better examples than proceedings before the Patent Trial and Appeal Board ("PTAB" or "Board") and its Administrative Patent Judges ("APJs"). The stakes and procedures have more in common with a patent suit in federal court than a typical executive-branch action. Despite all that, the presumptively applicable disqualification provisions for APJs are the general rules that apply to all executive-branch officials, not the more stringent rules that apply to Article III adjudicators.

There is, however, one critical feature of the executive-branch rules that permits executive-branch officials, including APJs, to account for the distinct circumstances—and distinct appearance-of-partiality concerns— that arise when executive officials assume adjudicative roles similar to Article III judges: The Office of Government Ethics ("OGE") regulations require recusal where, under the circumstances, there is a material risk of the appearance of partiality. Petitioner Centripetal Networks, LLC

("Centripetal") sought to invoke that provision but was punished for having the temerity to raise the issue. The Board's response is such an extraordinary departure from basic fairness and the administration of justice that the extraordinary relief of mandamus is necessary.

The stakes and circumstances of this case demanded the Board's nuanced consideration and perhaps an ounce of empathy. Centripetal received none of the above. Centripetal was not just any patent holder facing the prospect of proceedings to vitiate a hard-won patent (though that alone should suffice for APJs to consider perceptions of partiality with great care). Centripetal had already obtained an impressive and costly victory against a corporate behemoth in a patent infringement trial, only to lose it due to a judicial recusal oversight involving a financial interest in the infringer, Cisco Systems, Inc. ("Cisco"), worth less than $5,000. The prospect of having one of the same patents from the trial canceled by APJs owning up to $15,000 in Cisco stock struck Centripetal—and would strike any reasonable observer aware of the circumstances—not just as creating an appearance of partiality, but as well-nigh unfathomable, particularly in view of Cisco's decision not to appeal the district court's validity ruling.

Centripetal raised its concerns in a recusal motion in the context of an institution decision and Cisco's motion to intervene (the latter was filed because the time had long passed for Cisco to file its own IPR to challenge the patent). It would have been bad enough if the recusal motion had been denied without more, but what transpired next was far worse. Despite the extraordinary circumstances and the fact that the motion precipitated two APJs to recuse after voting to institute *inter partes* review and to allow Cisco to join the proceedings, Centripetal's motion was characterized as "frivolous," and Centripetal was chastised for having filed it. With that, the Board sent a message to the entire patent bar: Any attempt to hold APJs to standards comparable to those of Article III judges would be met with sanctions. Then, adding retaliation to injury, the reconstituted panel denied Centripetal its counsel of choice, in part because he signed the recusal motion while his unopposed *pro hac vice* motion was pending.

This extraordinary departure from basic elements of due process demands an extraordinary remedy. Indeed, mandamus is particularly appropriate here, as the reviewability of the failure to recuse at the institution stage on review of a final PTAB determination is unsettled, and

- 3 -

the misguided message sent to the PTAB bar should not go unremedied. The very fact that there is a PTAB bar to which attorneys can be denied admission underscores that the PTAB is no ordinary executive-branch component, and that its APJs are no ordinary executive-branch officials. It beggars belief that parties could be sanctioned and chastised for asking APJs to recuse themselves to avoid the appearance of partiality and for expecting that APJs be held to a higher standard than the lower, generally applicable safe harbor from criminal prosecution. The extraordinary decisions and orders here should not be allowed to stand.

JURISDICTIONAL STATEMENT

This Court has jurisdiction under the All Writs Act, 28 U.S.C. § 1651.

RELIEF SOUGHT

Centripetal seeks a writ of mandamus instructing the PTAB to vacate, on an emergency basis, all decisions in IPR2022-00182, including the grant of institution and the joinder of Keysight Technologies, Inc., and Cisco Systems, Inc. The PTAB should be further instructed to constitute a new panel of APJs, free of any conflict, to reconsider the PAN IPR petition.

ISSUE PRESENTED

Do executive-branch regulations and appearance-of-impropriety concerns compel recusal and vacatur when, after this Court has reversed a multibillion-dollar willful-infringement judgment because the district court's wife held less than $5,000 in stock in the infringer and the judge chose to divest the stock into a blind trust rather than via an outright sale, (1) an APJ votes to institute *inter partes* review on one of the same patents at issue in the district-court litigation while knowingly owning considerably more stock in the same party, (2) the same APJ votes to join the party in which he owns stock after being apprised of the issue, (3) the Board threatens sanctions in response to a good-faith recusal motion based on the financial interest, and (4) the Board refuses to admit the movant's counsel of choice to the PTAB bar in part because he signed the recusal motion?

BACKGROUND

I.   The Litigation Between Cisco And Centripetal

Cisco and Centripetal have been litigating the validity and infringement of several Centripetal patents for years now. In the first round of litigation, Centripetal sued Cisco for its willful infringement of patents directed to "systems that perform computer networking security

functions." *Centripetal Networks, Inc. v. Cisco Sys., Inc.*, 38 F.4th 1025, 1027 (Fed. Cir. 2022). The district court (Morgan, J.) presided over a 22-day bench trial that "included an over 3,507-page record, 26 witnesses, and over 300 exhibits." *Id.* at 1028. Judge Morgan ultimately ruled "that Cisco willfully infringed the asserted claims of the '856, '176, '193, and '806 patents" and awarded Centripetal more than $2 billion in damages and pre-judgment interest, plus a running royalty. *Id.* at 1029.

This Court reversed—but not on the merits. After trial ended but before he issued his opinion, Judge Morgan learned that his wife owned roughly $4,500 of Cisco stock. *Id.* Judge Morgan immediately disclosed this to the parties, "explaining that the shares 'did not and could not have influenced [his] opinion on any of the issues in this case'" because he was unaware of them, and advising the parties that "'[a] full draft of [his] opinion had [already] been prepared'" and that "[v]irtually every issue was [already] decided." *Centripetal Networks, Inc. v. Cisco Sys., Inc.*, 492 F. Supp. 3d 615, 617 (E.D. Va. 2020). Judge Morgan then "divest[ed] the Cisco shares into a blind trust," rather than sell them outright, as he thought "an outright sale" would create the "appear[ance]" that he had

- 6 -

secured a "benefit" by unloading Cisco stock on the eve of a substantial ruling against the company. *Id.* at 624.

On appeal, this Court reversed, holding that Judge Morgan should have sold the stock outright and that his decision to divest into a blind trust was not harmless under *Liljeberg v. Health Services Acquisition Corp.*, 486 U.S. 847 (1988). The Supreme Court denied certiorari, *Centripetal Networks, Inc. v. Cisco Sys. Inc.*, 143 S. Ct. 487 (2022), and the case is now on remand before a new district judge.

II. The Board Grants The IPR Petition Of Palo Alto Networks And Cisco's Joinder Motion, Despite The APJ's Stock Ownership In Cisco

Palo Alto Networks, Inc. ("PAN") filed a petition for *inter partes* review ("IPR") not long after Judge Morgan entered final judgment, alleging that claims 1, 24, and 25 of Centripetal's '856 patent are unpatentable over the same prior-art patents that were already litigated in the Cisco trial—despite the fact that the district court had upheld the '856 patent's validity over the same prior art. The petition, which PAN filed even though Centripetal has never asserted the '856 patent against it, was assigned to a panel of three APJs: APJs McNamara, Amundson, and Moore.

See Appx026 (Paper 11).[1] The panel instituted IPR on May 25, 2022,

finding that PAN showed a reasonable likelihood of proving claims 1, 24,

and 25 unpatentable, again despite the district court having reached the

exact opposite conclusion after considering the very same art upon which

the PTAB instituted. Appx002 (Paper 55). Centripetal requested rehear-

ing of that decision on June 8, 2022. *See* Paper 13.

A few months later, while its rehearing petition was still pending,

Centripetal learned that APJ McNamara, one of the three panelists who

had voted to institute (and ignored the evidence for non-institution from

the Cisco trial), owns between $1,001 and $15,000 of stock in Cisco.

While Cisco at this point was not a party in the IPR, it was a direct ben-

eficiary of PAN's challenge to the '856 patent. That understates the

point: As evidenced by the now-vacated district court judgment, Cisco's

attempts to escape liability for willfully infringing Centripetal's pa-

tents—including the '856 patent—involve billions of dollars of potential

liability, and Cisco will materially benefit if PAN's IPR results in cancel-

ing the '856 patent. Nevertheless, APJ McNamara has knowingly owned

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[1] Docket entries in the IPR proceeding are cited as "Paper __" or "Ex. __"
and are publicly available at https://ptacts.uspto.gov/ptacts/ui/home.

Cisco stock for years now, including in 2018, when he sat on every single panel deciding the fourteen IPR petitions Cisco filed against Centripetal. *See* Exs. 2030–2035; Ex. 2029 ¶¶2, 4.

APJ McNamara's 2014–2019 financial disclosures further revealed that he has continued to receive an annual share of profits from the law firm Foley & Lardner LLP, *see* Ex. 2031 at 6; Ex. 2033 at 7 (disclosing "[c]ontinued participation in earnings of firm as retired partner" with amounts varying each year and ranging from $30,000 to $60,000); Exs. 2030–2035; Ex. 2029, ¶3, which represents Cisco in lobbying efforts, *see* Ex. 2037 at 15–16, Exs. 2038–2041; Ex. 2029, ¶6, and recently listed Cisco as its "most lucrative contract" in at least one state, Ex. 2037 at 15. Indeed, APJ McNamara was featured on the Foley website until June of last year. Ex. 2036. During that time, however, APJ McNamara decided numerous petitions brought by Cisco against Centripetal, as noted above.

In light of these discoveries, Centripetal filed a motion seeking recusal and vacatur of the decision to institute IPR, Paper 37, consistent with executive-branch regulations supporting recusal where an official's "financial interest" in a party or case "is likely to raise a question in the mind of a reasonable person about his impartiality." 5 C.F.R.

§ 2635.502(e); *see also id.* § 2635.502(a) (requiring employees to seek counsel when a matter "is likely to have a direct and predictable effect on [his] financial interest" and "the circumstances would cause a reasonable person with knowledge of the relevant facts to question his impartiality"). The motion argued that the "entire panel" was "tainted with APJ McNamara's conflict," Paper 37 at 2, and it was signed by Centripetal's lead trial counsel, Paul J. Andre, who the day before had filed a standard, unopposed motion for *pro hac vice* admission to the PTAB to continue his representation of Centripetal now in Board proceedings.

While the motion for recusal and vacatur was still pending, the Board—including APJ McNamara—issued three orders on January 4, 2023. First, the Board denied Centripetal's by-then-months-old request for rehearing of the panel's initial institution decision. Paper 40. The Board also granted two motions for joinder in PAN's IPR: one for Keysight (filed in IPR2022-01199), and the other for Cisco (filed in IPR2022-01151). *See* Papers 39, 41. Both Keysight and Cisco were time-barred under 35 U.S.C. § 315(b) from filing their own IPR petitions against the '856 patent. But for the decision to institute IPR on PAN's petition—which PAN filed even though Centripetal has never asserted

- 10 -

the '856 patent against PAN—neither Keysight nor Cisco would have been able to challenge the '856 patent. *See* IPR2022-01151, Ex. 2005 (Amended Complaint against Cisco, Mar. 29, 2018); IPR2022-01199, Paper 8 (Patent Owner's Opposition to Keysight's Motion for Joinder).

The day after signing onto these decisions (including the decision to join otherwise-time-barred Cisco), APJ McNamara abruptly withdrew from the panel. Paper 43. APJ McNamara did not deny his stock ownership; instead, he claimed that it "has been a matter of public record for ten years," *id.* at 3, and tried to downplay the stock as "less than 0.04% of the value" of his disclosed assets, *id.* at 2 n.1. As to why he was withdrawing in response to a request he called "without merit," APJ McNamara stated only that his withdrawal was to "reduce the number of issues and simplify the briefing." *Id.* at 3.

APJ Amundson followed suit less than two weeks later, withdrawing from the panel—but only after he also gratuitously opined that Centripetal's motion "lacks merit" on both APJ McNamara's conflict and his influence on the remainder of the panel. Paper 47 at 3. APJ Amundson repeated APJ McNamara's unexplained "reduce the number of issues" basis for withdrawing. *Id.* But, like APJ McNamara, APJ Amundson

identified no issues that were now eliminated, given that APJ Moore—the third member of the original panel—did not withdraw.

After APJs McNamara and Amundson withdrew, the Board issued a Panel Change Order noting that the new panel would have two APJs not previously involved in the matter "[d]ue to" APJ McNamara and Amundson's "unavailability." Paper 51 at 2. Despite adding two new APJs (Khan and Wormmeester) alongside APJ Moore, the Panel Change Order made clear that "[a]ll prior decisions and orders" entered by the original panel "remain in effect." *Id.* The newly constituted panel set oral argument for February 15, 2023. Paper 53 at 2.

III. The Board Denies Centripetal's Vacatur Motion, Calling It "Highly Inappropriate"

On February 3, 2023, the newly constituted panel denied Centripetal's motion for vacatur. Appx001 (Paper 55). The Board ruled that because (1) "Cisco was not a party to this proceeding at the time of the Institution Decision" and (2) the value of APJ McNamara's holding in Cisco was sufficiently small to come within the executive-branch safe harbor from criminal prosecution, *see* 5 C.F.R. § 2640.202, the stock ownership was not disqualifying under the applicable ethics rules. Appx009–011, Appx016 (Paper 55). In so ruling, the Board said nothing the

original panelists' knowledge that Cisco would immediately benefit from the decision of the now "unavailable" APJs to institute against Centripetal's '856 patent. Nor did it address the initial panel's decision to grant Cisco's own motion to join the proceedings on the way out the door after Centripetal had raised the stock-ownership and appearance-of-partiality issues.

What the Board did say, however, is chilling. The Board decried Centripetal's recusal-vacatur motion as "frivolous," "glaringly deficient," "lacking in substance," without "competent, good faith argument," and "highly inappropriate." Appx013–014; Appx022. The Board also criticized Centripetal for filing its motion within three months—from September 2022, when it learned of APJ McNamara's financial conflict, until December 2022—and suggested that Centripetal should have instead raised the matter "immediately," Appx022, apparently without any due diligence and despite the fact that Centripetal still has not been able to obtain APJ McNamara's more recent financial disclosures. And although it acknowledged Centripetal's right "to be heard by a disinterested decision-maker," the Board warned that, if Centripetal made further

arguments about the Board's or the APJs' conflict of interest, such "baseless" arguments "may be met with sanctions." Appx014–015.

It did not take long for the Board to make good on that warning. On February 7, 2023, the Board rejected the motion for *pro hac vice* admission of Paul J. Andre, who sought to represent Centripetal in these Board proceedings, in part because Mr. Andre had signed the recusal motion—which it again described as "frivolous." Paper 56 at 4. The Board did not explain how a motion based on a known stock-ownership conflict and that resulted in the self-withdrawal of two of the three APJs, *see* Papers 43 & 47, could be "frivolous"—especially against the backdrop of this Court's vacatur of the district court's multibillion-dollar judgment for a less serious conflict.

The Board is expected to issue a final written decision by May 25, 2023. *See* 35 U.S.C. § 316(a)(11) (requiring "final determination" within one year of instituting *inter partes* review); Appx026 (Paper 11) (instituting review on May 25, 2022).

STANDARD OF REVIEW

A party seeking mandamus under 28 U.S.C. § 1651(a) typically must show that (1) it has "no other adequate means to attain the relief

[it] desires"; (2) its right to relief is "clear and indisputable"; and (3) "the writ is appropriate under the circumstances." *Cheney v. U.S. Dist. Court for Dist. of Columbia*, 542 U.S. 367, 381 (2004); *see also Cobell v. Norton*, 334 F.3d 1128, 1139 (D.C. Cir. 2003) (collecting cases from various circuits applying mandamus to judicial recusals).

That said, there are "'narrow circumstances' in which mandamus relief is granted because 'doing so is important to proper judicial administration.'" *In re Stingray IP Sols., LLC*, 56 F.4th 1379, 1383 (Fed. Cir. 2023) (quoting *In re Micron Tech., Inc.*, 875 F.3d 1091, 1095 (Fed. Cir. 2017)); *see also In re ZTE (USA) Inc.*, 890 F.3d 1008, 1011 (Fed. Cir. 2018) (granting a petition for mandamus that "present[ed] two such 'basic' and 'undecided' issues relating to proper judicial administration").

In such cases, the court has "not separately required petitioners to show satisfaction of *Cheney*'s three requirements." *Stingray*, 56 F.4th at 1382 (citing cases). This case plainly fits that bill. *See, e.g., In re Fed. Sav. & Loan Ins. Corp.*, 852 F.2d 565, 1988 WL 76272, at *4 (4th Cir. 1988) (table) (per curiam) (erroneous denial of recusal required court of appeals to exercise supervisory control by issuing mandamus). In all

events, Centripetal satisfies *Cheney*'s "demanding" three-part standard, 542 U.S. at 381, as set forth below.

ARGUMENT

I.   Centripetal's Right To Relief Is Clear And Indisputable

After seeing its multibillion-dollar willful-infringement judgment against Cisco wiped away because the district judge's spouse owned less than $5,000 in Cisco stock and the judge's chosen means of divestiture (a blind trust) was deemed insufficient to cure the conflict, the last thing Centripetal expected was to have a different adjudicator owning even more Cisco stock presiding over proceedings that could cancel one of the very same Centripetal patents upheld in the district-court litigation. It is difficult to imagine a party in that scenario not crying foul, or a reasonable observer not having concerns about the appearance of unfairness and partiality. It is even more difficult to imagine that the mere act of raising such concerns would be met with anything short of serious deliberation. Yet when Centripetal filed a good-faith motion for recusal and vacatur based on the stock ownership and appearance of partiality, the Board lambasted its motion as "frivolous," "baseless," and "highly inappropriate," Appx013–015 (Paper 55), warned that future efforts to raise

- 16 -

these issues "may be met with sanctions," Appx022, and then denied the unopposed motion for admission to the PTAB bar of a lawyer who sought to represent Centripetal, in part because he signed the recusal motion, Paper 56 at 4. The message to Centripetal and the entire patent bar was unmistakable.

The Board apparently believed that Centripetal's motion was frivolous because, in its view, the regulatory safe harbor from criminal liability under 18 U.S.C. § 208—under which "an officer or employee of the executive branch" commits a federal crime by "participat[ing] personally and substantially . . . in a judicial or other proceeding . . . in which, to his knowledge, he" or his family "has a financial interest" in a party before him—is the alpha and omega of the inquiry. *See* Appx009–Appx011 (Paper 55). That was a clear and unmistakable legal error. To be sure, 5 C.F.R. § 2640.202 insulates executive-branch officials from criminal punishment for working on a matter involving a party in which they own less than $15,000 of stock. But the Office of Government Ethics ("OGE") regulations do not stop there; they separately require executive-branch officials to recuse from matters where their participation raises concerns about an appearance of partiality. That obligation is independent of the

$15,000 criminal safe harbor; indeed, because officials presumably wish to avoid criminal exposure, the appearance-of-partiality provision will have its principal application to financial holdings below the criminal threshold.

"Consistent with the fundamental principle that public service is a public trust," OGE regulations require all federal employees, not just officers wielding significant federal power or those acting in an adjudicative capacity, to "comply with the requirements of government ethics laws and regulations, including any applicable financial disclosure requirements," and to ensure that they do not "los[e] impartiality or appear[] to lose impartiality in carrying out official duties." 5 C.F.R. § 2638.102 (emphasis added); *see also id.* § 2635.101 ("Employees shall not hold financial interests that conflict with the conscientious performance of duty.").

The regulations further provide that all federal employees likewise must "take[] appropriate steps to avoid an appearance of loss of impartiality in the performance of [their] official duties," including by, among other things, "not participat[ing] in a particular matter involving specific parties which [they] know [are] likely to affect the financial interests of a

member of [their] household . . . if [they] determine[] that a reasonable person with knowledge of the relevant facts would question [their] impartiality in the matter." *Id.* § 2635.501(a).

While the OGE regulations in general, and the appearance-of-partiality restrictions in particular, apply to all executive-branch officials, the latter apply with particular force to executive-branch officials discharging adjudicatory functions. Indeed, the Due Process Clause requires as much. One can fully accept that APJs are executive-branch officials and different from Article III judges yet still recognize that their adjudicative role necessitates some meaningful opportunity to raise concerns about the appearance of partiality that may be created by ownership of a party's stock—even if the amount in question is below the safe harbor from criminal prosecution and may not create an appearance problem for the mine run of executive-branch officials—without worrying that merely raising those concerns will be seen as "inappropriate." *See Commonwealth Coatings Corp. v. Cont'l Cas. Co.*, 393 U.S. 145, 150 (1968) ("[A]ny tribunal permitted by law to try cases and controversies not only must be unbiased but also must avoid even the appearance of bias.").

The circumstances here plainly raise appearance-of-partiality concerns of the first order. APJ McNamara (and the rest of the Board) knew full well that this Court had just thrown out a multibillion-dollar judgment for Centripetal because the district judge's wife's sub-$5,000 Cisco stock holding was deemed too significant an interest even to be placed in a blind trust. APJ McNamara also knew of Cisco's interest in the '856 patent, as that was one of the patents found to be willfully infringed in the federal-court action. Given that context, sitting on the panel that would decide whether to institute IPR on the '856 patent while knowingly holding up to three times as much Cisco stock as proved disqualifying for the district judge plainly would raise an appearance of unfairness and partiality in the eyes of the reasonable observer. And the appearance problem only became more glaring when, after Centripetal filed its recusal motion, APJ McNamara voted to join Cisco to the IPR.

In fact, even APJ McNamara apparently saw enough of an issue with his continued participation in the proceedings to withdraw. Yet he delayed his withdrawal until after he voted to grant Cisco's motion to join. No reasonable observer would fail to see a problem (and an improper effort to shield these issues from appellate review) with that vote-

first-recuse-later course of conduct. After all, if there was a basis to recuse, then APJ McNamara had zero business ruling on the joinder motions and the request for rehearing of the institution decision; and if there was no basis to recuse, then he should not have withdrawn, *see Maier v. Orr*, 758 F.2d 1578, 1583 (Fed. Cir. 1985) ("Absent a factual showing of a reasonable basis for questioning his or her impartiality . . . a judge should participate in cases assigned."). Whichever it is, joining panel decisions that decide critical issues in the teeth of an asserted conflict—and deciding them in favor of Cisco—and then withdrawing from the case the next day is not a valid way to handle Centripetal's valid concerns. It reinforces, rather than remedies, the appearance of partiality.

In these circumstances, the reasonable observer to whom the OGE regulations look would have little to no confidence that Centripetal was receiving a fair shake. Yet the Board gave appearance considerations the back of the hand in denying Centripetal's motion, castigating Centripetal for even raising the conflict issue. Indeed, its opinion wholly ignored the appearance-of-partiality issue.

The Board apparently believed that the amount of stock APJ McNamara owned was of no consequence because it fell within the safe

harbor. But while OGE regulations provide a safe harbor from criminal liability when a "financial interest" in a party that is "publicly traded . . . does not exceed $15,000," 5 C.F.R. § 2640.202; *see* Appx009–011, 016 (Paper 55), they do not allow officials to ignore appearance concerns raised by smaller holdings. In fact, the regulations go on to clarify that federal employees should recuse when a financial holding would, under the circumstances, "raise a question in the mind of a reasonable person about [their] impartiality," even if the holding is small enough that not recusing "would not violate 18 U.S.C. 208(a)." 5 C.F.R. § 2635.502(d); *see also id.* § 2635.502(e) (counseling recusal where "a member of the employee's household" has a "financial interest" that "is likely to raise a question in the mind of a reasonable person about his impartiality").

Those regulations are designed to apply to all executive-branch officials and all the myriad situations that the vast federal bureaucracy may confront. Both law and logic compel the conclusion that what may "raise a question in the mind of a reasonable person about [an official's] impartiality" will depend on the circumstances of the case, the role of the official, and the nature of the proceedings. What may create an unacceptable appearance of impropriety may thus be different from one case

to the next. And while executive-branch adjudicators may not be subject to the same recusal requirements as Article III judges, it cannot be denied that the unique role of executive-branch adjudicators justifies a particular emphasis on appearance concerns above and beyond what may apply to prosaic federal employees or exempt them from criminal prosecution. After all, the vast majority of executive-branch officials are not deciding questions of law that just as easily could be (and often are) resolved in an Article III court. Likewise, most federal agencies and divisions do not require those exercising their petition rights to be a member of a "bar" or otherwise file a *pro hac vice* motion to appear before them.

Proceedings before APJs have many of these trappings of Article III proceedings for good reason—they reflect the stakes and the heightened need to convey the appearance and reality of impartiality before someone is deprived of a valued property interest. Those considerations can properly shape both the perceptions of the reasonable observer to whom the regulations look—and even the constitutional analysis.

For example, the reason that administrative law judges and presumably APJs enjoy absolute judicial immunity, rather than the qualified immunity of most executive-branch officials, is because their role "is

'functionally comparable' to that of a judge." *Butz v. Economou*, 438 U.S. 478, 513 (1978). Similarly, the States' Eleventh Amendment immunity extends to a proceeding before the Federal Maritime Commission because "such a proceeding 'walks, talks, and squawks very much like a lawsuit.'" *Fed. Mar. Comm'n v. S.C. State Ports Auth.*, 535 U.S. 743, 757 (2002). The similarities extend to the heightened need for impartiality by administrative judges. *Id.* at 758 ("[T]he role of the ALJ, the impartial officer designated to hear a case, . . . is similar to an Article III judge." (footnote omitted)).

Thus, the appearance-of-partiality concerns reflected in the OGE regulations apply with particular force to the APJs. After all, "confidence in the objectivity of adjudication is critical to a nation ruled by law." *Mobility Workx, LLC v. Unified Patents, LLC*, 15 F.4th 1146, 1162 (Fed. Cir. 2021) (Newman, J., concurring in part and dissenting in part). Put differently, since appearance-of-partiality problems matter for everyday federal employees under OGE regulations, basic principles of due process require that they matter all the more so to—and be given all the more serious consideration by—those acting in an adjudicative capacity. *See Gibson v. Berryhill*, 411 U.S. 564, 579 (1973) (emphasizing "the

prevailing view that '[m]ost of the law concerning disqualification because of interest'" for Article III judges "'applies with equal force to . . . administrative adjudicators'" (latter two alterations in original; citation omitted)); *cf. Washington v. Dep't of the Interior*, 81 M.S.P.R. 101, 104 (1999) ("There is no requirement that the Board be bound by the federal judicial rule, inasmuch as it is not a court, but . . . we see no reason not to look to the rule and case law arising from 28 U.S.C. § 455, where relevant[.]").

Given this context, the technicalities on which the Board relied in not just denying Centripetal's motion, but chastising it for filing it, do not come close to dispelling the appearance concerns created by APJ McNamara's stock ownership or the need for recusal and vacatur. Indeed, the justification is transparent enough to reinforce a sense of partiality. For example, the Board relied on the fact that Cisco was not a formal party to this IPR at the time of the panel's institution decision. *See* Appx011 (Paper 55). But that ignores both that the original panelists that decided to institute knew full well about Cisco's financial interest in the '856 patent, and that APJ McNamara joined a decision adding Cisco as a party to this very IPR the day before recusing himself. *See* Paper

39; Paper 43. The Board also relied on the amount of stock being below the criminal safe harbor. But, again, that ignores the appearance of partiality being a separate ground for recusal under the regulations that will almost always be invoked in situations where recusal is not independently compelled by a financial holding valued above the criminal safe harbor.

It also misses the broader context of this case. Every patent holder deserves the appearance of impartiality in a proceeding that risks invalidating a patent that is "presumed valid." 35 U.S.C. § 282. But a party that has just lost a substantial infringement verdict based on a holding of less than $5,000 in Cisco stock surely deserves a proceeding free from adjudicators holding larger amounts of Cisco stock, and it equally surely deserves a respectful hearing rather than a scolding and the loss of its counsel of choice. A reasonable observer aware of all the circumstances would expect nothing less. Yet instead of taking Centripetal's concerns seriously, the Board not only chastised Centripetal for raising them, but gratuitously denied an unopposed pro hac vice motion to join the PTAB bar by the lawyer who signed the recusal motion. The clear message to

the entire PTAB bar is that future identification of APJ financial conflicts will be met not with indulgence, but with retaliation.

In sum, Centripetal's entitlement to relief here is clear and unmistakable, as the Board's decisions and actions in these proceedings are fundamentally inconsistent with the rules APJs are bound to follow. The Board's extraordinary response to Centripetal's good-faith motion underscores the need for this Court's intervention—both to correct the dangerous message to the PTAB bar and to order these proceedings to begin anew before an untainted panel and with Centripetal's counsel of choice.

II.   Centripetal Has No Other Obvious Means Of Relief

Under 35 U.S.C. § 314(d), the "determination by the Director whether to institute" an IPR is "final and nonappealable." Nonappealable orders are classic candidates for mandamus. *In re BP Lubricants USA Inc.*, 637 F.3d 1307, 1310 (Fed. Cir. 2011); *In re Princo Corp.*, 478 F.3d 1345, 1357 (Fed. Cir. 2007) (one whose rights "cannot be vindicated by direct appeal" "lacks adequate alternative means to obtain the relief sought"). That said, and despite the text of § 314(d), the Supreme Court has gone out of its way not to "categorically preclude review" of decisions to institute IPR in cases where there may be a crosscutting "problem with

the entire proceeding." *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 275 (2016).

Centripetal thus faces a Catch-22. While Centripetal certainly views an improper failure to recuse in light of an appearance of partiality as a crosscutting problem that taints the whole proceeding, the Supreme Court has left unresolved "the precise effect of § 314(d)" in cases where a challenge to institution raises "constitutional questions," "depend[s] on other less closely related statutes," or "present[s] other questions of interpretation that reach, in terms of scope and impact, well beyond" the substance of § 314. *Cuozzo*, 579 U.S. at 274–75. Moreover, it is likely that at least one of the opposing parties will argue that a recusal error at the institution stage cannot be remedied on review from the final decision in light of § 314(d). The analysis is further complicated by the decision of the APJs to withdraw after the institution and joinder decisions in a self-proclaimed effort to limit the issues in the case. It is thus unclear at this stage whether an improper failure to recuse on an institution decision could be reviewed on an appeal from a final PTAB decision

invalidating the '856 patent, or whether mandamus now is Centripetal's only recourse.[2]

What is crystal clear is that there is no further path for relief for Centripetal at the PTO. The Board has already threatened Centripetal and its counsel with sanctions if they continue to raise conflicts concerns, and the Board has disqualified Centripetal's counsel of choice. Appx014 (Paper 55). And on top of everything else, the PTO Director has a Cisco conflict of her own. *See* Paper 31 at 1 n.1. If Centripetal is to secure relief before further injury is inflicted, it will come only from this Court.

In the meantime, the statutory deadline for a final written decision on PAN's IPR is imminent, and the Board is pressing on full steam ahead with an APJ from the original panel that improperly granted Cisco's motion for joinder. As explained, not only will the ultimate decision inevitably be tainted, but an adverse decision regarding the patentability of the '856 patent would cast a pall over the district-court proceedings on

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[2] While the Court has denied a mandamus petition that raised a constitutional due process argument, *see In re B.E. Tech., L.L.C.*, No. 22-114, 2022 WL 421186 (Fed. Cir. Feb. 11, 2022) (non-precedential), the Court has not yet settled whether a party can have its rights later vindicated upon direct appeal under the circumstances presented here.

remand from this Court's decision vacating Judge Morgan's non-recusal order, potentially severely prejudicing Centripetal as it seeks reinstatement of the large willful-infringement judgment. Waiting until a potential appeal from the final written decision would not provide adequate relief in these circumstances. And while this case is ongoing, Centripetal wishes to continue its good-faith press of its recusal claim rather than "wait [to] decide whether [it] likes the treatment that [it] receives." *United States v. Owens*, 902 F.2d 1154, 1155 (4th Cir. 1990) (citing *In re United Shoe Mach. Corp.*, 276 F.2d 77, 79 (1st Cir. 1960)).

III.   The Writ Is Appropriate Under The Circumstances

A writ of mandamus is appropriate and necessary here. Less than one year ago, this Court rejected arguments regarding "de minimis" financial conflicts and wiped out a judicial decision confirming the validity and willful infringement of the '856 patent by Cisco. Rejecting Centripetal's arguments, this Court held that "[i]t simply cannot plausibly be argued that public confidence in the judiciary will be degraded by a decision that vacates a judge's rulings rendered while he had a known financial interest in one of the parties." *Centripetal*, 38 F.4th at 1039. The decision to institute *inter partes* review of the '856 patent and join otherwise time-

- 30 -

barred party Cisco to the proceeding by an APJ with known financial ties to Cisco suffers from the same basic problems. Moreover, the juxtaposition of the two decisions makes the result below—and the tongue-lashing Centripetal received for having the temerity to raise it—all the more inexplicable. The Board created an undeniable appearance of partiality when it allowed an APJ, tainted by Cisco stock ownership, to institute a proceeding that could cancel a patent looming large over Cisco's infringement liability—all after this Court vacated Centripetal's infringement verdict based on an amount of Cisco stock far lower than the APJ's and that the district judge did not even know about until after he had written most of his opinion.

In rejecting Centripetal's motion, the Board raised timeliness concerns and chastised Centripetal for not filing its motion sooner, without acknowledging the diligence and investigation needed to more fully understand the financial-interest details. *See* Appx021–022 (Paper 55). According to the Board, the three months between receiving copies of APJ McNamara's 2014–2019 financial disclosures and filing the motion for recusal and vacatur was "highly inappropriate" and apparently so "unjustified" as to "bar the relief now being sought" all by itself. *Id.* But

unlike the litigants in the cases the Board cited, Centripetal did not wait for the Board to render a decision before seeking recusal, *see Owens*, 902 F.2d at 1156 (Owens "chose to wait to seek . . . recusal until after he learned what sentence the judge imposed"), or sit on disqualifying information for years, *see United Shoe Mach.*, 276 F.2d at 79. To the contrary, Centripetal filed its motion before the Board issued any further rulings or orders in the IPR proceeding.

In any event, it is hard to blame Centripetal for any "delay" here. Despite being characterized as "public," APJs' financial disclosures are not publicly posted anywhere. Nor are they easily accessed: When Centripetal formally requested the APJs' financial disclosures—and explained the purpose for seeking the records—the government responded by warning Centripetal about potential criminal liability related to requesting such records for "commercial use." *See* 5 U.S.C. § 105(d)(1)(B). The agency's attempt to keep its "public" records inaccessible, not any purported dilatoriness by Centripetal, was the source of any delay.

The unexplained withdrawals of APJs McNamara and Amundson, their actions taken under the shadow of the recusal request, the Board's dismissive and derisive treatment of Centripetal's motion, and the

Board's subsequent retaliation against Centripetal's lead counsel only exacerbate the due process concerns at play in this case. Without this Court's intervention, other parties will hesitate to flag any potential conflict, no matter how legitimate, for fear of retribution. *But see United States v. Cooper*, 872 F.2d 1, 5 (1st Cir. 1989) ("Lawyers using professional care, circumspection and discretion in exercising that right need not be apprehensive of chastizement or penalties for having the advocative courage to raise such a sensitive issue to assure the client's right to a fair trial and the integrity of our system for administering justice.").

CONCLUSION

For the reasons set forth above, this Court should issue a writ of mandamus to the Board to vacate all decisions in IPR2022-00182, including the decision to institute and the decisions to grant the motions for joinder. The Board should be further ordered to constitute a new panel of APJs who are confirmed to be clear of any conflicts in order to reconsider the IPR petition filed by Palo Alto Networks.

- 34 -

Date: March 23, 2023

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

1.   This brief complies with the type-volume limitation of Rule 21(d)(1) of the Federal Rules of Appellate Procedure because it contains 6,661 words, excluding the parts exempted by Rule 32(f) of the Federal Rules of Appellate Procedure and Rule 32(b) of the Federal Circuit Rules.

2.   This brief complies with the typeface and typestyle requirements of Rules 32(a)(5) & 32(a)(6) of the Federal Rules of Appellate Procedure because the brief has been prepared in a proportionally spaced typeface using Microsoft Word 2016 in 14-point Century Schoolbook font.

March 23, 2023

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CERTIFICATE OF SERVICE

I hereby certify that on March 23, 2023, I electronically filed the foregoing with the United States Court of Appeals for the Federal Circuit by using the CM/ECF system, and that the following counsel of record was served on March 23, 2023, via overnight delivery by Federal Express:

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No. 23-____

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

IN RE CENTRIPETAL NETWORKS, LLC,

Petitioner.

On Petition for Writ of Mandamus to the
United States Patent and Trademark Office
No. IPR2022-00182

APPENDIX TO PETITION FOR WRIT OF MANDAMUS

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TABLE OF CONTENTS

Page(s)

i

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UNITED STATES PATENT AND TRADEMARK OFFICE

————————

BEFORE THE PATENT TRIAL AND APPEAL BOARD

————————

PALO ALTO NETWORKS, INC., CISCO SYSTEMS, INC.,
and KEYSIGHT TECHNOLOGIES, INC.,[†]
Petitioner

v.

CENTRIPETAL NETWORKS, LLC,
Patent Owner.

————————

IPR2022-00182
Patent 9,917,856 B2

————————

Before MICHELLE N. WORMMEESTER, NABEEL U. KHAN, and
AARON W. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

ORDER
Denying Patent Owner's Motion for Recusal and Vacatur and
Denying, in Part, Patent Owner's Motions for Rehearing
37 C.F.R. § 42.5

————————

[†] Cisco Systems, Inc. and Keysight Technologies, Inc. filed petitions and
motions for joinder in IPR2022-01151 and IPR2022-01199, respectively,
and have been joined in this proceeding.

IPR2022-00182
Patent 9,917,856 B2

I.   INTRODUCTION

This Decision addresses Patent Owner's Motion for Recusal and
Vacatur and, to the extent the issues overlap, Patent Owner's Requests for
Rehearing of the decisions instituting and joining the Petitions filed in
IPR2022-01151 and IPR2022-01199.

For the reasons detailed below, we find that the conduct of which
Patent Owner complains (a) was fully compliant with the applicable ethical
regulations, and (b) does not give rise to due process concerns. We further
find no evidence of "actual bias" on the part of APJ McNamara, that there is
no "inconsistency" between our result and the Federal Circuit's decision in
the *Cisco* case, and that Patent Owner failed to timely raise the issues.

Patent Owner's Motion for Recusal and Vacatur is accordingly
denied. Patent Owner's Requests for Rehearing of the decisions instituting
and joining the Petitions filed in IPR2022-01151 and IPR2022-01199 are
denied to the extent they are based on the alleged conflict.

II.   BACKGROUND

A.   *This Proceeding*

On November 18, 2021, Palo Alto Networks, Inc. ("Petitioner") filed
a Petition requesting *inter partes* review of claims 1, 24, and 25 of U.S.
Patent No. 9,917,856 B2 (Exhibit 1001, "the '856 patent"). *See* Paper 2.
The Petition alleged that the subject claims were unpatentable over United
States patents previously issued to Buruganahalli and Baehr, which had not
been considered by the Office when examining the claims of the '856 patent.
See id. at 7, 9. Centripetal Networks, LLC ("Patent Owner") filed a
Preliminary Response, Petitioner filed a Preliminary Reply, and Patent
Owner filed a Preliminary Sur-reply. *See* Papers 6, 9, 10.

2

Appx002

IPR2022-00182
Patent 9,917,856 B2

On May 25, 2022, the panel determined, in a ninety-page decision, that Petitioner had shown a reasonable likelihood of proving claims 1, 24, and 25 unpatentable under § 103, and instituted an *inter partes* review. *See* Paper 11 ("Institution Decision"). However, the panel explained that the decision was not "a final determination about the patentability of any challenged claim, the construction of any claim term, phrase, or limitation, or any other legal or factual issue." *Id*. at 90.

On June 8, 2022, Patent Owner requested rehearing of the Institution Decision, arguing that the Board misapprehended or overlooked various matters. *See* Paper 13 ("First Rehearing Request"). In that request, Patent Owner asked the Precedential Opinion Panel ("POP") to consider whether the Board should "entertain IPR petitions that collaterally attack a district court judgment when the totality of the circumstances indicates that the petition was filed to harass the patent owner." *Id*. at 1; *see* Ex. 3005.

On December 6, 2022, the POP denied the request for POP review, advising that "the original panel maintains authority over all matters, including considering the submitted rehearing request." Paper 31, 2.

On Friday, December 30, 2022, Patent Owner filed a Motion for Recusal and Vacatur (Paper 37, "Recusal Motion"), seeking recusal of the panel that issued the Institution Decision and an order vacating the Institution Decision.[2]

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[2] The Recusal Motion was filed without authorization. It was also signed by an attorney, Paul Andre, who is neither registered to practice before the Office nor admitted *pro hac vice*. We allowed the briefing due to the gravity of the allegations, but Patent Owner is advised that future filings that are not in compliance with our rules will be expunged, and that relief sought by way of such filings may be denied, with prejudice, for non-compliance. A

3

Appx003

IPR2022-00182
Patent 9,917,856 B2

On Wednesday, January 4, 2023, the second business day after the filing of the recusal motion, the panel issued an order denying the First Rehearing Request and decisions instituting and joining follow-on petitions in IPR2022-01151, filed by Cisco Systems, Inc., and IPR2022-01199, filed by Keysight Technologies, Inc. *See* Paper 40, 14 ("Rehearing Denial"); Papers 39 and 41 ("Joinder Decisions").

On January 5, 2023, APJ McNamara withdrew from the case "[i]n order to reduce the number of issues and simplify the briefing" and, on January 18, 2023, APJ Amundson also withdrew, identifying similar reasons. *See* Papers 43 and 47.

Also, on January 18, 2023, but after APJ Amundson's withdrawal, Patent Owner filed Requests for Rehearing of the Joinder Decisions. *See* Papers 48 and 48 ("Joinder Rehearing Requests").

On January 19, 2023, the Board entered a Panel Change Order, reconstituting the panel to include the undersigned and APJs Michelle N. Wormmeester and Nabeel U. Khan.

The Recusal Motion is now fully briefed, *see* Paper 46 ("Recusal Opposition"), Paper 54 ("Recusal Reply"), and the Hearing in this matter is scheduled for February 15, 2023. *See* Paper 53.

B.   *The Cisco Litigation*

In February of 2018, Patent Owner filed a complaint against Cisco Systems, Inc. ("Cisco") in the Eastern District of Virginia ("the *Cisco* case") alleging infringement of a number of patents, including the '856 patent. *See*

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motion for admission of Mr. Andre has since been filed and a decision will issue in due course.

4

Appx004

IPR2022-00182
Patent 9,917,856 B2

Ex. 1027, 1–2. In May and June of 2020, Judge Henry C. Morgan, Jr.
conducted a bench trial in which Patent Owner asserted infringement of ten
claims in five patents, including '856 patent claims 24 and 25. *See id.*[3]

In October of 2020, Judge Morgan issued an opinion with findings of
fact and conclusions of law. *See* Ex. 1027. He found that Cisco had
infringed claims in four of the five patents, including the '856 patent,
determined that Cisco failed to prove the patents invalid,[4] and awarded
Patent Owner damages and interest of approximately $1.9B, plus royalties
for six years. *See Centripetal Networks, Inc. v. Cisco Sys., Inc.*, 492 F.
Supp. 3d 495, 604–608 (E.D. Va. 2020). Cisco appealed. *See* Ex. 1028.

The Federal Circuit did not reach the merits of the case; instead, on
June 23, 2022, it vacated the judgment because it found that Judge Morgan
was disqualified due to his wife's ownership of Cisco stock. *See Centripetal
Networks, Inc. v. Cisco Sys., Inc.*, 38 F.4th 1025, 1027 (Fed. Cir. 2022).
Patent Owner petitioned for a writ of certiorari, and the petition was denied
on December 5, 2022. *See Centripetal Networks, Inc. v. Cisco Sys., Inc.*,
143 S. Ct. 487 (2022).

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[3] Specifically, Centripetal asserted infringement of claims 63 and 77 of U.S.
Patent No. 9,137,205, claims 9 and 17 of U.S. Patent No. 9,203,806, claims
11 and 21 of U.S. Patent No. 9,560,176, claims 18 and 19 of U.S. Patent No.
9,686,193, and claims 24 and 25 of the '856 Patent. *See* Ex. 1027, 2.

[4] The validity defense presented by Cisco for the '856 patent at trial was that
the accused products were in the prior art. *See* Ex. 1027, 60 ("Dr. Schmidt,
in his invalidity testimony, assumed the infringement analysis by Dr. Cole
and opined that all of the same functionality that Dr. Cole relies on for
infringement was in the accused products prior to the priority date of the
'856 Patent.").

5

Appx005

IPR2022-00182
Patent 9,917,856 B2

The Federal Circuit decision turned on 28 U.S.C. § 455(b), which requires that an Article III judge "shall . . . disqualify himself" if "he knows that he . . . or his spouse . . . has a financial interest in the subject matter in controversy or in a party to the proceeding, or any other interest that could be substantially affected by the outcome." 28 U.S.C. § 455(f) allows a judge who only learns of a conflict "after substantial judicial time has been devoted to the matter" to avoid disqualification by "divest[ing] himself or herself of the interest that provides the grounds for the disqualification."

While he was drafting his decision, Judge Morgan learned that his wife owned Cisco stock. *See* 38 F.4th at 1028. He promptly disclosed that to the parties and placed the stock in a blind trust, evidently believing that to be divestiture under § 455(f) that would avoid disqualification. *See id.* The Federal Circuit, however, determined that placing the stock in a blind trust was insufficient, because "divestiture" requires one to relinquish ownership, which did not happen with a blind trust. *See* 38 F.4th 1031–1033. As a result, Judge Morgan was disqualified. *See id.* at 1033. The Court further determined that the trial decision had to be vacated because the disqualification was not harmless error. *See id.* at 1034–1039.

III.   ANALYSIS

Patent Owner contends that APJ McNamara's ownership of a small amount of Cisco stock and receipt of payments from Foley & Larder LLP are conflicts that violate the applicable regulations and create a due process problem, requiring recusal of the entire panel and that the original and joinder institution decisions be vacated. We do not agree.

6

Appx006

IPR2022-00182
Patent 9,917,856 B2

A.   *Motion for Recusal and Vacatur*

According to Patent Owner, APJ McNamara "has owned Cisco stock and also has been paid a significant amount of money . . . from one of Cisco's lobbyist law firms while he was deciding IPR petitions against patents that Centripetal has asserted against Cisco in litigation" and that "[d]ue process, executive-branch ethics regulations, and common-sense notions of fairness dictate that the fate of the '856 Patent should not rest in the hands of an administrative judge with a financial stake in [Cisco]—a willful infringer with potentially billions of dollars hinging on the result of this IPR proceeding." Recusal Motion 1.[5]

Patent Owner argues that the alleged conflicts "cannot be reconciled with Federal Circuit precedent," as "[t]he Court recently vacated Centripetal's willful judgment award against Cisco—involving the same '856 Patent at issue here—based on the district court judge's wife holding approximately $4,500 of Cisco stock despite his prompt disclosure, good-faith attempt to divest, and rendering a decision adverse to Cisco." Recusal Motion 1 (emphasis omitted). According to Patent Owner, "[i]t simply cannot be correct that an Article III judge's wife's holding of Cisco stock can nullify his validity determination while an administrative judge can knowingly hold the same Cisco stock and decide a collateral attack on that very judgment." *Id.*

Patent Owner further argues that "[w]ildly different institution rates for Centripetal's patents following the Cisco judgment between panels

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[5] Given that Judge Morgan's decision has been vacated, it does not appear that Cisco is, for now at least, accurately described as a "willful infringer."

7

Appx007

IPR2022-00182
Patent 9,917,856 B2

including APJ McNamara (87.5%) and those without him (20%) raise the unfortunate specter of actual bias and contamination of the deliberative process." Recusal Motion 2; *see id*. at 4–5.

Patent Owner concludes that "[t]he entire [original] panel is now tainted with APJ McNamara's conflict" and "should be recused," and that "the decision to institute should be vacated." Recusal Motion 2.

Executive Branch Ethical Standards

Administrative Patent Judges are governed by the Standards of Ethical Conduct for Employees of the Executive Branch (the "Executive Branch Ethical Standards"), codified beginning at 5 C.F.R. § 2635. Employees of the executive branch must "endeavor to avoid any actions creating the appearance that they are violating the law or the ethical standards," where "[w]hether particular circumstances create an appearance that the law or these standards have been violated shall be determined from the perspective of a reasonable person with knowledge of the relevant facts." 5 C.F.R. § 2635.101(b)(14).[6]

Under 5 C.F.R. § 2635.402, executive branch employees are prohibited "from participating personally and substantially in an official capacity in any particular matter in which, to [their] knowledge, [they] or any person whose interests are imputed to [them] . . . has a financial interest, if the particular matter will have a direct and predictable effect on that interest." A matter will not have a "direct effect" if "the chain of causation is attenuated or is contingent upon the occurrence of events that are

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[6] Notably, APJs are entitled to a "presumption of honesty and integrity." *Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023, 1030 (Fed. Cir. 2016) (rejecting allegations of improper bias against the Board).

8

Appx008

IPR2022-00182
Patent 9,917,856 B2

speculative or that are independent of, and unrelated to, the matter" and there must be "a real, as opposed to a speculative possibility that the matter will affect the financial interest." 5 C.F.R. § 2635.402(b)(1)(i–ii).[7]

Pursuant to the authority granted in 18 U.S.C. § 208(b)(2), the Office of Government Ethics ("OGE") has issued specific "de minimis exemptions" to the rules regarding disqualifying financial interests. OGE issued those exemptions, which are codified at 5 C.F.R. § 2640, "based on its determination that particular interests are too remote or too inconsequential to affect the integrity of the services of employees to whom those exemptions apply." 5 C.F.R. § 2635.402(d)(1).

Section 2640.202(a) provides that "[a]n employee may participate in any particular matter involving specific parties in which the disqualifying financial interest arises from the ownership by the employee, his spouse or minor children of securities issued by one or more entities affected by the matter, if . . . (1) [t]he securities are publicly traded . . . and (2) [t]he aggregate market value of the holdings of the employee, his spouse, and his minor children in the securities of all entities does not exceed $15,000." That section provides the following example:

> An employee owns 100 shares of publicly traded stock valued at $3,000 in XYZ Corporation. As part of his official duties, the employee is evaluating bids for performing computer maintenance services at his agency and discovers that XYZ Corporation is one of the companies that has submitted a bid.

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[7] Patent Owner cites 5 C.F.R. § 2635.502, which concerns "Personal and Business Relationships," including matters such as employment relationships and properly leases. The rules relating to financial interests, such as those raised here, are found in 5 C.F.R. § 2635.401–403.

9

IPR2022-00182
Patent 9,917,856 B2

> The employee is not required to recuse himself from continuing to evaluate the bids.

5 C.F.R. § 2640.202(a).

Section 2640.202(b) provides a corresponding exemption for situations in which the "securities [were] issued by one or more entities that are not parties to the matter but that are affected by the matter," where the threshold is raised to $25,000 for a single affected entity or $50,000 for all entities. A similar example is provided:

> A Food and Drug Administration advisory committee is asked to review a new drug application from Alpha Drug Co. for a new lung cancer drug. A member of the advisory committee owns $20,000 worth of stock in Mega Drug Co., which manufactures the only similar lung cancer drug on the market. If approved, the Alpha Drug Co.'s drug would directly compete with the drug sold by the Mega Drug Co., resulting in decreased sales of its lung cancer drug. The committee member may participate in the review of the new drug.

5 C.F.R. § 2640.202(b).

Section 2640.202(a), including the first example above, was originally issued in 1996, following notice and comment rulemaking, although the threshold was $5,000. *See Interpretation, Exemptions and Waiver Guidance Concerning 18 U.S.C. 208*, 61 FR 66841 (Dec. 18, 1996). The rules were updated in 2002, again following the notice and comment procedure, raising the 2640.202(a) threshold to $15,000 and adding Section 2640.202(b). *See Exemption Amendments Under 18 U.S.C. 208(b)(2)*, 67 FR 12443 (March 19, 2002).

<div align="center">10</div>

IPR2022-00182
Patent 9,917,856 B2

Importantly, these exemptions were developed by a body that not only had expertise in ethics, but also was completely impartial and, of course, was unaware of Cisco, Patent Owner, Petitioner, or the '856 patent.[8]

As noted above, Patent Owner argues that APJ McNamara should be disqualified because (a) he owns Cisco stock in an amount between $1,001 and $15,000 and (b) he receives "an annual share of profits from the law firm Foley & Lardner LLP" which "represents Cisco in lobbying efforts and has received fees from Cisco." Recusal Motion 3–4.

Regarding the stock, Cisco was not a party to this proceeding at the time of the Institution Decision, and the value of the holdings falls well below the $25,000 threshold that § 2640.202(b) applies to matters affecting nonparties, and even below the threshold for parties. The Cisco stock is plainly not disqualifying under the rules.

The Foley & Lardner payments are also not a prohibited financial interest. Patent Owner's argument, as we understand it, is that because APJ McNamara receives retirement income from Foley, he would be inclined to favor Cisco because Cisco is a client that pays Foley for legal work. This argument has numerous fatal flaws.

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[8] Patent Owner's argument that the ethical regulations are simply about avoiding criminal prosecution (*see* Recusal Motion 11) is incorrect. The Executive Branch Ethical Standards are consistent with, but exist separately and apart from the criminal statutes, providing a more comprehensive framework "[t]o ensure that every citizen can have complete confidence in the integrity of the Federal Government, each employee shall respect and adhere to the principles of ethical conduct set forth in this section." 5 C.F.R. § 2635.101(a); *see id*. § 2635.101(c) (explaining that "there are conflict of interest statutes that prohibit certain conduct" "[i]n addition to the standards of ethical conduct").

11

IPR2022-00182
Patent 9,917,856 B2

First, there is nothing in the record to suggest that APJ McNamara was aware that Cisco was a Foley client, and knowledge is required for disqualification. *See* 5 C.F.R. § 2635.402 ("to his *knowledge*, he or any person whose interests are imputed to him . . . has a financial interest"). APJ McNamara certainly cannot have favored Cisco because it was a Foley client if he did not know Cisco was a Foley client.[9]

Second, there is simply nothing, at all, to suggest that the retirement payments were dependent on the firm's receipts from Cisco, which means that there is no evidence of a possible "direct effect" on a financial interest. *See* 5 C.F.R. § 2635.402(b)(1)(i) (explaining that a matter will not have a "direct effect" on a financial interest if "the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter").

Finally, there is nothing to suggest that a decision about the validity of a patent being asserted against Cisco would have any effect on the amount of work Foley was doing for Cisco, particularly given that the work appears to have nothing to do with patents, or even intellectual property. Patent Owner tries to fill that hole with a claim that "[t]he Foley firm recently listed Cisco as 'its most lucrative contract.'" Recusal Motion 4. That assertion, however, is based on a misunderstanding (or misrepresentation) of Patent Owner's Exhibit 2037, which actually is limited to a survey of fees received for *executive branch lobbying* in *Florida*. *See* Ex. 2037, 1 ("Florida Politics parsed the reports submitted by firms that lobby the state government in

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[9] Because Patent Owner cites § 2635.502, we note that it also applies only where the "employee *knows* that a particular matter involving specific parties is likely to have a direct and predictable effect."

12

Appx012

IPR2022-00182
Patent 9,917,856 B2

order to compile a definitive list of the state's top lobbying shops, at least in terms of revenues."). Cisco may have been Foley's "most lucrative" client in 2021 for the narrow category of executive branch lobbying in Florida, but the $100,000 that Cisco paid Foley for that work was surely insufficient to make Cisco the "most lucrative" client across Foley's many offices and practices, which generated more than $1B in revenue in 2021. *See* Paper 43, 2 n.2. Moreover, Patent Owner does not provide any explanation of how a decision regarding the validity of the '856 patent might affect Cisco's desire to have Foley assist with lobbying Florida legislators on "health services," "matters related to state procurement law and processes," and "matters related to Smart Cities transportation efforts." *See* Ex. 2039.

For these reasons, we conclude that APJ McNamara's relationship with Foley also would not be disqualifying under the regulations.

We further find that Patent Owner's argument that APJ McNamara's participation in this case ran afoul of "executive-branch ethics regulations" (Recusal Motion 1, 7–8) is frivolous. Patent Owner was aware of the exemptions,[10] there is no competent, good faith argument that the Cisco stock does not fall into exemptions, and the argument concerning the Foley payments is glaringly deficient on its face, as explained above.[11]

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[10] *See* Ex. 1054, 9 (Patent Owner acknowledging the "the relaxed stock-ownership rules APJs appear to enjoy under 5 C.F.R. §2640.202(a)").

[11] Patent Owner's argument that APJ McNamara was biased in favor of Cisco is also undercut by its "actual bias" argument, discussed below, in which Patent Owner acknowledges that the institution rate on the 2018 Cisco petitions by panels including APJ McNamara was "roughly consistent with the Board's overall institution rate in the relevant timeframe." Recusal Motion 4.

13

Appx013

IPR2022-00182
Patent 9,917,856 B2

That these arguments are so lacking in substance is especially concerning given their aim, as "[t]he assertion that a judge improperly participated in a case from which he or she should have recused constitutes a charge most grave." *Maier v. Orr*, 758 F.2d 1578, 1583–84 (1985). The Federal Circuit has made clear that counsel should not seek disqualification "precipitously or recklessly, nor on unsupported rumor, conjecture, and speculation" because "[t]o do so is to trifle with the court and the administration of justice." *Id.*; *see also Aetna Life Ins. Co. v. Lavoie*, 475 U.S. 813, 827–28 (1986) ("Charges of disqualification should not be made lightly."). Patent Owner is advised that further baseless arguments directed at the Board, its members, or its process may be met with sanctions.

Due Process: Cisco

Patent Owner argues that "[i]t should be beyond debate that a judge with a financial interest that will be impacted materially by the outcome of the case must recuse, particularly if he has made no attempt to mitigate the conflict," citing *Gibson v. Berryhill*, 411 U.S. 564, 579 (1973), to the effect that "those with substantial pecuniary interest in legal proceedings should not adjudicate these disputes." Recusal Motion 5. Patent Owner argues that "[d]ue process requires recusal here because decisions in the proceeding will directly impact Cisco, and APJ McNamara's stock ownership and partnership profits represent 'a direct, personal, substantial pecuniary interest' in Cisco." *Id.* at 6 (quoting *Tumey v. State of Ohio*, 273 U.S. 510, 522 (1927)).

We certainly agree that Patent Owner, like any other party that appears before the Board, is entitled to due process, the essential ingredients of which are notice and an opportunity to be heard by a disinterested

14

Appx014

IPR2022-00182
Patent 9,917,856 B2

decision-maker. *See Caperton v. A.T. Massey Coal Co.*, 556 U.S. 868, 876–81 (2009). But we do not agree that the ethical regulations under which the executive branch has operated since 1996 are inconsistent with due process.

The passage Patent Owner quotes from *Gibson v. Berryhill* states "those with ***substantial*** pecuniary interest in legal proceedings should not adjudicate these disputes." *Gibson*, 411 U.S. at 579 (emphasis added); *see also id.* (affirming that a board of optometrists had a pecuniary interest of "sufficient substance" that it could not preside over a hearing against competing optometrist). Similarly, Patent Owner's quotation from *Tumey v. State of Ohio* identifies as problematic "a direct, personal, ***substantial*** pecuniary interest." *Tumey*, 273 U.S. at 523 (emphasis added).

These cases identified by Patent Owner thus tell us that not *every* financial interest demands recusal; instead, recusal is required where the financial interest is *substantial*. *See also Ward v. Village of Monroeville, Ohio*, 409 U.S. 57, 59 (1972) (finding a due process violation where the revenue produced from the mayor's court provided "a substantial portion of a municipality's funds"); *Aetna*, 475 U.S. at 825–827 (finding "no basis" to conclude that certain justices were disqualified even though they "might conceivably have had a slight pecuniary interest").

Determining whether an interest might qualify as "substantial" can be difficult because the term is inherently subjective and highly dependent on the facts of a particular situation. *See Aetna*, 475 U.S. at 822 (quoting *In re Murchison*, 349 U.S. 133, 136 (1955), to the effect that what degree or kind of interest is sufficient to disqualify "cannot be defined with precision"). In this instance, however, we find that we already have an answer sufficient to dispose of Patent Owner's arguments.

15

Appx015

IPR2022-00182
Patent 9,917,856 B2

As described above, the Office of Governmental Ethics, an impartial body with particular expertise in this area, promulgated the "de minimus exemptions" for securities in 1996, and then revised them in 2002. This was done at the direction of Congress, and after soliciting public input. Critically, the rules themselves tell us that OGE developed the exemptions "*based on its determination that particular interests are too remote or too inconsequential to affect the integrity of the services of employees* to whom those exemptions apply." 5 C.F.R. § 2635.402(d)(1) (emphasis added).

We conclude that the "remote" and "inconsequential" interests falling within the "de minimis exemptions" of Section 2640.202 are *not* "substantial" interests that would give rise to the types of due process concerns raised in the Recusal Motion.[12] That conclusion is buttressed by the fact that the dollar limits in the regulations were deemed "too remote" and "too inconsequential" in *2002*, and the passage of twenty years has only made them *more* remote and inconsequential.

Because APJ McNamara's Cisco stock holdings fall within the exemption, and because we conclude that interests within the exemptions do not give rise to due process concerns, Patent Owner's due process arguments regarding the Cisco stock fail.

We pause to point out that Patent Owner is essentially asking us to decide that the ethical framework developed by OGE at Congress' direction, and with public input, and that has been in place for the last twenty-seven

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[12] We don't know, but strongly suspect, that OGE would have been aware of the relevant authorities, such as *Gibson*, *Tumey*, and *Ward*, and that the exemptions were specifically crafted to be consistent with the law.

16

Appx016

IPR2022-00182
Patent 9,917,856 B2

years, across most of the Executive Branch, is unconstitutional. We decline
to do that.

The Foley payments do not fall within the exemptions, but, for the
reasons explained above, Patent Owner's theory about how they might have
influenced decision-making has no support and is far too remote and tenuous
to support a due process argument.

For these reasons, Patent Owner has not shown that the Cisco
relationships give rise to a due proces violation that would require recusal of
any APJ on the original panel, or vacatur of the Institution Decision.

Due Process: Alleged Actual Bias

Patent Owner also argues that a "discrepancy between the post-
judgment institution rates for panels with and without APJ McNamara—
those decided after the extent of Cisco's liability was established—raises *at
least an appearance of actual bias*." Recusal Motion 5 (emphasis added).

As an initial matter, it is unclear what "appearance of actual bias"
means—the relevant inquiry looks for *either* "an appearance of bias" *or*
"actual bias." *See, e.g.*, *Bixler v. Foster*, 596 F.3d 751, 762 (10th Cir. 2010)
("To demonstrate a violation of due process because of judicial bias, a
claimant must show either actual bias or an appearance of bias."). However,
because "a litigant is not denied due process by either the 'appearance' of
partiality or by circumstances which might lead one to speculate as to a
judge's impartiality," but *only* "if he is in fact treated unfairly," *Margoles v.
Johns*, 660 F.2d 291, 296 (7th Cir. 1981), we will assume Patent Owner
means to argue that its analysis provides evidence of *actual* bias.

17

Appx017

IPR2022-00182
Patent 9,917,856 B2

The Supreme Court explained in *Aetna* that disqualification for personal bias would be constitutionally required "only in the most extreme of cases" and, as in *Aetna*, Patent Owner's arguments "fall well below that level." 475 U.S. at 821.

The mere fact that a judicial decision, or decisions, went against a party is insufficient alone to show bias. *See, e.g.*, *Bixler*, 596 F.3d at 762 ("Adverse rulings alone do not demonstrate judicial bias."). Thus, APJ McNamara's presence on panels that instituted IPRs on Patent Owner's patents, or found claims of Patent Owner's patents unpatentable, does not itself show bias against Patent Owner.

Presumably because it cannot show personal bias from the decisions themselves, Patent Owner argues, as noted above, that bias can be seen in "[t]he discrepancy between the post-judgment institution rates for panels with and without APJ McNamara." Recusal Motion 5. That argument has absolutely no basis in fact.

We first note that any "actual bias" supposedly indicated by the post-judgment cases would be against Patent Owner, not in favor of Cisco, because the record indicates that all but one of the patents in the eight post-judgment IPRs that are the subject of the higher institution rate argument have only been asserted against Petitioner, not Cisco. *See, e.g.*, IPR2021-01147, Paper 3, 1 (identifying as related only *Centripetal Networks, Inc., v. Palo Alto Networks, Inc.*, 2:21-cv-137 (E.D. Va.)).

Patent Owner has thus *pivoted* from arguing that APJ McNamara was biased *in favor of Cisco* for financial reasons to arguing that, following the *Cisco* verdict, he became biased *against Patent Owner* for some personal reason. But Patent Owner does not even try to explain *why* APJ McNamara

18

Appx018

IPR2022-00182
Patent 9,917,856 B2

would have a personal bias against Patent Owner. Patent Owner does not point to *any* conduct, statement, or anything else during the first set of cases, or arising in any other context, that would reflect or explain any personal animosity. As noted above, adverse decisions do not show bias.

Notably, of the five patents asserted in the *Cisco* case, three—US 9,137,205, US 9,560,176, and US 9,686,193—were the subject of 2018 IPR petitions, and panels that included APJ McNamara instituted IPRs on the '205 patent, but denied institution of IPRs on both the '176 patent and '193 patents. *See* IPR2018-01443 and -01444 ('205 patent); IPR2018-01654 and -01655 ('176 patent); IPR2018–01559 ('193 patent). That panels including APJ McNamara *declined to review* two of the patents being asserted by Patent Owner against Cisco undercuts any argument of bias against Patent Owner, or in favor of Cisco.

Were the failure to provide any explanation for the alleged personal bias not itself fatal to this argument, we find Patent Owner's "statistics" completely inadequate to show bias. Patent Owner has not shown that the sample size is large enough to be statistically significant (particularly given that two of the cases in the second group are the joinder petitions), and the petitions involved different petitioners, entirely different patents, entirely different prior art, and were prepared by different firms. This is not an apples-to-apples comparison.

Perhaps the biggest problem, however, is that Patent Owner fails to account for the fact that the pre- and post-verdict panels were very different. To promote consistency, the Board assigns related cases to "the fewest total judges as is practicable." *See* PTAB Standard Operating Procedure 1, 9. The fourteen 2018 cases were thus assigned to panels drawn from a group of

19

Appx019

IPR2022-00182
Patent 9,917,856 B2

six APJs. But because some of those APJs were no longer available, the panels for the 2021 and 2022 cases have been drawn from a very different group of seven APJs. Thus, even if the pre- and post-verdict Petitions were equivalent on the merits (and there is no reason to think that), the most logical explanation for a difference in institution rates (if there was a statistically significant difference, which Patent Owner has not shown) would be the influence of *new* APJs on the panels, not a sudden (and, again, completely unexplained) change of heart on the part of APJ McNamara.

Patent Owner's argument about institution rates does not even begin to approach the strict standard identified in *Aetna* for a showing of personal bias but, instead, is just another "reckless" attack based on "unsupported rumor, conjecture, and speculation." *Maier*, 758 F.2d at 1583–84.

*Alleged Inconsistency Between the
Federal Circuit Case and this One*

Patent Owner repeatedly argues there is a serious conflict between the Federal Circuit's decision vacating the *Cisco* judgment because Judge Morgan's wife owned a small amount of Cisco stock, and APJ McNamara being a member of the panel while owning a small amount of Cisco stock. *See, e.g.*, Recusal Motion 1, 10. That is not correct.

As explained above, the Federal Circuit reversed Judge Morgan because 28 U.S.C. § 455(b) prohibits ownership of *any* stock, and the blind trust was not a sufficient divestiture under § 455(f). But 28 U.S.C. § 455(b) does not apply to the Board,[13] and Patent Owner does not argue that it does. As also explained above, the regulations that *do* apply to the Board allow

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[13] *See Chianelli v. Env't Prot. Agency*, 8 F. App'x 971, 980 (Fed. Cir. 2001) (explaining that § 455 "does not apply to . . . administrative judges").

20

Appx020

IPR2022-00182
Patent 9,917,856 B2

ownership of up to $15,000 of stock in a party and up to $25,000 of stock in a non-party that may be affected by a matter handled by an APJ.

There is no "conflict[] [that] cannot be reconciled" (Recusal Motion 1) for the simple reason that the District Courts and the Board operate under different rules, and the Federal Circuit's decision did not address due process at all.[14]

Patent Owner is essentially making a policy argument, that, like Article III judges, APJs should not be permitted to own *any* stock in parties or affected entities.[15] But that is not the current policy and, critically, it was not the policy *at the time of the Institution Decision*. Patent Owner cannot reasonably or logically argue that an APJ was unethical or should have recused themselves from a panel *in the past* because the applicable standards should be different *in the future*. Under the standards that have been in place throughout this proceeding, there is no colorable argument for recusal.

Patent Owner's Unexplained Delay

Patent Owner admittedly became aware of the facts underlying its conflict arguments at least as early as *September 29, 2022*. *See* Ex. 2029 (Andre Affidavit) ¶ 2. Patent Owner then sat on that information for more than *three months*.

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[14] Notably, the standard for disqualification under the Due Process Clause is *less demanding* than that imposed by § 455, because § 455 "requires disqualification when others would have reasonable cause to question the judge's impartiality," but "[t]he Due Process Clause requires a judge to step aside [only] when a reasonable judge would find it necessary to do so." *U.S. v. Couch*, 896 F.2d 78, 82 (1990) (citing *Aetna*, 475 U.S. at 822).

[15] As noted above, Patent Owner is fully aware of the current policy. *See* Ex. 1054, 9 (acknowledging "the relaxed stock-ownership rules APJs appear to enjoy under 5 C.F.R. §2640.202(a)").

21

Appx021

IPR2022-00182
Patent 9,917,856 B2

The extended delay, during which the panel was working on the rehearing request decision and the decisions on the joinder petitions, strongly suggests that Patent Owner was waiting to see if the original panel would issue a favorable decision on the reconsideration motion or, as Petitioner argues, that Patent Owner was waiting to see if it might receive a favorable decision from the Supreme Court. *See* Recusal Opposition 7. But no matter which it was, it was highly inappropriate, because a matter as serious as a conflict requiring recusal of multiple APJs should have been raised *immediately*, not held for strategic reasons.

We find that, even if there had been a conflict at institution, Patent Owner's unjustified delay in raising the issue would bar the relief now being sought, because "[t]imeliness is an essential element of a recusal motion." *U.S. v. Owens*, 902 F.2d 1154, 1155 (4th Cir. 1990); *see In re United Shoe Machinery Corp.*, 276 F.2d 77, 79 (1st Cir. 1960) ("One of the reasons for requiring promptness in filing [recusal motions] is that a party knowing of a ground for requesting disqualification, cannot be permitted to wait and decide whether he likes the treatment that he receives.").

Withdrawal of APJs McNamara and Amundson

In its reply brief, Patent Owner suggests that APJs McNamara and Amundson withdrew from the case due to undisclosed conflicts. *See* Recusal Reply 4–5. That is not correct. Had there been a conflict requiring them to withdraw, the panel change order would have listed "recusal," not "unavailability," as the reason. *See* PTAB Standard Operating Procedure 1, 13; Paper 51. Unavailability is an open-ended category that includes any reason for an APJ's withdrawal other than conflicts or deadlines.

22

Appx022

IPR2022-00182
Patent 9,917,856 B2

B.   Motions for Rehearing

In the Joinder Rehearing Requests, Patent Owner argues that the Cisco and Keycite institution decisions must be vacated because APJ McNamara had a "conflict based on a pecuniary interest in Cisco." Paper 48, 6; Paper 49, 6.

Because, for the reasons discussed in Section II.A above, we find no conflict requiring recusal, Patent Owner's argument fails, and the rehearing requests are denied to the extent they are based on that argument. The panel will address other arguments made in the rehearing requests in due course.

IV.   ORDER

For the foregoing reasons, it is ORDERED that

(a) Patent Owner's Motion for Recusal and Vacatur (Paper 37) is denied; and

(b) Patent Owner's Requests for Rehearing of the decisions instituting and joining the Petitions filed in IPR2022-01151 and IPR2022-01199 (Papers 48 and 49) are denied-in-part.

23

Appx023

IPR2022-00182
Patent 9,917,856 B2

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24

Appx024

IPR2022-00182
Patent 9,917,856 B2

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

PALO ALTO NETWORKS, INC.,
Petitioner,

v.

CENTRIPETAL NETWORKS, INC.,
Patent Owner.

_____

IPR2022-00182
Patent 9,917,856 B2

_____

Before BRIAN J. McNAMARA, AARON W. MOORE, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

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

IPR2022-00182
Patent 9,917,856 B2

I. INTRODUCTION

Palo Alto Networks, Inc. ("Petitioner") filed a Petition requesting an
inter partes review of claims 1, 24, and 25 in U.S. Patent No. 9,917,856 B2
(Ex. 1001, "the '856 patent") under 35 U.S.C. §§ 311–319. Paper 2 ("Pet.").
Centripetal Networks, Inc. ("Patent Owner") filed a Preliminary Response.
Paper 6 ("Prelim. Resp."). Further, after receiving Board authorization,
Petitioner filed a Preliminary Reply, and Patent Owner filed a Preliminary
Sur-reply. Paper 9 ("Prelim. Reply"); Paper 10 ("Prelim. Sur-reply").

Under 37 C.F.R. § 42.4(a), we have authority to determine whether
to institute an *inter partes* review. We may institute an *inter partes* review
only if "the information presented in the petition filed under section 311
and any response filed under section 313 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). The
"reasonable likelihood" standard is "a higher standard than mere notice
pleading" but "lower than the 'preponderance' standard to prevail in a final
written decision." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-
01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

Based on the current record and for the reasons explained below,
Petitioner has shown that there is a reasonable likelihood that it would
prevail with respect to at least one of the challenged claims. Thus, we
institute an *inter partes* review of claims 1, 24, and 25 in the '856 patent
on all challenges included in the Petition.

2

IPR2022-00182
Patent 9,917,856 B2

II. BACKGROUND

A. Real Parties in Interest

Petitioner identifies itself as the real party in interest. Pet. 5. Patent Owner identifies itself as the real party in interest. Paper 4, 1. The parties do not raise any issue about real parties in interest.

B. Related Matters

Petitioner and Patent Owner identify the following civil action where Patent Owner has asserted the '856 patent against an alleged infringer: *Centripetal Networks, Inc. v. Cisco Systems, Inc.*, No. 2:18-cv-00094 (E.D. Va. filed February 13, 2018), Appeal No. 21-1888 (Fed. Cir. filed April 7, 2021). Pet. 5; Paper 4, 1.

Petitioner identifies the following civil action where Patent Owner has asserted the '856 patent against another alleged infringer: *Centripetal Networks, Inc. v. Keysight Technologies, Inc. et al.*, No. 2:17-cv-00383 (E.D. Va. filed July 20, 2017). Pet. 5.

C. The '856 Patent (Exhibit 1001)

The '856 patent, titled "Rule-Based Network-Threat Detection for Encrypted Communications," issued on March 13, 2018, from an application filed on December 23, 2015. Ex. 1001, codes (22), (45), (54). The patent discloses systems and methods for rule-based network-threat detection for encrypted communications. *See, e.g.*, *id.* at 1:31–32, 1:57–63, 2:1–3, 2:20–3:56, 23:63–24:30, code (57), Figs. 1–2, 7.

The '856 patent states that network threats may "take a variety of forms (e.g., unauthorized requests or data transfers, viruses, malware, large volumes of traffic designed to overwhelm resources, and the like)." Ex. 1001, 1:8–11. The patent also states that network-threat services may

3

Appx028

IPR2022-00182
Patent 9,917,856 B2

"provide information associated with network threats, for example, reports that include listings of network-threat indicators (e.g., network addresses, domain names, uniform resource identifiers (URIs), and the like)." *Id.* at 1:11–15; *see id.* at 4:1–3, 4:30–32, 10:54–55. The patent explains that encrypted communications may "obfuscate data corresponding to network threats." *Id.* at 1:17–18. The patent then identifies "a need for rule-based network-threat detection for encrypted communications." *Id.* at 1:18–20.

To address that need, the '856 patent describes "a packet-filtering system configured to filter packets in accordance with packet-filtering rules" that receives "data indicating network-threat indicators." Ex. 1001, 1:32–36, code (57). The packet-filtering rules may "cause the packet-filtering system to identify packets comprising unencrypted data, and packets comprising encrypted data." *Id.* at 1:36–39, code (57). In the packets processed by the packet-filtering system, a "portion of the unencrypted data may correspond to one or more of the network-threat indicators." *Id.* at 1:39–40, code (57). Hence, the packet-filtering rules may "cause the packet-filtering system to determine, based on the portion of the unencrypted data, that the packets comprising encrypted data correspond to the one or more network-threat indicators." *Id.* at 1:41–45, code (57); *see id.* at 11:8–13.

The packet-filtering rules may cause the packet-filtering system to identify packets or "determine that the packets comprise data corresponding to the network-threat indicators based on the packets comprising one or more of" the following:

(i)   "a URI specified by [the] rules";

(ii)   "data indicating a protocol version specified by [the] rules";

4

Appx029

IPR2022-00182
Patent 9,917,856 B2

(iii)   "data indicating a method specified by [the] rules";

(iv)   "data indicating a request specified by [the] rules"; or

(v)   "data indicating a command specified by [the] rules."

Ex. 1001, 11:20–28.

Figure 1 in the '856 patent (reproduced below) depicts an environment for rule-based network-threat detection for encrypted communications:

FIG. 1

Figure 1 illustrates environment 100 including networks 102 and 104 with network 102 "associated with one or more individuals or entities (e.g., governments, corporations, service providers, or other organizations)" and network 104 comprising "the Internet, a similar network, or portions thereof." Ex. 1001, 2:20–34, Fig. 1; *see id.* at 1:57–59.

5

IPR2022-00182
Patent 9,917,856 B2

As shown in Figure 1, network 102 includes "hosts 106, 108, and 110, proxy devices 112, 114, and 116, web proxy 118, rule gates 120, 122, 124, 126, and 128, domain name system (DNS) 130, Internet content adaptation protocol (ICAP) server 132, and gateway 134." Ex. 1001, 2:39–43, Fig. 1. As also shown in Figure 1, network 104 includes "one or more rule providers 138, one or more threat-intelligence providers 140, and hosts 142, 144, and 146." *Id.* at 2:53–56, Fig. 1. Gateway 134 resides at the border between networks 102 and 104 and serves as an interface between nodes in the respective networks. *Id.* at 2:50–60, Fig. 1; *see id.* at 2:43–49.

Figure 2 in the '856 patent (reproduced below) depicts a packet-filtering system for rule-based network-threat detection for encrypted communications:
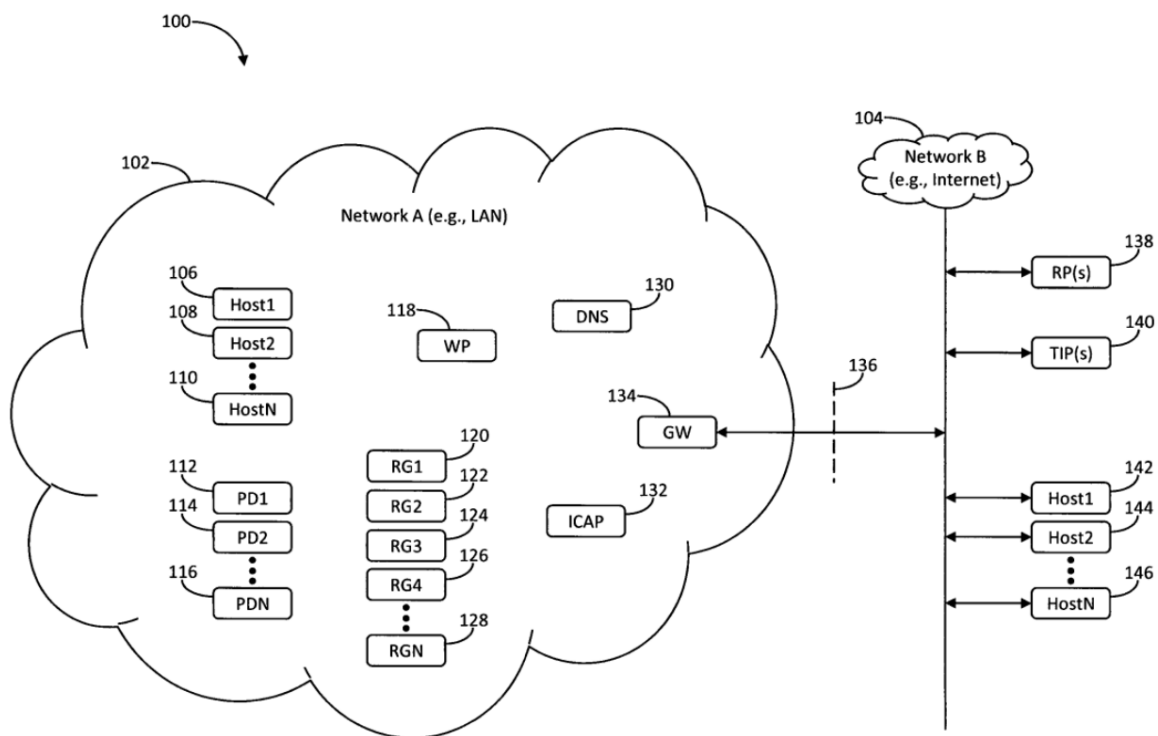

FIG. 2

6

Appx031

IPR2022-00182
Patent 9,917,856 B2

Figure 2 illustrates packet-filtering system 200 comprising "one or more processors 202, memory 204, one or more communication interfaces 206, and data bus 208." Ex. 1001, 2:64–3:2, Fig. 2; *see id.* at 1:60–63. As shown in Figure 2, memory 204 includes the following:

(1)   program module(s) 210 comprising "instructions that when executed by processors 202 cause packet-filtering system 200 to perform" certain functions;

(2)   rule(s) 212 comprising "one or more packet-filtering rules in accordance with which packet-filtering system 200 is configured to filter packets received via communication interfaces 206"; and

(3)   log(s) 214 comprising "one or more entries generated by processors 202 in accordance with rules 212 for packets received by packet-filtering system 200 via communication interfaces 206."

Id. at 3:4–14, Fig. 2

Communication interfaces 206 may "interface packet-filtering system 200 with one or more communication links" in networks 102 and 104 either directly, e.g., via links 236 and 244, or indirectly, e.g., via network device 240 or tap devices 238 and 242. Ex. 1001, 3:15–31. For example, "packet-filtering system 200 may provision tap device 238 with one or more of rules 212 configured to cause tap device 238 to identify packets traversing link 236 that correspond to specified criteria and route (or forward) the packets (or copies thereof) to interface 218" in communication interfaces 206. *Id.* at 3:31–36.

7

IPR2022-00182
Patent 9,917,856 B2

Figure 7 in the '856 patent (reproduced below) depicts steps in a method for rule-based network-threat detection for encrypted communications:
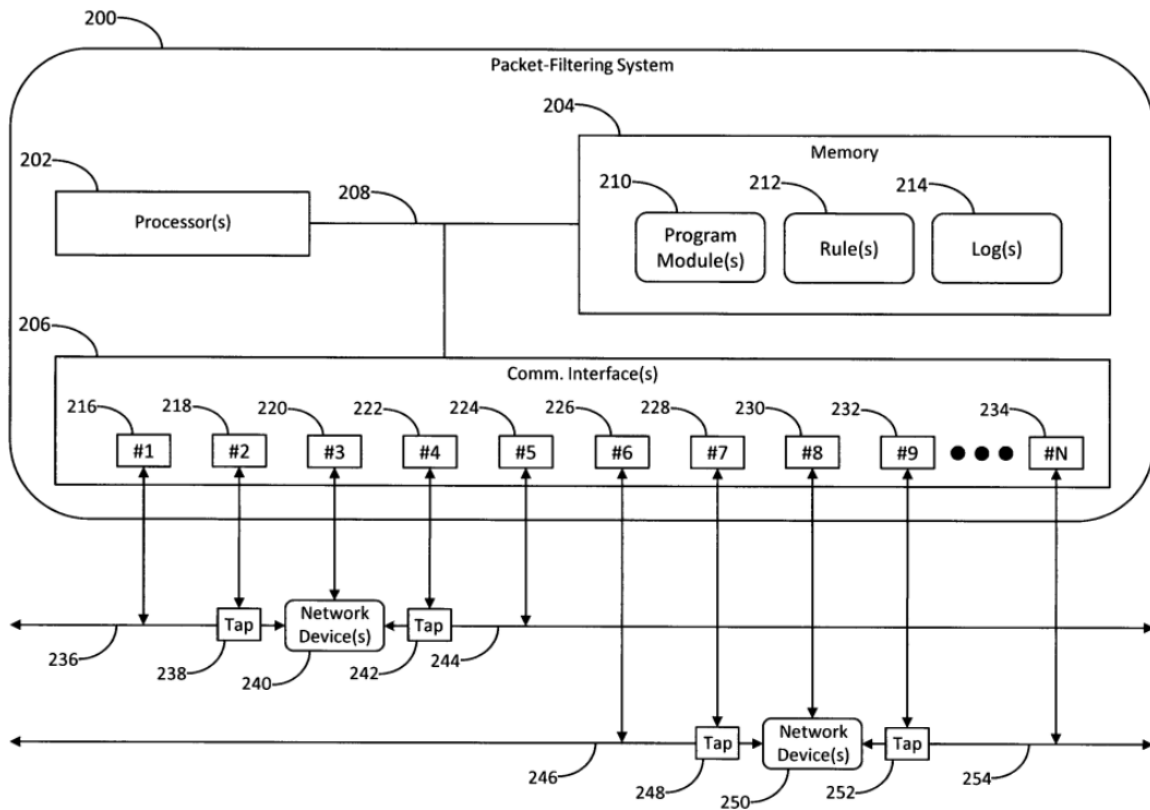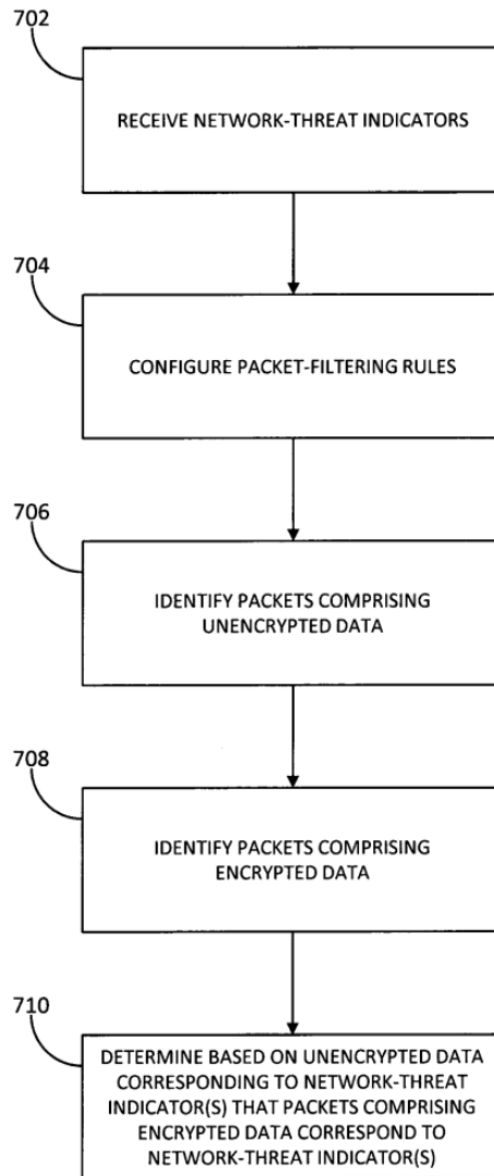

FIG. 7

Figure 7 is a flowchart with steps 702 through 710 in a "method for rule-based network-threat detection for encrypted communications." Ex. 1001, 23:63–65, Fig. 7; *see id.* at 2:1–3.

8

Appx033

IPR2022-00182
Patent 9,917,856 B2

In step 702, "a packet-filtering system may receive data indicating network-threat indicators," e.g., rules generated by rule providers 138 based on "network-threat indicators provided by threat-intelligence providers 140." Ex. 1001, 23:66–24:4, Fig. 7. In step 704, "the packet-filtering system may configure packet-filtering rules in accordance with which it is configured to filter packets." *Id.* at 24:4–6, Fig. 7. In step 706, "the packet-filtering system may identify packets comprising unencrypted data," e.g., "a DNS query, a reply to a DNS query, or a handshake message configured to establish an encrypted communication session." *Id.* at 24:8–12, Fig. 7; *see id.* at 9:16–28. In step 708, "the packet-filtering system may identify packets comprising encrypted data," e.g., packets encrypted according to a secure sockets layer (SSL) protocol or a transport layer security (TLS) protocol. *Id.* at 24:13–17, Fig. 7; *see id.* at 8:65–9:2, 9:47–51, 19:51–55, 20:3–7, 21:10–13, 23:39–42.

In step 710, "the packet-filtering system may determine based on a portion of the unencrypted data corresponding to the network-threat indicators that the packets comprising encrypted data correspond to the network-threat indicators." Ex. 1001, 24:18–21, Fig. 7. For instance, "packet-filtering system 200 may determine that a domain name included in the DNS query, the reply to the DNS query, or the handshake message corresponds to the network-threat indicators, and packet-filtering system 200 may determine that one or more of the packets" encrypted according to an SSL/TLS protocol "correlate to one or more packets comprising the DNS query, the reply to the DNS query, or the one or more handshake messages." *Id.* at 24:22–30; *see id.* at 8:65–9:2, 9:47–51, 19:51–55, 20:3–7, 21:10–13, 23:39–42.

9

IPR2022-00182
Patent 9,917,856 B2

D. The Challenged Claims

Petitioner challenges independent claims 1, 24, and 25. Pet. 8, 18–50. Claim 1 recites a method for filtering and routing packets comprising several steps. Ex. 1001, 25:14–49. Claim 24 recites a system comprising a hardware processor and a memory storing instructions for performing the steps in claim 1. *Id.* at 28:59–29:28. Claim 25 recites a computer-readable medium comprising instructions for performing the steps in claim 1. *Id.* at 29:29–30:31.

Claim 1 exemplifies the challenged claims and reads as follows (with formatting added for clarity and with numbers and letters added for reference purposes)[1]:

> 1. [1.pre] A method comprising:
>
> [1.a] receiving, by a packet-filtering system comprising a hardware processor and a memory and configured to filter packets in accordance with a plurality of packet-filtering rules, data indicating a plurality of network-threat indicators, wherein at least one of the plurality of network-threat indicators comprises a domain name identified as a network threat;
>
> [1.b] identifying packets comprising unencrypted data;
>
> [1.c] identifying packets comprising encrypted data;
>
> [1.d] determining, by the packet-filtering system and based on a portion of the unencrypted data corresponding to one or more network-threat indicators of the plurality of network-threat indicators, packets comprising encrypted data that corresponds to the one or more network-threat indicators;
>
> [1.e] filtering, by the packet-filtering system and based on at least one of

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[1] We use the same numbers and letters that Petitioner uses to identify the claim limitations.

IPR2022-00182
Patent 9,917,856 B2

a uniform resource identifier (URI) specified by the plurality of packet-filtering rules,

data indicating a protocol version specified by the plurality of packet-filtering rules,

data indicating a method specified by the plurality of packet-filtering rules,

data indicating a request specified by the plurality of packet-filtering rules, or

data indicating a command specified by the plurality of packet-filtering rules:

[1.f] packets comprising the portion of the unencrypted data that corresponds to one or more network-threat indicators of the plurality of network-threat indicators; and

[1.g] the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators; and

[1.h] routing, by the packet-filtering system, filtered packets to a proxy system based on a determination that the filtered packets comprise data that corresponds to the one or more network-threat indicators.

Ex. 1001, 25:14–49.

E. The Asserted References

For its challenges, Petitioner relies on the following references:

Name	Reference	Exhibit
Buruganahalli	US 9,680,795 B2, issued June 13, 2017 (based on an application filed June 30, 2016)[2]	1004
Baehr	US 5,878,231, issued March 2, 1999 (based on an application filed February 4, 1997)	1005

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[2] Buruganahalli claims priority to an application filed on June 5, 2013. Ex. 1004, 1:7–15, codes (60), (63); *see* Pet. 7 n.4.

11

Appx036

IPR2022-00182
Patent 9,917,856 B2

Pet. 7. Petitioner asserts that Buruganahalli qualifies as prior art under § 102(a)(2) and that Baehr qualifies as prior art under § 102(a)(1) and § 102(a)(2). *Id.*; *see* 35 U.S.C. § 102(a)(1)–(2).

At this stage of the proceeding, Patent Owner does not dispute that the references qualify as prior art. *See, e.g.*, Prelim. Resp. 45–52.

F. The Asserted Challenges to Patentability

Petitioner asserts the following challenges to patentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 24, 25	103	Buruganahalli
1, 24, 25	103	Buruganahalli, Baehr

Pet. 8, 18–50.

G. Testimonial Evidence

To support its challenges, Petitioner relies on the declaration of Jon Weissman, Ph.D. (Exhibit 1003, "Weissman Decl."). Dr. Weissman states, "I have been retained by counsel for Petitioner Palo Alto Networks Inc. ('PAN' or 'Petitioner') as an expert witness to provide assistance regarding U.S. Patent No. 9,917,856." Ex. 1003 ¶ 1.

III. DISCRETIONARY DENIAL

Patent Owner argues that we should exercise our discretion under § 314(a) or § 325(d) to deny institution. *See* Prelim. Resp. 24–45; Prelim. Sur-reply 1–5; 35 U.S.C. §§ 314(a), 325(d). Petitioner argues that we should decline to exercise our discretion to deny institution. *See* Pet. 8–10; Prelim. Reply 1–5. For the reasons explained below, we decline to exercise our discretion under § 314(a) or § 325(d) to deny institution.

12

IPR2022-00182
Patent 9,917,856 B2

A. *Request for Denial Under § 314(a)*

Under § 314(a), the Director possesses "broad discretion" in deciding whether to institute an *inter partes* review. *See* 35 U.S.C. § 314(a); *Saint Regis Mohawk Tribe v. Mylan Pharm. Inc.*, 896 F.3d 1322, 1327 (Fed. Cir. 2018). The Board decides whether to institute an *inter partes* review on the Director's behalf. 37 C.F.R. § 42.4(a) (2021).

1. BACKGROUND: THE CISCO CASE

In February 2018, Patent Owner filed a complaint against Cisco Systems, Inc. ("Cisco") in the Eastern District of Virginia ("the Cisco case") alleging infringement of several patents, including the '856 patent. Ex. 1027, 1–2; *see* Ex. 1028, 11.[3]

In May and June 2020, the district court conducted a bench trial. Ex. 1027, 3, 22. At trial, Patent Owner asserted infringement of ten claims in five patents, including claims 24 and 25 in the '856 patent. *Id.* at 1–2, 22.

In October 2020, the district court issued an opinion with findings of fact and conclusions of law. Ex. 1027, 1. Among other things, the court found that various combinations of Cisco products infringed the asserted claims in four patents, including the '856 patent, but not the asserted claims in the fifth patent. *Id.* at 22–23, 29, 41, 57, 78–79, 95, 107, 110, 123, 160, 166. Additionally, the court determined that Cisco failed to demonstrate invalidity of the infringed patents with clear and convincing evidence. *Id.* at 23, 67, 83, 96–98, 112–13, 160.

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[3] For Exhibit 1028 (Cisco's Non-Confidential Opening Brief in the Appeal to the Federal Circuit), we cite to the page numbers appearing in the brief rather than the page numbers that Petitioner applied to the exhibit.

13

IPR2022-00182
Patent 9,917,856 B2

As compensation for the infringement, the district court awarded past damages of about $756 million. Ex. 1027, 149, 166. The court decided that Cisco willfully infringed and enhanced the past damages by a multiple of 2.5 to "award lump sum past damages" of about $1.9 billion. *Id.* at 161, 166; *see id.* at 162. Additionally, the court declined to enjoin Cisco from future infringement. *Id.* at 162–64. Instead, the court determined that Patent Owner should receive an ongoing royalty (1) for a first three-year term between about $168 million and about $300 million per year and (2) for a second three-year term between about $84 million and about $150 million per year. *Id.* at 165–66. Hence, over six years the ongoing royalty should exceed $754 million. *Id.* at 166; *see* Ex. 1028, 13. Based on the judgment in the Cisco case, Patent Owner should receive at least $2.6 billion. *See* Ex. 1027, 149, 161, 166.

Cisco appealed to the Federal Circuit. Ex. 1028, 4–5. The appeal is pending.

2. BACKGROUND: THE PAN CASE

In March 2021, Patent Owner filed a complaint against Petitioner in the Eastern District of Virginia ("the PAN case") alleging infringement of twelve patents. Ex. 3002 ¶¶ 13–37, 61–418. In its complaint, Patent Owner did not assert against Petitioner any of the four patents that Cisco infringed. *See, e.g., id.* ¶¶ 61–418.

In July 2021, Patent Owner filed an amended complaint against Petitioner in the PAN case alleging infringement of thirteen patents, i.e., the twelve previously asserted patents and a newly asserted patent. Ex. 3003 ¶¶ 13–39, 78–468. In its amended complaint, Patent Owner did not assert

14

Appx039

IPR2022-00182
Patent 9,917,856 B2

against Petitioner any of the four patents that Cisco infringed. *See, e.g.*, *id.* ¶¶ 78–468.

In March 2022, the district court granted Petitioner's motion to stay the PAN case pending resolution of the Office proceedings discussed in the next section. Ex. 3004, 3, 11, 23.

3. BACKGROUND: OFFICE PROCEEDINGS

In July and August 2021, Petitioner filed petitions requesting *inter partes* reviews or a post-grant review of all claims in each of the thirteen patents asserted by Patent Owner in the PAN case. Ex. 3004, 3.

In September and November 2021, Petitioner filed petitions requesting *inter partes* reviews of various claims in three of the four patents that Cisco infringed as follows:

- IPR2021-01520 requesting review of claims 1, 2, 4, 9–11, 13, 18, and 19 in U.S. Patent No. 9,686,193 B2 ("the '193 patent");

- IPR2021-01521 requesting review of claims 1, 9–11, 19–21, and 29–30 in U.S. Patent No. 9,560,176 B2 ("the '176 patent"); and

- IPR2022-00182 (this proceeding) requesting review of claims 1, 24, and 25 in the '856 patent.[4]

Pet. 8, 18–50; IPR2021-01520, Paper 2 at 7, 26–68 (PTAB Sept. 15, 2021); IPR2021-01521, Paper 2 at 6, 16–56 (PTAB Sept. 15, 2021).

Previously, Cisco sought Board review of the '193 and '176 patents but not the '856 patent. *See* IPR2018-01559, Paper 1 (PTAB Aug. 21, 2018) (challenging claims in the '193 patent); IPR2018-01654, Paper 1 (PTAB

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[4] As with the '856 patent, the district court in the Cisco case found that various combinations of Cisco products infringed the asserted claims the '193 and '176 patents. Ex. 1027, 22–23, 29, 41, 57, 78–79, 95, 160, 166.

15

IPR2022-00182
Patent 9,917,856 B2

Sept. 17, 2018) (challenging claims in the '176 patent). The Board denied
Cisco's petitions. *See* IPR2018-01559, Paper 7 at 13 (PTAB Apr. 2, 2019);
IPR2018-01654, Paper 7 at 22 (PTAB May 6, 2019). No one other than
Petitioner has sought Board review of the '856 patent.

      As for the other Petitioner-initiated proceedings, the Board instituted
review in about half of the proceedings involving the thirteen patents
asserted by Patent Owner in the PAN case. Ex. 3004, 3. In IPR2021-01520
for the '193 patent, the Board denied the petition under 35 U.S.C. § 325(d).
IPR2021-01520, Paper 23 at 27 (PTAB Mar. 22, 2022). In IPR2021-01521
for the '176 patent, the Board denied the petition on the merits. IPR2021-
01521, Paper 23 at 19 (PTAB Mar. 24, 2022).

<center>4. REQUEST FOR DENIAL BASED ON
ALLEGED HARASSMENT AND GAMESMANSHIP</center>

(a)   <u>The Contentions of the Parties</u>

      Citing *General Plastic Industrial Co. v. Canon Kabushiki Kaisha*,
IPR2016-01357, Paper 19 at 17 (PTAB Sept. 6, 2017) (precedential as to
§ II.B.4.i) ("*General Plastic*"), Patent Owner asserts that "the Board can
take 'undue inequities and prejudices to Patent Owner into account'" when
deciding whether to exercise discretion under § 314(a). Prelim. Resp. 34.
Patent Owner asserts that "Petitioner has no reasonable basis to maintain this
challenge other than harassment" because the '856 patent "has never been
asserted, or threatened to be asserted, against Petitioner." *Id.* at 35; *see*
Prelim. Sur-reply 2. Patent Owner also asserts that "Petitioner seeks to
leverage this IPR against Patent Owner in unrelated litigation" because the
'856 patent "underlies a significant damages award based on" Cisco's
infringement. Prelim. Resp. 35; *see id.* at 45; Prelim. Sur-reply 2.

<center>16</center>

<center>**Appx041**</center>

IPR2022-00182
Patent 9,917,856 B2

Additionally, Patent Owner contends that deficiencies in the Petition evidence "Petitioner's sole purpose for filing this petition," i.e., "harassment and leverage." Prelim. Resp. 35. Specifically, Patent Owner criticizes the Petition for:

(1) containing a "haphazard" claim chart for the ground based on Buruganahalli alone that cites (a) "piecemeal disclosures from the references" and (b) "conclusory allegations" about what an ordinarily skilled artisan would have known;

(2) failing to specify for the ground based on Buruganahalli and Baehr "where each claim element is found in the combination"; and

(3) giving "short shrift" to the "validity finding and known evidence of objective indicia of nonobviousness (secondary considerations)" from the Cisco case.

Id. at 35–36. Patent Owner contends that Petitioner's challenge to "only the claims underlying the Cisco verdict" also evidences improper conduct. *Id.* at 35 (emphasis omitted); *see* Prelim. Sur-reply 2.

Patent Owner asserts that the '856 patent "has already withstood a validity challenge" in the Cisco case based on prior art like Buruganahalli that "taught filtering decrypted data," rather than "filtering encrypted packets" as required by the '856 patent's claims. Prelim. Resp. 37–38, 46–47; *see id.* at 39, 41–42; Prelim. Sur-reply 4. According to Patent Owner, Petitioner "raises substantially the same arguments already rejected by the district court" in the Cisco case. Prelim. Sur-reply 1.

Further, Patent Owner argues that "Congress recognized the serious concerns that IPRs 'not to be used as tools for harassment or a means to prevent market entry through repeated litigation and administrative attacks on the validity of a patent.'" Prelim. Resp. 37 (quoting H.R. Rep. No. 112-

17

IPR2022-00182
Patent 9,917,856 B2

98, pt. 1, at 48 (2011)); *see* Prelim. Sur-reply 2, 5. Patent Owner also argues that allowing "Petitioner's gamesmanship here will only encourage bad actors to harass patent owners by filing IPRs any time a meaningful judgment is entered against third-party defendants, in hopes of extracting some form of advantage (monetary or otherwise)." Prelim. Resp. 37; *see* Prelim. Sur-reply 2.

Petitioner asserts that it has a "legitimate interest" in "pursuing this IPR because the '856 patent is part of a set of patents that have been asserted against others in the industry." Prelim. Reply 1. Petitioner asserts that (1) Patent Owner has accused Petitioner of "infringing numerous patents" in the PAN case and (2) Petitioner "is under widespread threat of assertion from" Patent Owner. *Id.* at 2. Additionally, Petitioner contends that Patent Owner's expert testified during the trial in the Cisco case that Petitioner has "sought to imitate the Cisco solutions that are described as infringing the patents in this suit," including the '856 patent. *Id.* at 1–2 (emphases omitted).

Further, Petitioner asserts that Cisco's prior art for the '856 patent differs from Buruganahalli. Prelim. Reply 2 n.2. Petitioner also asserts that Patent Owner's criticisms of the Petition lack merit. *See id.*

Patent Owner responds by asserting that its expert "did not make infringement accusations against Petitioner" during the trial in the Cisco case. Prelim. Sur-reply 3 (emphasis omitted).

(b)   Analysis

The patent statute provides that "a person who is not the owner of a patent may file with the Office a petition to institute an inter partes review of the patent." 35 U.S.C. § 311(a). In contrast to a covered business method

18

Appx043

IPR2022-00182
Patent 9,917,856 B2

patent review, neither the statute nor our rules require an infringement assertion against a person before that person may file a petition for an *inter partes* review. *See* 35 U.S.C. § 311; AIA § 18(a)(1)(B)[5]; 37 C.F.R. §§ 42.101, 42.302; *see also Coalition for Affordable Drugs VI, LLC v. Celgene Corp.*, IPR2015-01092, Paper 19 at 3–4 (PTAB Sept. 25, 2015) (denying motion for sanctions).

As the PTAB Consolidated Trial Practice Guide ("CTPG") explains, however, the Board will "take into account whether various considerations . . . warrant the exercise of the Director's discretion to decline to institute review." CTPG 55.[6] Among other things, the AIA requires "the Director to 'consider the effect of any such regulation [under this section] on the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings instituted under this chapter.'" *Id.* at 56 (alteration in original) (quoting 35 U.S.C. §§ 316(b), 326(b)).

The Board has exercised discretion under § 314(a) to deny institution in various situations. As an example, the Board has exercised discretion to deny institution due to the advanced state of a civil action where a patent owner has asserted a challenged patent against a petitioner. *See, e.g.*, *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 (PTAB May 13, 2020) (informative). As another example, the Board has exercised discretion to deny institution of a later-filed petition after having considered an earlier-filed petition challenging the same patent. *See, e.g.*, *Valve Corp. v. Elec.*

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[5] Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011).

[6] Available at https://www.uspto.gov/TrialPracticeGuideConsolidated.

19

Appx044

IPR2022-00182
Patent 9,917,856 B2

Scripting Prods., Inc., IPR2019-00062, Paper 11 (PTAB Apr. 2, 2019) (precedential). As further examples, the Board has exercised discretion to deny institution when a petition demonstrates a reasonable likelihood of prevailing as to only some, not all, challenged claims (*see, e.g.*, *Chevron Oronite Co. v. Infineum USA L.P.*, IPR2018-00923, Paper 9 (PTAB Nov. 7, 2018) (informative)), and when a petition suffers from a lack of particularity that results in voluminous and excessive grounds (*see, e.g.*, *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 (PTAB Mar. 6, 2019) (informative)).

This case differs from other situations where the Board has exercised discretion under § 314(a) to deny institution. For example, we are not presented with a later-filed petition after having considered an earlier-filed petition challenging the same patent. Instead, Patent Owner asks us to deny institution because Petitioner challenges claims in a patent not asserted against Petitioner in an infringement action, arguing that Petitioner's challenge conflicts with the AIA's purposes. *See* Prelim. Resp. 37–38; Prelim. Sur-reply 2.

Patent Owner's arguments fail to persuade us to exercise our discretion to deny institution based on harassment and gamesmanship. Under the circumstances here, we do not view Petitioner's challenge to the '856 patent as contrary to the AIA's purposes. *See, e.g.*, *Halliburton Energy Servs., Inc. v. U.S. Well Servs., LLC*, IPR2021-01316, Paper 9 at 9 (PTAB Feb. 22, 2022) (deciding that a petition challenging an unasserted patent was not "contrary to the purposes of the AIA"). "The AIA was designed to encourage the filing of meritorious patentability challenges, by any person who is not the patent owner, in an effort to further improve patent quality." *Coalition*, IPR2015-01092, Paper 19 at 4.

<div align="center">20</div>

IPR2022-00182
Patent 9,917,856 B2

Based on the current record and for the reasons explained below, the merits of Petitioner's challenge to the '856 patent seem "particularly strong." *See infra* §§ III.A.5(f), IV.D.2–IV.D.3, IV.E.2–IV.E.3. Further, Petitioner expresses reasonable concern that Patent Owner may initiate additional litigation involving the '856 patent. *See* Prelim. Reply 1–2.

Additionally, contrary to Patent Owner's contention, Petitioner has not challenged "only the claims underlying the Cisco verdict." *See* Pet. 8, 18–50; Prelim. Resp. 35; Ex. 1027, 41, 57. Also, Petitioner has challenged only three of the four patents that Cisco infringed, and the Board has denied institution in two of the three proceedings. *See supra* § III.A.3. No one other than Petitioner has sought Board review of the '856 patent.

As for Patent Owner's assertion that "Petitioner seeks to leverage this IPR against Patent Owner in unrelated litigation," Patent Owner has not substantiated that assertion. *See* Prelim. Resp. 35–39.

As for Patent Owner's assertion that the '856 patent "has already withstood a validity challenge" in the Cisco case based on prior art like Buruganahalli, we disagree. *See* Prelim. Resp. 37–38. According to Patent Owner, the prior art for the '856 patent in the Cisco case "taught filtering decrypted data," rather than "filtering encrypted packets" as required by the '856 patent's claims. Prelim. Resp. 37–38, 46–47; *see id.* at 15, 41–42; Ex. 1027, 57–58 (finding that the prior art for the '856 patent in the Cisco case "did not possess the functionality" to "differentiate between unencrypted and encrypted traffic" or "determine what portion of the packets are unencrypted or encrypted"). For the reasons explained below in our patentability analysis, Petitioner establishes persuasively on the current record that Buruganahalli teaches "filtering encrypted packets"

21

IPR2022-00182
Patent 9,917,856 B2

as required by the '856 patent's claims. *See infra* § IV.D.2(h); Ex. 1003

¶¶ 120, 134–135; Ex. 1004, 8:55–60, 11:47–51, 14:21–33, 14:50–55.

Among other things, Buruganahalli explains that by "parsing the handshake

traffic," e.g., "parsing a client hello message to extract a hostname that

identifies the destination domain," a security device may "apply one or more

firewall policies/rules . . . related to destination domains" without "having to

decrypt" encrypted communications. Ex. 1004, 11:7–19; *see id.* at 5:24–27,

5:35–42, 7:1–9; Ex. 1003 ¶¶ 94, 108, 113.

      As for Patent Owner's criticisms of the Petition, we agree with

Petitioner that the criticisms lack merit. *See* Prelim. Resp. 35–36; Prelim.

Reply 2 n.2. For the ground based on Buruganahalli alone, the claim chart

in the Petition (1) explains how Buruganahalli teaches the limitations in

claims 1, 24, and 25 and (2) cites Dr. Weissman's testimony to support

assertions about what an ordinarily skilled artisan would have known.

Pet. 28–42; *see* Ex. 1003 ¶¶ 101–146; *infra* §§ IV.D.2–IV.D.3. For the

ground based on Buruganahalli and Baehr, the Petition explains how

Buruganahalli teaches most of the limitations in claims 1, 24, and 25 and

how Baehr teaches limitation [1.h] and the similar limitations in claims 24

and 25, e.g., "[1.h] routing, by the packet-filtering system, filtered packets to

a proxy system based on a determination that the filtered packets comprise

data that corresponds to the one or more network-threat indicators."

Pet. 42–50; *see* Ex. 1003 ¶¶ 147–158; *infra* §§ IV.D.2(b)–(h), IV.D.3,

IV.E.2; *see also* Pet. 28–39; Ex. 1003 ¶¶ 101–135.

      As for the "validity finding and known evidence of objective indicia

of nonobviousness (secondary considerations)" from the Cisco case,

Buruganahalli differs materially from the prior art for the '856 patent in the

22

Appx047

IPR2022-00182
Patent 9,917,856 B2

Cisco case for the reasons discussed above and in our patentability analysis below. *See infra* § IV.D.2(h). Additionally, Petitioner addresses objective indicia of nonobviousness by asserting that "[f]rom what little can be discerned from the public record, the evidence fails to show nexus." Pet. 50. Based on the current record and for the reasons explained below, Patent Owner has not shown sufficiently that a presumption of nexus should apply or that a nexus exists between the asserted objective evidence and the merits of the claimed invention. *See infra* § IV.D.2(j).

For the reasons discussed above, Patent Owner's arguments about harassment and gamesmanship do not warrant the exercise of discretion to deny institution.

5. REQUEST FOR DENIAL BASED ON PARALLEL LITIGATION

When deciding whether to exercise discretion under § 314(a) to deny institution, the Board has considered the status of litigation involving the parties in light of the AIA's objective "to provide an effective and efficient alternative to district court litigation." *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 12, 19–20 (PTAB Sept. 12, 2018) (precedential) (quoting *Gen. Plastic*, IPR2016-01357, Paper 19 at 16–17).

The Board has set forth the following nonexclusive factors to consider when determining whether to exercise discretion under § 314(a) to deny institution due to the advanced state of parallel litigation:

(1)   whether the court granted a stay or evidence exists that one may be granted if the Board institutes a trial;

(2)   the proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;

(3)   the investment in the parallel litigation by the court and the parties;

23

Appx048

IPR2022-00182
Patent 9,917,856 B2

(4)   the overlap in the issues raised by the petition and the issues in the parallel litigation;

(5)   whether the petitioner and the defendant in the parallel litigation are the same party; and

(6)   other circumstances that impact the Board's exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). These factors "relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding." *Id.* at 6. Further, *Fintiv* instructs that the Board should take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* (citing CTPG 58).

(a)   Factor (1): Stay of Parallel Litigation

Patent Owner asserts that factor (1) "strongly" favors discretionary denial because "there can be no debate that no stay is possible" in the Cisco case. Prelim. Resp. 40. Patent Owner does not address a stay in the PAN case. *Id.*

Patent Owner misplaces its reliance on the Cisco case. When considering parallel litigation in light of *Fintiv*, the Board seeks to, among other things, minimize "inefficiency and duplication of efforts" when another tribunal may resolve "the same or substantially the same issues." *Fintiv*, IPR2020-00019, Paper 11 at 5 n.7, 6, 14; *see Intel Corp. v. VLSI Tech. LLC*, IPR2019-01192, Paper 15 at 11 (PTAB Jan. 9, 2020). A stay of parallel litigation pending resolution of a Board proceeding "allays concerns about inefficiency and duplication of efforts." *Fintiv*, IPR2020-00019, Paper 11 at 6.

24

Appx049

IPR2022-00182
Patent 9,917,856 B2

This proceeding also will involve no "duplication of efforts" with the Cisco case. There, the district court did not consider the invalidity of claims 1, 24, and 25 in light of Buruganahalli alone or combined with Baehr. *See* Ex. 1027, 57–67. And for the reasons discussed above and in our patentability analysis below, Buruganahalli differs materially from the prior art for the '856 patent in the Cisco case. *See supra* § III.A.4(b); *infra* § IV.D.2(h).

This proceeding will involve no "duplication of efforts" with the PAN case. There, Patent Owner did not assert the '856 patent against Petitioner. *See* Ex. 3002 ¶¶ 61–418; Ex. 3003 ¶¶ 78–468. But even if Patent Owner had asserted the '856 patent against Petitioner, the district court has stayed the PAN case, and the stay "allays concerns about inefficiency and duplication of efforts." *See Fintiv*, IPR2020-00019, Paper 11 at 6; Ex. 3004, 3, 11, 23.

For these reasons, factor (1) weighs against discretionary denial.

(b)   Factor (2): Trial Date in Parallel Litigation

Patent Owner asserts that factor (2) "strongly" favors discretionary denial because the trial in the Cisco case "has already completed long before the Board's statutory deadline." Prelim. Resp. 40. Patent Owner does not address the trial date in the PAN case. *Id.*

For the reasons discussed for factor (1), Patent Owner misplaces its reliance on the Cisco case. *See supra* § III.A.5(a). The district court has stayed the PAN case and has set no trial date, and the PAN case does not involve the '856 patent. *See* Ex. 3002 ¶¶ 13–37, 61–418; Ex. 3003 ¶¶ 13–39, 78–468; Ex. 3004, 3, 11, 23. Thus, factor (2) weighs against discretionary denial.

IPR2022-00182
Patent 9,917,856 B2

(c)   Factor (3): Investment in Parallel Litigation

Patent Owner asserts that factor (3) "strongly" favors discretionary denial because "there have been massive investments" in the Cisco case. Prelim. Resp. 40. Patent Owner does not address the investments in the PAN case. *Id.*

Patent Owner again misplaces its reliance on the Cisco case. There, the district court did not consider the invalidity of claims 1, 24, and 25 in light of Buruganahalli alone or combined with Baehr. *See* Ex. 1027, 57–67. Further, the record before us does not indicate that the parties in the Cisco case expended any effort addressing the invalidity of claims 1, 24, and 25 in light of Buruganahalli alone or combined with Baehr.

In the PAN case, the parties and the court have not expended any effort addressing the invalidity of claims 1, 24, and 25 in light of Buruganahalli alone or combined with Baehr. *See* Exs. 3002–3004.

For these reasons, factor (3) weighs against discretionary denial.

(d)   Factor (4): Overlapping Issues

Patent Owner asserts that factor (4) "strongly" favors discretionary denial because Buruganahalli is "substantially similar to" the prior art for the '856 patent in the Cisco case. Prelim. Resp. 41–42. Patent Owner does not identify any overlapping issues in the PAN case. *Id.* at 40–42.

We disagree that Buruganahalli is "substantially similar to" the prior art for the '856 patent in the Cisco case. *See* Prelim. Resp. 41. For the reasons discussed above and in our patentability analysis below, Buruganahalli differs materially from the prior art for the '856 patent in the Cisco case. *See supra* § III.A.4(b); *infra* § IV.D.2(h).

26

IPR2022-00182
Patent 9,917,856 B2

In the PAN case, Patent Owner did not assert the '856 patent against Petitioner. *See* Ex. 3002 ¶¶ 61–418; Ex. 3003 ¶¶ 78–468. Thus, there are no overlapping issues.

For these reasons, factor (4) weighs against discretionary denial.

(e)   Factor (5): Petitioner's Status in Parallel Litigation

"If a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact against exercising discretion to deny institution." *Fintiv*, IPR2020-00019, Paper 11 at 13–14. But "even if the petition is brought by a different party," we should consider whether another proceeding presents "the same or substantially the same issues" to avoid "redoing the work of another tribunal." *Id.* at 14.

Patent Owner asserts that factor (5) favors discretionary denial due to Petitioner's relationship with Cisco. *See* Prelim. Resp. 43–44; Prelim. Sur-reply 5. In particular, Patent Owner contends that Petitioner collaborates with Cisco by deploying Petitioner's "Next-Generation Firewall" with Cisco's "Application Centric Infrastructure." Prelim. Resp. 43–44. According to Patent Owner, Petitioner "explicitly touts the integration of its products" with Cisco's products. Prelim. Sur-reply 5 (citing Ex. 2009, 1). Patent Owner also contends that Petitioner and Cisco are "charter members" of an organization for cybersecurity providers called the Cyber Threat Alliance that "encourages members to share information about threats." Prelim. Resp. 44 (citing Ex. 2008, 1); Prelim. Sur-reply 5.

Petitioner asserts that "[h]elping customers to improve their existing Cisco-based infrastructure" by using Petitioner's products instead of Cisco's products is "competition, not partnership." Prelim. Reply 3. Petitioner also asserts that the Cyber Threat Alliance is "an industry-wide non-profit

27

IPR2022-00182
Patent 9,917,856 B2

membership organization with 34 private-sector members" where most
members "are competitors." *Id.* According to Petitioner, Patent Owner's
"argument is analogous to treating members of the same standard setting
organization as the same party." *Id.* at 3–4.

For factor (5), Petitioner's relationship with Cisco, if any, does not
matter because the Cisco case does not involve "the same or substantially
the same issues" as this proceeding. *See supra* §§ III.A.5(a), III.A.5(d).
For the reasons discussed above and in our patentability analysis below,
Buruganahalli differs materially from the prior art for the '856 patent in
the Cisco case. *See supra* § III.A.4(b); *infra* § IV.D.2(h). Additionally,
Petitioner was not a defendant in the Cisco case. *See supra* § III.A.1.

Petitioner is the defendant in the PAN case. But the PAN case does
not involve "the same or substantially the same issues" as this proceeding
because the PAN case does not involve the '856 patent. *See supra*
§§ III.A.5(a), III.A.5(d).

Because the Cisco and PAN cases do not involve "the same or
substantially the same issues" as this proceeding, there is no chance of
an inconsistent outcome with a court decision.

For these reasons, factor (5) weighs against discretionary denial.

(f)   Factor (6): Other Circumstances

Factor (6) concerns other circumstances and recognizes that a decision
whether to exercise discretion under § 314(a) to deny institution should rest
on "a balanced assessment of all relevant circumstances in the case,
including the merits." *Fintiv*, IPR2020-00019, Paper 11 at 14; *see* CTPG 58.
For example, "if the merits of a ground raised in the petition seem

28

Appx053

IPR2022-00182
Patent 9,917,856 B2

particularly strong on the preliminary record, this fact has favored institution." *Fintiv*, IPR2020-00019, Paper 11 at 14–15.

Patent Owner contends that factor (6) "strongly" favors discretionary denial for three reasons. *See* Prelim. Resp. 44–45; Prelim. Sur-reply 5. First, Patent Owner asserts that Petitioner's "challenge is a transparent and harassing attempt to gain leverage against Patent Owner in unrelated litigation." Prelim. Resp. 45; *see* Prelim. Sur-reply 5. Second, Patent Owner asserts that Petitioner (a) "presents art that is duplicative and cumulative to art previously considered by the Office" and (b) "has not identified any error in the Office's evaluation." Prelim. Resp. 44. Third, Patent Owner asserts that Petitioner is "unlikely to succeed on the merits." *Id.*

For the reasons discussed above, Patent Owner's assertion that Petitioner's "challenge is a transparent and harassing attempt to gain leverage against Patent Owner in unrelated litigation" is unpersuasive under the circumstances presented and does not warrant the exercise of discretion to deny institution. *See supra* § III.A.4(b); Prelim. Resp. 45.

For the reasons explained below in our discussion of Patent Owner's arguments under 35 U.S.C. § 325(d), we disagree with Patent Owner's assertion that Petitioner "presents art that is duplicative and cumulative to art previously considered by the Office." *See infra* § III.B.5(a); Prelim. Resp. 44.

For the reasons explained below in our patentability analysis, we disagree with Patent Owner's assertion that Petitioner is "unlikely to succeed on the merits." *See infra* §§ IV.D.2–IV.D.3, IV.E.2–IV.E.3; Prelim. Resp. 44. Rather, based on the current record and for the reasons explained

29

Appx054

IPR2022-00182
Patent 9,917,856 B2

below, the merits of Petitioner's challenge to the '856 patent seem "particularly strong." *See infra* §§ IV.D.2–IV.D.3, IV.E.2–IV.E.3.

For these reasons, factor (6) weighs against discretionary denial. *See Fintiv*, IPR2020-00019, Paper 11 at 14–15.

(g)   Conclusion Concerning Denial Based on Parallel Litigation

After analyzing the *Fintiv* factors with a holistic view of whether the efficiency and integrity of the system are best served by denying or instituting review, we determine that, on balance, the factors do not favor denying an *inter partes* review. Hence, we decline to exercise our discretion under § 314(a) to deny institution.

B. Request for Denial Under § 325(d)

Section 325(d) provides that "[i]n determining whether to institute" an *inter partes* review, "the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office." 35 U.S.C. § 325(d). The Director "is permitted, but never compelled, to institute" an *inter partes* review. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016).

1. THE *ADVANCED BIONICS* FRAMEWORK

When deciding whether to exercise our discretion under § 325(d), we follow the two-part framework set forth in *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential) ("*Advanced Bionics*"). Specifically, we must first determine "whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same

30

Appx055

IPR2022-00182
Patent 9,917,856 B2

arguments previously were presented to the Office." *Advanced Bionics*,

Paper 6 at 8. That determination involves "two separate issues" as follows:

> (1)   "whether the petition presents to the Office the same
>   or substantially the same art previously presented to
>   the Office"; and
>
> (2)   "whether the petition presents to the Office the same
>   or substantially the same arguments previously presented
>   to the Office."

Id. at 7.

If "either condition of first part of the framework is satisfied," we

must then determine "whether the petitioner has demonstrated that the

Office erred in a manner material to the patentability of challenged claims."

Advanced Bionics, Paper 6 at 8. "An example of a material error may

include misapprehending or overlooking specific teachings of the relevant

prior art where those teachings impact patentability of the challenged

claims." *Id.* at 8 n.9.

When deciding whether to exercise our discretion under § 325(d)

in view of the *Advanced Bionics* framework, we weigh the following

nonexclusive factors:

> (a)   the similarities and material differences between the
>   asserted references and the prior art involved during
>   prosecution;
>
> (b)   the cumulative nature of the asserted references and
>   the prior art evaluated during prosecution;
>
> (c)   the extent to which the asserted references were
>   evaluated during prosecution, including whether
>   a rejection rested on any reference;
>
> (d)   the extent of overlap between the arguments made during
>   prosecution and Petitioner's reliance on the asserted

31

Appx056

IPR2022-00182
Patent 9,917,856 B2

references or Patent Owner's contentions concerning
them;

(e)   whether Petitioner has pointed out sufficiently how the
Examiner erred in analyzing the asserted references; and

(f)   the extent to which additional evidence and facts
presented in the petition warrant reconsideration
of the asserted references or arguments.

See Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586,

Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first

paragraph) ("*Becton*").

2. SUMMARY OF THE '856 PATENT'S PROSECUTION

The following summary of the '856 patent's prosecution provides

background that will assist in explaining our analysis.

In December 2015, Patent Owner filed application no. 14/757,638

("the '638 application") that issued as the '856 patent. *See* Ex. 1001, codes

(10), (21), (22); Ex. 1002, 1–64, 70. The '638 application included

independent method claim 1, independent system claim 24, and independent

computer-readable-medium claim 25 that issued as patent claims 1, 24,

and 25, respectively, after various amendments. Ex. 1002, 43, 49–50; *see id.*

at 1352, 1359–61, 1379–81, 1384–86, 1414, 1420–22; Ex. 1001, 25:14–49,

28:59–30:31.

In April 2017, the Examiner rejected claims 1, 24, and 25 under § 101

as directed to patent-ineligible subject matter and under § 112(b) due to an

"antecedent basis error." Ex. 1002, 1064–69. The Examiner also rejected

claims 1, 24, and 25 under § 103 as unpatentable over Spies and Sorensen.[7]

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[7] *See* U.S. Patent Application Publication No. 2005/0138353 A1, titled
"Identity-Based-Encryption Message Management System," to Spies et al.

32

IPR2022-00182
Patent 9,917,856 B2

Id. at 1069–72. The Examiner cited Spies for teaching most of the claimed

subject matter and Sorensen for teaching network-threat indicators. *Id.* at

1070–72.

In July 2017, Patent Owner submitted an information-disclosure

statement listing about 50 documents, including an International Search

Report for a foreign counterpart to the '638 application and Martini.[8]

Ex. 1002, 1127–34; *see id.* at 1338–50 (International Search Report). The

International Search Report described Martini as a "document of particular

relevance" such that "the claimed invention cannot be considered novel or

cannot be considered to involve an inventive step when the document is

taken alone." *Id.* at 1340 (citing Ex. 2005 ¶¶ 24–27). Moreover, the

International Search Report mapped Martini's disclosures to the limitations

in a claim identical to claim 1 in the '638 application as filed. *Id.* at

1346–47 (citing Ex. 2005 ¶¶ 18, 24, Fig. 1); *compare id.* at 43 (claim 1 in

the '638 application as filed), *with id.* at 1346–47 (quoting claim 1 in a

foreign counterpart to the '638 application).

In October 2017, Patent Owner amended claim 1 to, among other

things, require (1) "filtering . . . packets comprising the portion of the

unencrypted data corresponding to one or more network-threat indicators of

the plurality of network-threat indicators" and (2) "filtering . . . the

determined packets comprising the encrypted data that corresponds to the

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("Spies") (Ex. 2001); U.S. Patent Application Publication No. 2012/0023576
A1, titled "Insider Threat Correlation Tool," to Sorensen et al. ("Sorensen")
(Ex. 2002).

[8] *See* U.S. Patent Application Publication No. 2014/0317397 A1, titled
"Selectively Performing Man in the Middle Decryption," to Martini
("Martini") (Ex. 2005).

33

IPR2022-00182
Patent 9,917,856 B2

one or more network-threat indicators." Ex. 1002, 1352. Patent Owner similarly amended claims 24 and 25. *Id.* at 1359–61. Also, Patent Owner argued against the rejections. *Id.* at 1362–67.

For the § 103 rejection, Patent Owner argued that Spies "fails to teach or suggest 'determining, by the packet-filtering system and based on a portion of the unencrypted data corresponding to one or more network-threat indicators of the plurality of network-threat indicators, packets comprising the encrypted data that corresponds to the one or more network-threat indicators'" as "recited in amended independent claim 1." Ex. 1002, 1365. Specifically, Patent Owner asserted that Spies discloses (1) filtering "a scanned and unencrypted version" of an encrypted message and (2) further "processing operations such as virus scanning, spam filtering, notifications, archiving, or security policy enforcement" performed on "the decrypted message." *Id.* (citing Ex. 2001 ¶¶ 130–131, 143–144, 155, 162–164); *see id.* at 1366. Patent Owner also asserted that Spies "does not discuss any determination regarding any encrypted data based on any unencrypted data corresponding to one or more network-threat indicators." *Id.* at 1365. Further, Patent Owner argued that Spies "fails to teach or suggest network-threat indicators" and "also fails to teach or suggest encrypted data that corresponds to the one or more network-threat indicators." *Id.*

Additionally, Patent Owner argued that Sorensen "whether taken alone or in combination with Spies" does not "teach or suggest 'determining, by the packet-filtering system and based on a portion of the unencrypted data corresponding to one or more network-threat indicators of the plurality of network-threat indicators, packets comprising the encrypted data that

34

IPR2022-00182
Patent 9,917,856 B2

corresponds to the one or more network-threat indicators'" as "recited in amended independent claim 1." Ex. 1002, 1366. Further, Patent Owner argued that Sorensen "also fails to teach or suggest encrypted data that corresponds to the one or more network-threat indicators." *Id.*

In December 2017, Patent Owner's attorney interviewed the Examiner. Ex. 1002, 1391. During the interview, the Examiner "confirmed authorization from Attorney of record . . . to implement Examiner's Amendment based on Applicant's proposed examiner's amendment submitted by email on 12/06/2017." *Id.*; *see id.* at 1379. The record in this proceeding does not include the email with the proposed amendment.

About two weeks later in December 2017, the Examiner amended claim 1 to, among other things, require (1) "at least one of the one or more network-threat indicators comprise a domain name identified as a network threat"; (2) "filtering . . . based on at least one of" (i) "a uniform resource identifier (URI) specified by the plurality of packet-filtering rules," (ii) "data indicating a protocol version specified by the plurality of packet-filtering rules," (iii) "data indicating a method specified by the plurality of packet-filtering rules," (iv) "data indicating a request specified by the plurality of packet-filtering rules," or (v) "data indicating a command specified by the plurality of packet-filtering rules"; and (3) "routing . . . filtered packets to a proxy system based on a determination that the filtered packets comprise data that corresponds to the one or more network-threat indicators." Ex. 1002, 1379–81. The Examiner similarly amended claims 24 and 25. *Id.* at 1384–86.

After amending claims 1, 24, and 25, the Examiner allowed the claims. Ex. 1002, 1378–79, 1386–89. In a statement of reasons for

35

IPR2022-00182
Patent 9,917,856 B2

allowance, the Examiner said, "Newly amended independent claim 1 is allowed in view of the (examiner's) amendment and for reasons argued" in the October 2017 amendment. *Id.* at 1388 (citing *id.* at 1364–67). The Examiner also said, "Independent claims 24 and 25 recite similar limitations to those found in claim 1" and "are considered to be allowable for the same reasons as discussed with claim 1." *Id.* at 1389. The Examiner explained that an "additional search does not yield other specific references that reasonably, either singularly or in combination with cited references, would result a proper rejection that would have anticipated or made obvious all the steps disclosed in the independent claims 1, 24 and 25 with proper motivation" to combine the references. *Id.*

In December 2017, the Examiner initialed as considered the documents listed in the July 2017 information-disclosure statement. Ex. 1002, 1393–1400. The initialed documents include the International Search Report for a foreign counterpart to the '638 application and Martini. *Id.* at 1395, 1398. The Examiner did not rely on Martini to reject any claims. *See, e.g.*, *id.* at 1062–85, 1378–92.

In January 2018, Patent Owner amended claims 1, 24, and 25 after allowance to make minor changes, e.g., to revise the language "at least one of the one or more network-threat indicators comprise a domain name identified as a network threat" to read "at least one of the plurality of network-threat indicators comprises a domain name identified as a network threat." Ex. 1002, 1414, 1420–22. Patent Owner amended claim 25 to require that the URI specified by the packet-filtering rules "indicat[e] one or more of the plurality of network-threat indicators" but did not similarly amend claims 1 and 24. *Id.* at 1414, 1420–22.

36

Appx061

IPR2022-00182
Patent 9,917,856 B2

In March 2018, the '856 patent issued. Ex. 1001, code (45).

3. PATENT OWNER'S CONTENTIONS

Patent Owner contends that during the '856 patent's prosecution the Examiner considered Martini and that Buruganahalli is "in all relevant aspects" the "same as" Martini. Prelim. Resp. 25 (citing Ex. 1002, 1398). Specifically, Patent Owner asserts that Buruganahalli discloses a firewall implemented as a gateway that has "the ability to create a secure connection." *Id.* at 26 (citing Ex. 1004, 1:28–31, 2:55–60, 5:24–35, 10:39–46, 15:11–13). Patent Owner asserts that Buruganahalli's firewall:

(1)   permits communications between a client and a remote server "with no filtering" if the destination domain is on a "whitelist";

(2)   decrypts encrypted communications between a client and a remote server if the destination domain is on a "blacklist"; and

(3)   "uses 'man-in-the-middle decryption techniques' to monitor the encrypted communications" such that the firewall "can present itself as server of the session to the client and can present itself as the client of the session to the server."

Id. (citing Ex. 1004, 6:22–39, 7:52–59, 8:36–38, 8:48–50, 12:59–61, 15:35–37).

Further, Patent Owner asserts that "[l]ike Buruganahalli, Martini describes a gateway that has the ability to create a secure connection." Prelim. Resp. 27 (citing Ex. 2005 ¶¶ 20, 24, Fig. 1). Patent Owner asserts that Martini describes (1) "comparing the extracted domain name to a policy and/or list of domain names" and (2) "determining whether to decrypt and monitor based on whether a domain name is specified for decryption and inspection." *Id.* at 27–28 (citing Ex. 2005 ¶¶ 24, 38). Patent Owner asserts

37

IPR2022-00182
Patent 9,917,856 B2

that Martini "further describes 'man in the middle' decryption that is just like the 'man-in-the-middle decryption techniques' of Buruganahalli." *Id.* at 28 (citing Ex. 2005 ¶ 25).

According to Patent Owner, "Buruganahalli is substantially similar to art already presented to the Office" given Buruganahalli's "identity to Martini on all relevant points." Prelim. Resp. 29; *see id.* at 39.

Additionally, Patent Owner contends that the Examiner applied Spies "to reject claims during prosecution" and that Buruganahalli is "cumulative" to Spies. Prelim. Resp. 29 (citing Ex. 1002, 1069–81; Ex. 2001); *see id.* at 31. Specifically, Patent Owner asserts that "[l]ike Buruganahalli, Spies describes a firewall that filters IP packets based on port and destination address information, communications that include encrypted data, decryption of the encrypted data from those communications, and inspection of that data after it has been decrypted." *Id.* (emphasis omitted) (citing Ex. 2001 ¶¶ 84, 94, 130–131, 147, 160–161).

Regarding patentability, Patent Owner contends that Buruganahalli and the references considered by the Examiner fail to teach "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators" as required by limitation [1.g] and the similar limitations in claims 24 and 25. Prelim. Resp. 3–4, 31–32, 39; *see id.* at 46–54.

4. PETITIONER'S CONTENTIONS

Petitioner contends that during prosecution Patent Owner argued "that the cited reference (Spies) taught filtering only 'a scanned and unencrypted version of a message' and performing 'processing operations such as virus scanning, spam filtering, notifications, archiving, or security policy

38

Appx063

IPR2022-00182
Patent 9,917,856 B2

enforcement' on the decrypted message." Pet. 9 (quoting Ex. 1002, 1365). Petitioner contends that Patent Owner also argued "that Spies 'does not discuss any determination regarding any encrypted data based on any unencrypted data corresponding to one or more network-threat indicators.'" *Id.* (quoting Ex. 1002, 1365).

Further, Petitioner asserts that, unlike Spies, Buruganahalli "discloses a packet-filtering system that determines that packets with unencrypted data (e.g., in a session-initiating handshake message) correspond to a network-threat indicator, and further determines that subsequent packets with encrypted data also correspond to that network-threat indicator based on unencrypted data." Pet. 9–10 (emphasis omitted). Petitioner asserts that Buruganahalli "further discloses network-threat indicators comprising a domain name that Applicant also argued to be missing in prior art." *Id.* at 10.

5. ANALYSIS

As explained below, we have analyzed the *Becton* factors in view of the *Advanced Bionics* framework and the record before us, and we determine that, on balance, the factors do not favor denying an *inter partes* review.

(a)   The First Part of the *Advanced Bionics* Framework

Under the *Advanced Bionics* framework, we initially consider *Becton* factors (a), (b), and (d) in determining "whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office." *Advanced Bionics*, IPR2019-01469, Paper 6 at 8, 10. *Becton* factors (a) and (b) "broadly provide guidance as to whether the art presented in the petition is the 'same or substantially the same' as the prior art previously

39

Appx064

IPR2022-00182
Patent 9,917,856 B2

presented to the Office during *any* proceeding." *Id.* at 10 (emphasis in the original). "Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant," e.g., with an information-disclosure statement. *Id.* at 7–8.

>   (i)   The Same or Substantially the Same Art

For "the same or substantially the same art" inquiry under the *Advanced Bionics* framework, we disagree with Patent Owner that Buruganahalli is "in all relevant aspects" the "same as" Martini and "cumulative" to Spies. *See* Prelim. Resp. 25, 29. Buruganahalli is closer and more pertinent prior art than Martini or Spies because, for the reasons explained below, Petitioner establishes persuasively on the current record that Buruganahalli teaches "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators" as required by limitation [1.g] and the similar limitations in claims 24 and 25. *See infra* § IV.D.2(h); Ex. 1003 ¶¶ 120, 134–135; Ex. 1004, 8:55–60, 11:47–51, 14:21–33, 14:50–55; Pet. 38–39; Prelim. Resp. 3–4, 32, 39.

Specifically, Buruganahalli discloses that when a client attempts to access a remote server "using an encrypted session protocol," a security device intercepts "the initial unencrypted/clear text data communications," e.g., a TLS hello message, "exchanged as part of an initial handshake to setup a secure connection for a new session." Ex. 1004, 4:37–40, 5:27–42, 14:21–25, 15:7–11, Figs. 6–7; *see id.* at 4:59–61, 6:39–41, 7:19–25, 11:24–51, code (57); Ex. 1003 ¶¶ 103, 111–113. The security device processes the unencrypted data communications to "extract a hostname" that identifies the destination domain the client wants to connect with. Ex. 1004,

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<div align="center">**Appx065**</div>

IPR2022-00182
Patent 9,917,856 B2

5:6–10, 9:50–57, 11:47–51, 14:21–25, 14:28–31, 14:50–55, 15:11–18,

code (57), Fig. 7; *see* Ex. 1003 ¶¶ 91, 111–112.

Based on the extracted hostname (destination domain), the security

device "identifies the packets as being part of a new session and creates a

new session flow." Ex. 1004, 5:7, 5:35–36, 14:25–33; *see* Ex. 1003 ¶¶ 111,

115, 133. Then, the security device inspects the session traffic including

"encrypted data communications associated with the session" and identifies

packets "as belonging to the session based on a flow lookup." Ex. 1004,

8:55–60, 14:26–28; *see* Ex. 1003 ¶¶ 111, 115. The security device uses the

extracted hostname (destination domain) to "apply firewall policies or take

responsive actions." Ex. 1004, 5:35–42; *see id.* at 7:39–67, 16:26–48;

Ex. 1003 ¶ 108.

By inspecting the session traffic including "encrypted data

communications associated with the session" and identifying packets

"as belonging to the session based on a flow lookup," the security device

"filter[s] . . . the determined packets comprising the encrypted data that

corresponds to the one or more network-threat indicators" according to

limitation [1.g] and the similar limitations in claims 24 and 25. *See* Ex. 1003

¶¶ 120, 135; Ex. 1004, 8:55–60, 11:47–51, 14:21–33, 14:50–55.

Buruganahalli explains that by "parsing the handshake traffic," e.g.,

"parsing a client hello message to extract a hostname that identifies the

destination domain," the security device may "apply one or more firewall

policies/rules . . . related to destination domains" without "having to

decrypt" encrypted communications. Ex. 1004, 11:7–19; *see id.* at 5:24–27,

5:35–42, 7:1–9; Ex. 1003 ¶¶ 94, 108, 113. Like Buruganahalli, the

'856 patent discloses using the handshake traffic to identify destination

41

Appx066

IPR2022-00182
Patent 9,917,856 B2

domains corresponding to network-threat indicators. Ex. 1001, 9:28–33,
24:22–30; *see* Ex. 1003 ¶ 121.

In contrast to Buruganahalli, Martini discloses decrypting encrypted
communications and then inspecting and filtering the decrypted
communications. *See* Ex. 2005 ¶¶ 21, 24–28, 37–38; Prelim. Resp. 39
(stating that "during prosecution" the Examiner considered "art that requires
decrypting encrypted packets to detect threats"). Specifically, Martini
explains that a network gateway intercepts a plaintext domain name service
(DNS) request from a client, e.g., a browser device. Ex. 2005 ¶¶ 20–21, 24,
37–38. For traffic that will remain unencrypted, the network gateway
inspects "the plaintext messages and, optionally, modif[ies] or drop[s] a
message," e.g., a message that matches "viral signatures, malware black-
lists, etc." *Id.* ¶¶ 27–28. For traffic that will become encrypted, however,
the network gateway responds to the client "with the address or addresses
of one or more man in the middle (MitM) gateways." *Id.* ¶¶ 21, 24, 40.

After a client receives the address of an MitM gateway, the client
initializes a cryptographic connection with the MitM gateway. Ex. 2005
¶ 25. Then, the MitM gateway initializes a cryptographic connection with
the server hosting the resource sought by the client. *Id.* After the
cryptographic connections have been established, the MitM gateway
(1) receives an encrypted message from the client; (2) decrypts the message;
(3) inspects the decrypted message; (4) optionally alters or drops the
decrypted message; (5) encrypts the possibly altered message into a second
encrypted form; and (6) passes the encrypted message to the server. *Id.*
¶ 26. The MitM gateway performs "the same type of reception, decryption,

42

Appx067

IPR2022-00182
Patent 9,917,856 B2

inspection, alteration or drop, encryption, and passage" for messages from the server to the client. *Id.*

Hence, we agree with Patent Owner that Martini fails to teach "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators" as required by limitation [1.g] and the similar limitations in claims 24 and 25. *See* Prelim. Resp. 32; *see also id.* at 39. Spies also fails to teach those limitations.

Like Martini, Spies discloses decrypting encrypted communications and then inspecting and filtering the decrypted communications. *See, e.g.*, Ex. 2001 ¶¶ 10–16, 56, 84, 94, 130–131, 147, 156–164, code (57), Fig. 12; Prelim. Resp. 29. Specifically, Spies discloses systems and methods for managing email encrypted "using identity-based-encryption (IBE) techniques." Ex. 2001 ¶¶ 10–13, code (57). To manage email encrypted using IBE techniques, a gateway may connect an organization's internal network to an external network. *Id.* ¶ 14; *see id.* ¶ 84. An IBE-private-key generator on the internal network may "provide IBE private keys to the gateway." *Id.* ¶ 14; *see id.* ¶ 56. When the gateway receives an IBE-encrypted message, the gateway may "request an appropriate IBE private key" from the IBE-private-key generator. *Id.* ¶ 15, code (57). Message processing applications on the gateway may "use an IBE decryption engine and the IBE private key to decrypt the IBE-encrypted message." *Id.* ¶ 16, code (57); *see id.* ¶¶ 56, 94, 130, 160, Fig. 12. After decrypting the IBE-encrypted message, the applications may "process the unencrypted version of the message," e.g., "for virus scanning, spam blocking, policy enforcement, etc.," and then "provide the processed version of the message

43

Appx068

IPR2022-00182
Patent 9,917,856 B2

to an appropriate recipient within the organization." *Id.* ¶ 16, code (57); *see id.* ¶¶ 94, 130–131, 147, 161, Fig. 12.

For the reasons discussed above and in our patentability analysis below, Buruganahalli is closer and more pertinent prior art than the references Patent Owner identifies as the closest prior art considered by the Examiner, i.e., Martini and Spies. *See* Prelim. Resp. 25, 29–30; *infra* §§ IV.D.2(a)–(i). The International Search Report cited during the '856 patent's prosecution does not suggest otherwise. The International Search Report mapped Martini's disclosures to the limitations in a claim identical to claim 1 in the '638 application as filed. *See* Ex. 1002, 43, 1346–47. After submitting the International Search Report and Martini to the Office, Patent Owner amended claim 1 to, among other things, require "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators." *Id.* at 1127–34, 1338–50, 1352. Patent Owner similarly amended claims 24 and 25. *Id.* at 1359–61. Hence, the International Search Report does not indicate how, if at all, Martini's disclosures relate to the limitations added by amendment to claims 1, 24, and 25.

Because Buruganahalli is closer and more pertinent prior art than the references Patent Owner identifies as the closest prior art considered by the Examiner, "the same or substantially the same art" was not previously considered by the Examiner under the *Advanced Bionics* framework.

(ii)   The Same or Substantially the Same Arguments

For "the same or substantially the same arguments" inquiry under the *Advanced Bionics* framework, the arguments about Spies and Sorensen during prosecution do not resemble the arguments about Buruganahalli and

44

Appx069

IPR2022-00182
Patent 9,917,856 B2

Baehr here. *See, e.g.*, Pet. 28–50; Ex. 1002, 1365–66. During prosecution, the arguments about Spies and Sorensen centered on whether the references teach "determining . . . packets comprising encrypted data that corresponds to the one or more network-threat indicators." *See* Ex. 1002, 1365–66; Pet. 9 (citing Ex. 1002, 1365); Prelim. Resp. 11–12 (citing Ex. 1002, 1365–66). Here, the arguments about Buruganahalli and Baehr center on whether the references teach "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators." *See* Pet. 38–39; Prelim. Resp. 3–4, 21, 32, 45–52. At this stage of the proceeding, Patent Owner does not dispute that Buruganahalli teaches "determining . . . packets comprising encrypted data that corresponds to the one or more network-threat indicators." *See* Prelim. Resp. 45–52; *infra* § IV.D.2(e).

(b)   The Second Part of the *Advanced Bionics* Framework

Because neither condition of the first part of the *Advanced Bionics* framework is satisfied, we do not reach the second part of the framework. *See Advanced Bionics*, Paper 6 at 8.

6. CONCLUSION CONCERNING DENIAL UNDER § 325(d)

After analyzing the *Becton* factors in view of the *Advanced Bionics* framework and the record before us, we determine that, on balance, the factors do not favor denying an *inter partes* review. Hence, we decline to exercise our discretion under § 325(d) to deny institution.

IV. PATENTABILITY ANALYSIS

A. *Legal Principles: Obviousness*

A patent may not be obtained "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole

45

Appx070

IPR2022-00182
Patent 9,917,856 B2

would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103. An obviousness analysis involves underlying factual inquiries including (1) the scope and content of the prior art; (2) differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) where in evidence, objective indicia of nonobviousness, such as commercial success, long-felt but unsolved need, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 35–36 (1966); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48 (Fed. Cir. 2016) (en banc). When evaluating a combination of references, an obviousness analysis should address "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

We analyze the obviousness issues according to these principles.

B. Level of Ordinary Skill in the Art

Factors pertinent to determining the level of ordinary skill in the art include (1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) prior-art solutions to those problems; (4) the rapidity with which innovations are made; (5) the sophistication of the technology; and (6) the educational level of workers active in the field. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–97 (Fed. Cir. 1983). Not all factors may exist in every case, and one or more of these or other factors may predominate in a particular case. *Id.* These factors are not exhaustive, but merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir.

46

Appx071

IPR2022-00182
Patent 9,917,856 B2

2007). Moreover, the prior art itself may reflect an appropriate skill level. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Petitioner asserts that a person of ordinary skill in the art "would have had a bachelor's degree in computer science, computer engineering, or an equivalent, and four years of professional experience." Pet. 16. Petitioner also asserts that "[l]ack of work experience could be remedied by additional education, and vice versa." *Id.* Dr. Weissman's testimony supports Petitioner's assertions. *See* Ex. 1003 ¶¶ 29–30.

At this stage of the proceeding, Patent Owner "has applied" Petitioner's description of an ordinarily skilled artisan "without conceding it is correct." Prelim. Resp. 24.

Based on the current record and for purposes of institution, we accept Petitioner's description of an ordinarily skilled artisan as consistent with the '856 patent and the asserted prior art.

C. Claim Construction

Because Petitioner filed the Petition after November 13, 2018, we construe claim terms "using the same claim construction standard" that district courts use to construe claim terms in civil actions under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b). Under that standard, claim terms "are given their ordinary and customary meaning, which is the meaning the term would have to a person of ordinary skill in the art at the time of the invention." *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 904 F.3d 965, 971 (Fed. Cir. 2018) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc)). The meaning of claim terms may be determined by "look[ing] principally to the intrinsic evidence of record, examining the claim language itself, the written description, and

47

IPR2022-00182
Patent 9,917,856 B2

the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner proposes a construction for one claim term, i.e., "network-threat indicators." Pet. 17.

Patent Owner does not propose a construction for any claim term. *See* Prelim. Resp. 4–23, 45–52.

Based on the current record, we determine that no claim term requires an explicit construction to decide whether Petitioner satisfies the "reasonable likelihood" standard for instituting trial. "[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *see Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

D. *Alleged Obviousness over Buruganahalli: Claims 1, 24, and 25*

Petitioner contends that claims 1, 24, and 25 are unpatentable under § 103 as obvious over Buruganahalli. *See* Pet. 8, 18–42. Below, we provide an overview of Buruganahalli, and then we consider the obviousness issues. As explained below, Patent Owner primarily disputes that Buruganahalli teaches one limitation in each claim, i.e., limitation [1.g] and the similar limitations in claims 24 and 25. As also explained below, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches the subject matter of each claim.

1. OVERVIEW OF BURUGANAHALLI (EXHIBIT 1004)

Buruganahalli is a U.S. patent titled "Destination Domain Extraction for Secure Protocols," issued on June 13, 2017, from an application filed on

48

IPR2022-00182
Patent 9,917,856 B2

June 30, 2016, as a continuation of an application filed on July 25, 2013.

Ex. 1004, codes (22), (45), (54), (63). Buruganahalli discloses "techniques

for destination domain extraction for secure protocols," e.g., "secure sockets

layer (SSL), transport layer security (TLS), and/or other secure protocols."

Id. at 4:47–50.

Buruganahalli's Figure 1 (reproduced below) depicts the architecture

of a security device for implementing destination domain extraction for
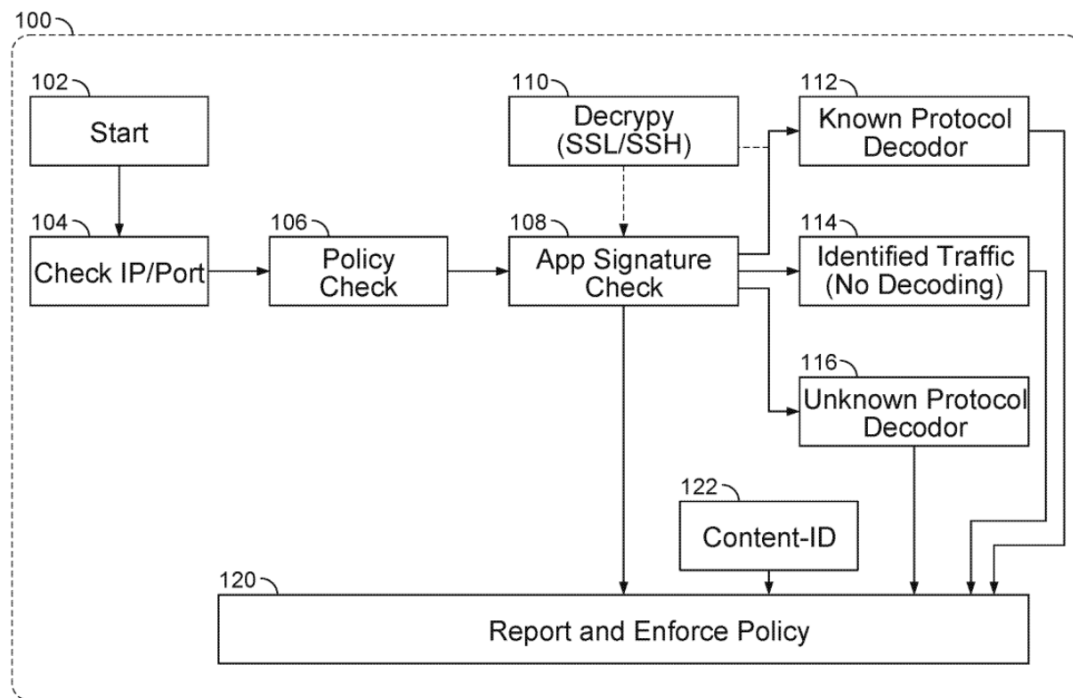
secure protocols:

FIG. 1

Figure 1 illustrates security device or firewall 100 with the following

components:

(1)   "IP address and port engine 104" that "determines an IP
       address and port number for a monitored traffic flow
       (e.g., a session) based on packet analysis";

49

Appx074

IPR2022-00182
Patent 9,917,856 B2

(2)   "policy check engine 106" that "determines whether any policies can be applied based on the IP address and port number";

(3)   "application signature check engine 108" that (a) "identifies an application," e.g., by "using various application signatures," and (b) "determine[s] what type of traffic the session involves, such as HTTP traffic, HTTPS traffic, SSL/TLS traffic, SSH traffic, DNS requests, FTP traffic, unknown traffic, and various other types of traffic";

(4)   "known protocol decoder engine 112" that (a) "decodes and analyzes traffic flows using known protocols," e.g., by "applying various signatures for the known protocol," and (b) "provide[s] destination domain extraction for such secure protocols," e.g., by "parsing a client hello message to extract a hostname that identifies the destination domain being requested by the client to the remote server";

(5)   "[i]dentified traffic (no decoding required) engine 114" that "reports the identified traffic";

(6)   "unknown protocol decoder engine 116" that (a) "decodes and analyzes traffic flows," e.g., by "applying various heuristics," and (b) "reports the monitored traffic analysis";

(7)   "report and enforce policy engine 120" that receives information, e.g., from identified traffic engine 114 and unknown protocol decoder engine 116; and

(8)   "content-ID engine 122" that provides to report and enforce policy engine 120 "URL/category filtering, possibly in various combinations with other information, such as application, user, and/or other information, to enforce various security/firewall policies/rules."

Ex. 1004, 9:26–60, 10:21–28, Fig. 1; *see id.* at 4:33–44, 5:37–40, 11:7–12, 11:47–51, 14:28–33, 14:50–55.

50

IPR2022-00182
Patent 9,917,856 B2

Buruganahalli discloses that a security device may apply "a policy (e.g., a security policy) based on the destination domain" to filter inbound traffic or outbound traffic (or both). Ex. 1004, 1:33–38, 2:62–3:4, 7:25–29, code (57); *see id.* at 5:35–51, 7:8–9, 7:35–42, 7:51–67, 14:28–33, 14:61–63. The security policy may include (1) "a malware detection policy," (2) "a whitelist/blacklist policy," and/or (3) "a uniform resource locator (URL)/ category filtering policy." *Id.* at 7:42–51, 16:26–48; *see id.* at 7:52–67, 10:21–28.

Buruganahalli discloses that when a client attempts to access a remote server "using an encrypted session protocol," a security device intercepts "the initial unencrypted/clear text data communications," e.g., a TLS hello message, "exchanged as part of an initial handshake to setup a secure connection for a new session." Ex. 1004, 4:37–40, 5:27–42, 14:21–25, 15:7–11, Figs. 6–7; *see id.* at 4:59–61, 6:39–41, 7:19–25, 11:24–51, code (57). The security device processes the unencrypted data communications to "extract a hostname" that identifies the destination domain the client wants to connect with. *Id.* at 5:6–10, 9:50–57, 11:47–51, 14:21–25, 14:28–31, 14:50–55, 15:11–18, code (57), Fig. 7.

Based on the extracted hostname (destination domain), the security device "identifies the packets as being part of a new session and creates a new session flow." Ex. 1004, 5:7, 5:35–36, 14:25–33. Then, the security device inspects the session traffic including "encrypted data communications associated with the session" and identifies packets "as belonging to the session based on a flow lookup." *Id.* at 8:55–60, 14:26–28. The security device uses the extracted hostname (destination domain) to "apply firewall

51

Appx076

IPR2022-00182
Patent 9,917,856 B2

policies or take responsive actions." *Id.* at 5:35–42; *see id.* at 7:39–67, 16:26–48.

Buruganahalli's Figure 3A (reproduced below) depicts a functional block diagram of a firewall for implementing destination domain extraction for secure protocols:
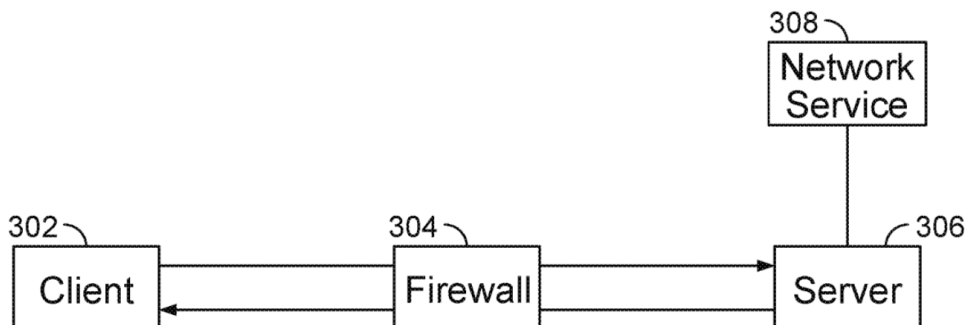

FIG. 3A

Figure 3A shows client 302, firewall 304, remote server 306, and network service 308 with "an SSL/TLS session passing through" firewall 304. Ex. 1004, 1:53–56, 10:54–57, 10:61–11:2, Fig. 3A. "As shown, a client 302 establishes a secure tunnel session (e.g., creates an SSL tunnel) with a remote server 306." *Id.* at 10:61–63, Fig. 3A. "The client 302 can use the secure tunnel with the server 306 to access a network service 308, which can be a network service activity that is in violation of one or more firewall policies/rules implemented by the firewall device 304," e.g., "a policy that includes requirements or rules related to destination domains that may be used for secure protocol communications." *Id.* at 10:63–11:2.

According to Buruganahalli, "the secure tunnel session traffic is encrypted," and "the firewall 304 typically cannot decrypt the encrypted secure tunnel session traffic and, thus, cannot detect such firewall policy/rule violation(s)." Ex. 1004, 11:2–6. To address that deficiency, Buruganahalli

52

Appx077

IPR2022-00182
Patent 9,917,856 B2

discloses "various techniques" for "destination domain extraction for secure protocols" that permit a security device to "apply one or more firewall policies/rules . . . related to destination domains" without "having to decrypt" encrypted communications. *Id.* at 11:7–19; *see id.* at 5:24–27, 5:35–42, 7:1–9, 11:20–58.

In particular, Buruganahalli explains that the server name indication (SNI) extension to the TLS protocol "indicates what hostname (e.g., destination domain)" a client wants to connect with "at the start of the handshaking process for setting a secure TLS communication channel/ session between a client and a remote server." Ex. 1004, 4:64–5:1, 5:6–10. Buruganahalli discloses using the SNI extension "to facilitate destination domain extraction for secure protocols without requiring decryption." *Id.* at 5:24–27; *see id.* at 11:24–28.

For instance, a security device may "intercept and monitor data communications from a client and a remote server in order to extract the hostname data" from the "server name field of the SNI extension" in "an unencrypted data communication" from the client to the remote server "at the start of the handshaking process for setting up a secure TLS communication channel/session." Ex. 1004, 5:27–35; *see id.* at 11:30–51. The security device may use the "extracted hostname data (e.g., destination domain)" to "apply firewall policies or take responsive actions based on this information without having to wait for data to be decrypted." *Id.* at 5:35–42; *see id.* at 11:47–51. Avoiding decryption "result[s] in less state to track thereby enhancing performance (e.g., of the security device, such as a firewall)." *Id.* at 5:43–51.

<center>53</center>

IPR2022-00182
Patent 9,917,856 B2

Buruganahalli's Figure 3B (reproduced below) depicts another functional block diagram of a firewall for implementing destination domain extraction for secure protocols:
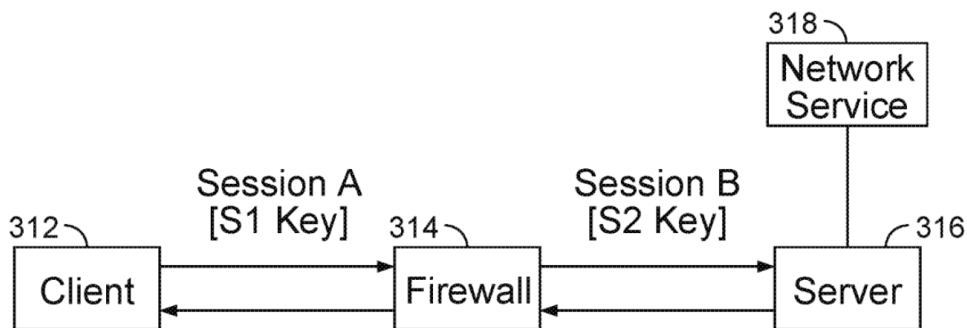

FIG. 3B

Figure 3B shows client 312, firewall 314, remote server 316, and network service 318 with Session A between client 312 and firewall 314 and Session B between firewall 314 and server 316. Ex. 1004, 12:4–28, Fig. 3B; *see id.* at 1:57–59. "As shown, a client 312 attempts to establish an SSL session with a remote server 316" and "can attempt to use, for example, a secure tunnel with the server 316 to access a network service 318, which can be a network service activity that is in violation of one or more firewall policies/rules implemented by a firewall device 314." *Id.* at 12:6–12, Fig. 3B.

In contrast to Figure 3A's embodiment, in Figure 3B's embodiment "the SSL session request is intercepted and detected by the firewall 314." Ex. 1004, 12:12–14, Fig. 3B. Specifically, "the firewall 314 performs a trusted man-in-the-middle technique by effectively splitting the SSL session between the client 312 and the remote server 316 into two half sessions shown as Session A and Session B in" Figure 3B. *Id.* at 12:14–18, Fig. 3B. In Session A, "the firewall 314 acts as the remote server 316 such that it is

54

Appx079

IPR2022-00182
Patent 9,917,856 B2

transparent to the client 312" and encrypts Session A traffic "using the session key S1." *Id.* at 12:18–22. In Session B, "the firewall 314 acts as the client 312 such that it is transparent to the remote server 316" and encrypts Session B traffic "using the session key S2." *Id.* at 12:22–28.

After "the session set-up handshaking is completed for each of Session A and Session B, any data that is communicated from the client 312 to the firewall 314 is decrypted using a session key S1 and is then inspected by the firewall 314," e.g., "to monitor the session traffic for firewall policy/ rule compliance." Ex. 1004, 12:29–32, 12:42–44. If "the traffic is determined to be authorized SSL remote-access traffic, the firewall 314 encrypts the tunneled traffic using a session key S2 and forwards the encrypted traffic to the remote server 316." *Id.* at 12:48–51. Similarly, "traffic coming from the server is decrypted with the session key S2, inspected by the firewall 314, and then encrypted using the session key S1 and forwarded to the client 312." *Id.* at 12:52–55.

Buruganahalli discloses using "decryption techniques" according to Figure 3B's embodiment "in addition to and/or in combination with the various techniques described herein for destination domain extraction for secure protocols," e.g., techniques according to Figure 3A's embodiment. Ex. 1004, 11:59–12:3; *see id.* at 11:7–58.

2. INDEPENDENT CLAIM 1

(a)   <u>Preamble [1.pre]</u>

Claim 1's preamble recites "[a] method." Ex. 1001, 25:14.

Petitioner contends that Buruganahalli teaches claim 1's preamble because Buruganahalli "discloses a method for filtering packets in

55

IPR2022-00182
Patent 9,917,856 B2

communications between a client and a remote server." Pet. 28 (citing Ex. 1004, 4:31–40).

Patent Owner makes no arguments specific to claim 1's preamble. *See, e.g.*, Prelim. Resp. 45–52. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

Generally, a preamble does not limit a claim. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). We need not decide whether claim 1's preamble limits the claim because Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches claim 1's preamble. *See* Pet. 28; Ex. 1003 ¶¶ 101–104. As Petitioner contends, Buruganahalli "discloses a method for filtering packets in communications between a client and a remote server." Ex. 1004, 4:31–44, 7:12–8:10, 9:4–10:9, code (57), Fig. 1; *see* Ex. 1003 ¶ 103; Pet. 28.

(b)   Limitation [1.a]

Claim 1 recites "receiving, by a packet-filtering system comprising a hardware processor and a memory and configured to filter packets in accordance with a plurality of packet-filtering rules, data indicating a plurality of network-threat indicators, wherein at least one of the plurality of network-threat indicators comprises a domain name identified as a network threat." Ex. 1001, 25:15–21.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli "discloses that its method is implemented using a 'security device' such as a 'packet-filtering firewall' comprising 'a processor configured to execute instructions stored on and/or provided by a memory coupled to the processor.'" Pet. 29 (quoting Ex. 1004, 2:18–19, 3:16–20).

56

IPR2022-00182
Patent 9,917,856 B2

Petitioner also contends that Buruganahalli discloses that packet-filtering firewalls were known to perform the following actions:

(1)   "deny or permit network transmission based on a set of rules" often referred to as "policies (e.g., network policies or network security policies)";

(2)   filter "inbound traffic by applying a set of rules or policies to prevent unwanted outside traffic from reaching protected devices"; and

(3)   filter "outbound traffic by applying a set of rules or policies."

Id. (citing Ex. 1003 ¶ 107; Ex. 1004, 1:32–36, 2:55–66, 14:58–60).

Further, Petitioner asserts that Buruganahalli discloses extracting from a packet a destination domain that "can then be used to apply firewall policies or take responsive actions." Pet. 29–30 (citing Ex. 1004, 5:35–43, 14:60–67). Petitioner also asserts that Buruganahalli discloses listing certain destination domains "in a 'blacklist policy' that is part of the 'security policy.'" *Id.* at 30 (citing Ex. 1004, 7:42–67).

Patent Owner makes no arguments specific to limitation [1.a]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.a]. *See* Pet. 29–30; Ex. 1003 ¶¶ 105–109. As Petitioner asserts, Buruganahalli "discloses that its method is implemented using a 'security device' such as a 'packet-filtering firewall' comprising 'a processor configured to execute instructions stored on and/or provided by a memory coupled to the processor.'" Ex. 1004, 2:18–19, 3:16–20; *see* Ex. 1003 ¶ 106; Pet. 29.

Buruganahalli also discloses using the security device "for destination domain extraction for secure protocols." Ex. 1004, 1:46–48, 9:4–6, Fig. 1;

57

Appx082

IPR2022-00182
Patent 9,917,856 B2

see Ex. 1003 ¶ 93. Specifically, the security device monitors network traffic by "inspecting individual packets," for example "using pass through (e.g., in line) monitoring techniques." Ex. 1004, 3:16–18, 9:6–15, Fig. 1; *see id.* at 3:20–21, 3:40–44, 9:25–28, 9:32–36, 14:22–28; Ex. 1003 ¶ 93.

To monitor network traffic, the security device may include the following components:

(1) "IP address and port engine 104" that "determines an IP address and port number for a monitored traffic flow (e.g., a session) based on packet analysis";

(2) "policy check engine 106" that "determines whether any policies can be applied based on the IP address and port number";

(3) "application signature check engine 108" that (a) "identifies an application," e.g., by "using various application signatures," and (b) "determine[s] what type of traffic the session involves, such as HTTP traffic, HTTPS traffic, SSL/TLS traffic, SSH traffic, DNS requests, FTP traffic, unknown traffic, and various other types of traffic";

(4) "known protocol decoder engine 112" that (a) "decodes and analyzes traffic flows using known protocols," e.g., by "applying various signatures for the known protocol," and (b) "provide[s] destination domain extraction for such secure protocols," e.g., by "parsing a client hello message to extract a hostname that identifies the destination domain being requested by the client to the remote server";

(5) "[i]dentified traffic (no decoding required) engine 114" that "reports the identified traffic";

(6) "unknown protocol decoder engine 116" that (a) "decodes and analyzes traffic flows," e.g., by "applying various heuristics," and (b) "reports the monitored traffic analysis";

58

Appx083

IPR2022-00182
Patent 9,917,856 B2

(7)   "report and enforce policy engine 120" that receives information, e.g., from identified traffic engine 114 and unknown protocol decoder engine 116; and

(8)   "content-ID engine 122" that provides to report and enforce policy engine 120 "URL/category filtering, possibly in various combinations with other information, such as application, user, and/or other information, to enforce various security/firewall policies/rules."

Ex. 1004, 9:26–60, 10:21–28, Fig. 1; *see id.* at 4:33–44, 5:37–40, 11:7–12, 11:47–51, 14:28–33, 14:50–55; *see* Ex. 1003 ¶ 119.

The security device may apply "a policy (e.g., a security policy) based on the destination domain" to filter inbound traffic or outbound traffic (or both). Ex. 1004, 1:33–38, 2:62–3:4, 7:25–29, code (57); *see id.* at 5:35–51, 7:8–9, 7:35–42, 7:51–67, 14:28–33, 14:61–63; Ex. 1003 ¶ 108. The security policy may include (1) "a malware detection policy," (2) "a whitelist/ blacklist policy," and/or (3) "a uniform resource locator (URL)/category filtering policy." Ex. 1004, 7:42–51, 16:26–48; *see id.* at 7:52–67, 10:21–28; Ex. 1003 ¶¶ 90, 109.

As an example, a security policy may specify that "the network communications between the client and the remote server are not decrypted if the destination domain is included in a whitelist of the whitelist/blacklist policy." Ex. 1004, 7:55–59, 16:36–42; *see id.* at 7:42–49; Ex. 1003 ¶ 90. As another example, a security policy may specify that "the network communications between the client and the remote server are decrypted if the destination domain is included in a blacklist of the whitelist/blacklist policy." Ex. 1004, 7:63–67, 16:43–48; *see id.* at 7:42–49; Ex. 1003 ¶ 90. As yet another example, a security policy may specify that the network communications with "an unknown site," e.g., a domain not included in a

59

IPR2022-00182
Patent 9,917,856 B2

whitelist or a blacklist of the whitelist/blacklist policy, may occur subject to further monitoring "to determine whether or not further action(s) should be performed." Ex. 1004, 6:22–38.

Additionally, the security device may report to a security cloud service the "detection of security policy violations and/or vulnerabilities based on destination domain extraction for secure protocols." Ex. 1004, 13:40–43; *see* Ex. 1003 ¶ 109. That reporting may "facilitate identification of new, zero-day threats, new vulnerabilities, prevent false positives, and/or provide a feedback loop for any of such activities or trends aggregated and correlated using the security cloud service." Ex. 1004, 13:43–51; *see* Ex. 1003 ¶ 109.

Thus, Buruganahalli "discloses packet-filtering rules (e.g., policies or rules) that are based on whether certain data (e.g., a destination domain) is identified as a network threat (e.g., by matching the data on a blacklist)." Ex. 1003 ¶ 109 (emphases omitted).

(c)   Limitation [1.b]

Claim 1 recites "identifying packets comprising unencrypted data." Ex. 1001, 25:22.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli's security device "identifies the packets as being part of a new session and creates a new session flow." Pet. 30–31 (citing Ex. 1004, 14:25–28). Petitioner contends that Buruganahalli "discloses 'monitor[ing] the initial unencrypted/clear text data communications exchanged as part of an initial handshake to setup a secure connection for a new session between a client and a remote server . . . .'" *Id.* at 31 (alterations by Petitioner) (quoting Ex. 1004, 4:37–40).

60

Appx085

IPR2022-00182
Patent 9,917,856 B2

Patent Owner makes no arguments specific to limitation [1.b]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.b]. *See* Pet. 30–31; Ex. 1003 ¶¶ 110–113. Specifically, Buruganahalli discloses that when a client attempts to access a remote server "using an encrypted session protocol," the security device intercepts "the initial unencrypted/clear text data communications," e.g., a TLS hello message, "exchanged as part of an initial handshake to setup a secure connection for a new session." Ex. 1004, 4:37–40, 5:27–42, 14:21–25, 15:7–11, Figs. 6–7; *see id.* at 4:59–61, 6:39–41, 7:19–25, 11:24–51, code (57); Ex. 1003 ¶¶ 103, 111–113.

The security device processes the unencrypted data communications to "extract a hostname" that identifies the destination domain the client wants to connect with. Ex. 1004, 5:6–10, 9:50–57, 11:47–51, 14:21–25, 14:28–31, 14:50–55, 15:11–18, code (57), Fig. 7; *see* Ex. 1003 ¶¶ 91, 111–112. For instance, the security device may analyze "an initial TLS handshake exchange" to "extract a hostname to facilitate destination domain extraction for secure protocols." Ex. 1004, 11:47–51, 14:28–31, 14:50–55, 15:13–18; *see id.* at 5:6–10, 11:24–47; Ex. 1003 ¶ 111. Based on the extracted hostname (destination domain), the security device "identifies the packets as being part of a new session and creates a new session flow." Ex. 1004, 5:7, 5:35–36, 14:25–33; *see* Ex. 1003 ¶ 111. Hence, the security device "identifies unencrypted packet data within the initial handshake" to "set up a new session." Ex. 1003 ¶ 113.

61

IPR2022-00182
Patent 9,917,856 B2

(d)   Limitation [1.c]

Claim 1 recites "identifying packets comprising encrypted data." Ex. 1001, 25:23.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli's security device "identifies the packets as being part of a new session and creates a new session flow" and "[s]ubsequent packets will be identified as belonging to the session based on a flow lookup." Pet. 32 (citing Ex. 1004, 14:25–28). Petitioner also contends that a session using a secure protocol involves "encrypted data communication" comprising data packets. *Id.* (citing Ex. 1004, 3:16–24, 3:40–50, 4:31–44, 5:43–52, 5:62–6:38, 8:11–44, 8:55–60, 9:25–30, 12:33–48).

Patent Owner makes no arguments specific to limitation [1.c]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.c]. *See* Pet. 32; Ex. 1003 ¶¶ 114–115. Specifically, Buruganahalli's security device "identifies the packets as being part of a new session and creates a new session flow" based on a hostname (destination domain) extracted from unencrypted data communications, e.g., the handshake traffic. Ex. 1004, 5:7, 5:35–36, 14:25–33; *see id.* at 4:37–40, 9:50–57, 11:24–51, 14:21–25; Ex. 1003 ¶¶ 111, 115. Then, the security device inspects the session traffic including "encrypted data communications associated with the session" and identifies packets "as belonging to the session based on a flow lookup." Ex. 1004, 8:55–60, 14:26–28; *see* Ex. 1003 ¶¶ 111, 115. Hence, the security device "identif[ies] data packets comprising encrypted data during set up of a new session, and during the session." Ex. 1003 ¶ 115.

62

IPR2022-00182
Patent 9,917,856 B2

(e)   Limitation [1.d]

Claim 1 recites "determining, by the packet-filtering system and based on a portion of the unencrypted data corresponding to one or more network-threat indicators of the plurality of network-threat indicators, packets comprising encrypted data that corresponds to the one or more network-threat indicators." Ex. 1001, 25:24–29.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli's security device (1) "determines an IP address and port number for a monitored traffic flow (e.g., a session) based on packet analysis" and (2) includes "a table that stores 'destination domains[] and associated IP addresses and possibly other information for clients and/or remote servers identified as external sites that are monitored for implementing policies using destination domain extraction for secure protocols.'" Pet. 33–34 (alteration by Petitioner) (quoting Ex. 1004, 9:26–28, 13:64–14:1). Petitioner contends that "IP addresses (*e.g.*, source, destination) and TCP session data associated with a packet were typically unencrypted and could be inspected without decrypting the packet information." *Id.* at 33.

Further, Petitioner asserts that unencrypted packets and encrypted packets "related to a session" are correlated "using at least address information associated with the destination domain" in "a hello message in TLS handshake traffic." Pet. 33–34 (citing Ex. 1003 ¶¶ 119–120; Ex. 1004, 9:25–28). According to Petitioner, unencrypted packets in "the hello message" and encrypted packets in "the encrypted session" would be "associated with the same destination IP address of the remote server." *Id.* at 34.

63

Appx088

IPR2022-00182
Patent 9,917,856 B2

Patent Owner makes no arguments specific to limitation [1.d]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.d]. *See* Pet. 32–34; Ex. 1003 ¶¶ 116–121. Specifically, Buruganahalli's security device "determines an IP address and port number for a monitored traffic flow (e.g., a session) based on packet analysis." Ex. 1004, 9:25–28, Fig. 1; *see* Ex. 1003 ¶ 119. The security device "stores tables that include host names/identifiers (e.g., destination domains) and associated IP addresses and possibly other information for clients and/or remote servers identified as external sites that are monitored for implementing policies using destination domain extraction for secure protocols." Ex. 1004, 13:62–14:1, Fig. 5; *see* Ex. 1003 ¶ 119.

An ordinarily skilled artisan would have understood that "IP addresses for source and destination associated with a packet, or other TCP session data, would be located in an unencrypted portion of a packet (e.g., a clear header) that can be inspected without decrypting the packet so that the packet can be routed using the IP addresses." Ex. 1003 ¶ 119 (emphasis omitted); *see id.* ¶¶ 64, 94; Ex. 1040 ¶ 36. Also, an ordinarily skilled artisan would have understood that unencrypted packets and encrypted packets "related to a session" are correlated "based on data included in the hello message (e.g., destination domain and associated IP address) configured to establish the encrypted session, because both the encrypted session and the hello message would be associated with the same destination IP address of the remote server." Ex. 1003 ¶ 120.

64

Appx089

IPR2022-00182
Patent 9,917,856 B2

(f)   <u>Limitation [1.e]</u>

Claim 1 recites as follows:

filtering, by the packet-filtering system and based on at least one of a uniform resource identifier (URI) specified by the plurality of packet-filtering rules, data indicating a protocol version specified by the plurality of packet-filtering rules, data indicating a method specified by the plurality of packet-filtering rules, data indicating a request specified by the plurality of packet-filtering rules, or data indicating a command specified by the plurality of packet-filtering rules.

Ex. 1001, 25:30–38.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli discloses filtering packets based on each of the following: (1) "a uniform resource identifier (URI) specified by the plurality of packet-filtering rules"; (2) "data indicating a protocol version specified by the plurality of packet-filtering rules"; and (3) "data indicating a request specified by the plurality of packet-filtering rules." *See* Pet. 34–37. For instance, Petitioner asserts that Buruganahalli's security device may filter packets based on "a uniform resource identifier (URI) specified by the plurality of packet-filtering rules" because the security device may use "a uniform resource locator (URL)/category filtering policy." *Id.* at 35 (citing Ex. 1004, 7:39–51, 10:21–28, 15:37–45). Petitioner also asserts that an ordinarily skilled artisan "would have understood, as was well-known and conventional, that URLs are examples of uniform resource identifiers." *Id.* (citing Ex. 1037, 12:25–27).

Patent Owner makes no arguments specific to limitation [1.e]. *See, e.g.*, Prelim. Resp. 45–52.

IPR2022-00182
Patent 9,917,856 B2

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.e]. *See* Pet. 34–37; Ex. 1003 ¶¶ 122–131. As Petitioner asserts, Buruganahalli's security device may filter packets based on "a uniform resource identifier (URI) specified by the plurality of packet-filtering rules" because the security device may use "a uniform resource locator (URL)/category filtering policy." Ex. 1004, 7:39–51, 10:21–28; *see* Ex. 1003 ¶¶ 125–127; Pet. 35. As Petitioner also asserts, an ordinarily skilled artisan "would have understood, as was well-known and conventional, that URLs are examples of uniform resource identifiers." *See* Ex. 1003 ¶ 127; Ex. 1037, 12:25–27; Pet. 35. Additionally, Buruganahalli discloses that the security device may "recognize a GET request in the received data." Ex. 1004, 14:40–43.

(g)   Limitation [1.f]

Claim 1 recites "filtering . . . packets comprising the portion of the unencrypted data that corresponds to one or more network-threat indicators of the plurality of network-threat indicators." Ex. 1001, 25:30, 25:39–41.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli discloses (1) "intercepting a request to establish an encrypted session from a client to a remote server" and (2) "filtering unencrypted packets in the initial handshake based on the determination of whether 'the destination domain is included in the blacklist.'" Pet. 37–38 (quoting Ex. 1004, 7:49–50).

Patent Owner makes no arguments specific to limitation [1.f]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.f]. *See*

66

Appx091

IPR2022-00182
Patent 9,917,856 B2

Pet. 37–38; Ex. 1003 ¶¶ 103, 111–113, 132–133. Specifically, as discussed above, Buruganahalli discloses that when a client attempts to access a remote server "using an encrypted session protocol," the security device intercepts "the initial unencrypted/clear text data communications," e.g., a TLS hello message, "exchanged as part of an initial handshake to setup a secure connection for a new session." Ex. 1004, 4:37–40, 5:27–42, 14:21–25, 15:7–11, Figs. 6–7; *see id.* at 4:59–61, 6:39–41, 7:19–25, 11:24–51, code (57); Ex. 1003 ¶¶ 103, 111–113; *supra* § IV.D.2(c). The security device processes the unencrypted data communications to "extract a hostname" that identifies the destination domain the client wants to connect with. Ex. 1004, 5:6–10, 9:50–57, 11:47–51, 14:21–25, 14:28–31, 14:50–55, 15:11–18, code (57), Fig. 7; *see* Ex. 1003 ¶¶ 91, 111–112. For instance, the security device may analyze "an initial TLS handshake exchange" to "extract a hostname to facilitate destination domain extraction for secure protocols." Ex. 1004, 11:47–51, 14:28–31, 14:50–55, 15:13–18; *see id.* at 5:6–10, 11:24–47; Ex. 1003 ¶ 111.

Based on the extracted hostname (destination domain), the security device "identifies the packets as being part of a new session and creates a new session flow." Ex. 1004, 5:7, 5:35–36, 14:25–33; *see* Ex. 1003 ¶¶ 111, 115, 133. The security device uses the extracted hostname (destination domain) to "apply firewall policies or take responsive actions." Ex. 1004, 5:35–42; *see* Ex. 1003 ¶ 108. For instance, the security device may use the extracted hostname (destination domain) to implement a whitelist/blacklist policy where blacklisted items correspond to network-threat indicators. Ex. 1004, 7:39–67, 16:32–48; *see* Ex. 1003 ¶¶ 90–91, 105, 109, 116, 120, 124, 128, 132.

67

IPR2022-00182
Patent 9,917,856 B2

(h)   Limitation [1.g]

Claim 1 recites "filtering . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators." Ex. 1001, 25:30, 25:43–45.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli's security device "filters encrypted data communications after a determination that the handshake traffic corresponds to a network-threat indicator (*e.g.*, whether the extracted destination domain is on a blacklist)." Pet. 38 (citing Ex. 1004, 4:31–44, 6:12–39, 6:62–7:9, 7:12–29, 7:39–51, 7:60–67). Petitioner also contends that "the handshake message comprises data (*e.g.*, destination domain) that also applies to the encrypted data of the session, such that the security risks associated with the handshake message and encrypted data are correlated." *Id.* According to Petitioner, "packets identified as being part of the secure session" after the handshake traffic correspond to "filtered encrypted packets." *Id.* at 25.

Patent Owner disputes that Buruganahalli teaches limitation [1.g]. *See* Prelim. Resp. 46–52. Specifically, Patent Owner asserts that Petitioner "equates Buruganahalli's firewall policies/rules including the blacklist policy to the claimed 'plurality of packet-filtering rules.'" *Id.* at 47 (citing Pet. 29–30). Patent Owner asserts that "when encrypted packets are received by Buruganahalli's security device," the security device "performs decryption before filtering any traffic with those policies." *Id.* (citing Ex. 1004, 12:29–32, 14:8–15:3, Fig. 6). According to Patent Owner, Buruganahalli explains "with respect to Fig. 3B" that "after setting up Sessions A and B, '[A]ny data that is communicated from the client 312 to the firewall 314 is decrypted using a session key S1 and is then inspected by

68

IPR2022-00182
Patent 9,917,856 B2

the firewall 314.'" *Id.* (alteration by Patent Owner) (quoting Ex. 1004, 12:30–32). Patent Owner further asserts that "Buruganahalli's policy-based filtering approach is performed on decrypted data, not 'packets comprising encrypted data' as claimed." *Id.*

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.g]. *See* Pet. 38–39; Ex. 1003 ¶¶ 134–135. Specifically, as discussed above, Buruganahalli's security device "identifies the packets as being part of a new session and creates a new session flow" based on a hostname (destination domain) extracted from unencrypted data communications, e.g., the handshake traffic. Ex. 1004, 5:7, 5:35–36, 14:25–33; *see id.* at 4:37–40, 9:50–57, 11:24–51, 14:21–25; Ex. 1003 ¶¶ 111, 115; *supra* § IV.D.2(d). Then, the security device inspects the session traffic including "encrypted data communications associated with the session" and identifies packets "as belonging to the session based on a flow lookup." Ex. 1004, 8:55–60, 14:26–28; *see* Ex. 1003 ¶¶ 111, 115. Hence, the "encrypted data communications are filtered after it is determined that information extracted from the handshake traffic matches with those on a blacklist, and thus corresponds to a network-threat indicator." Ex. 1003 ¶ 135.
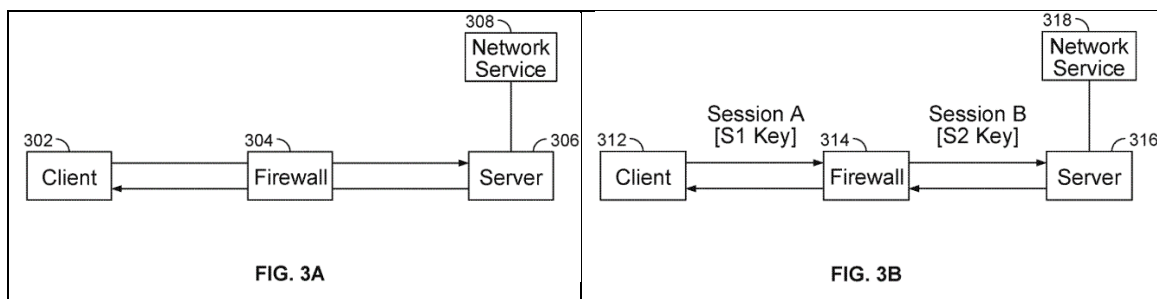
By inspecting the session traffic including "encrypted data communications associated with the session" and identifying packets "as belonging to the session based on a flow lookup," Buruganahalli's security device "filter[s] . . . the determined packets comprising the encrypted data that corresponds to the one or more network-threat indicators" according to limitation [1.g]. *See* Ex. 1003 ¶¶ 120, 135; Ex. 1004, 8:55–60, 11:47–51, 14:21–33, 14:50–55. Hence, for each session packets comprising

69

IPR2022-00182
Patent 9,917,856 B2

unencrypted data and packets comprising encrypted data are correlated and
filtered based on the hostname (destination domain) extracted from the
handshake traffic, and then the correlated and filtered packets are processed
separately from packets destined for other domains. *See* Ex. 1003
¶¶ 120–121, 133, 135; Ex. 1004, 8:55–60, 11:47–51, 14:21–33, 14:50–55.

 Patent Owner's assertion that "when encrypted packets are received
by Buruganahalli's security device," the security device performs decryption
before filtering any traffic with those policies" relates to Figure 3B's
embodiment in Buruganahalli. *See* Prelim. Resp. 47 (citing Ex. 12:29–32,
Fig. 3B); Ex. 1004, 12:4–13:4, Fig. 3B. But Figure 3B's embodiment differs
from Figure 3A's embodiment as indicated by the following side-by-side
comparison:

In this side-by-side comparison, Figure 3A on the left shows "an SSL/TLS
session passing through" firewall 304, whereas Figure 3B on the right shows
firewall 314 performing "a trusted man-in-the-middle technique by
effectively splitting the SSL session between" client 312 and remote
server 316 "into two half sessions shown as Session A and Session B." *See*
Ex. 1004, 1:53–56, 10:54–57, 12:12–18, Figs. 3A–3B.

 For Figure 3B's embodiment, Buruganahalli explains that "any data
that is communicated from the client 312 to the firewall 314 is decrypted
using a session key S1 and is then inspected by the firewall 314," e.g., "to

70

IPR2022-00182
Patent 9,917,856 B2

monitor the session traffic for firewall policy/rule compliance." Ex. 1004, 12:29–32, 12:42–44; *see* Ex. 1003 ¶ 92. For Figure 3A's embodiment, however, Buruganahalli explains that by "parsing the handshake traffic," e.g., "parsing a client hello message to extract a hostname that identifies the destination domain," firewall 304 may "apply one or more firewall policies/ rules . . . related to destination domains" without "having to decrypt" encrypted communications. Ex. 1004, 11:7–19; *see id.* at 5:24–27, 5:35–42, 7:1–9; Ex. 1003 ¶¶ 94, 108, 113. Buruganahalli discloses using techniques according to Figure 3A's embodiment separately or together with techniques according to Figure 3B's embodiment. *See* Ex. 1004, 11:7–12:3; *see* Ex. 1003 ¶ 93. Hence, we disagree with Patent Owner that "Buruganahalli's policy-based filtering approach is performed on decrypted data, not 'packets comprising encrypted data' as claimed." *See* Prelim. Resp. 47.

(i)   Limitation [1.h]

Claim 1 recites "routing, by the packet-filtering system, filtered packets to a proxy system based on a determination that the filtered packets comprise data that corresponds to the one or more network-threat indicators." Ex. 1001, 25:46–49.

Petitioner contends that Buruganahalli teaches this limitation because Buruganahalli discloses sending "the encrypted data communications" to a firewall with a decrypt engine that "applies 'trusted man-in-the-middle techniques using a self-signed certificate.'" Pet. 39–40 (quoting Ex. 1004, 9:66–67). Petitioner asserts that in such an arrangement the firewall includes "functionality acting as a proxy for both the remote server and the client by standing in line of their communications in a 'transparent' manner, as was known in the art." *Id.* at 40–41 (citing Ex. 1005, 4:50–63, 8:36–47,

71

IPR2022-00182
Patent 9,917,856 B2

8:65–9:7; Ex. 1034, 8:12–19; Ex. 1036, 14). Petitioner asserts that Buruganahalli "further discloses that it was known that a firewall may be implemented in a security device that includes other functions, such as a routing function that may be based on source and destination information, and a 'proxy' function that is one of the 'security functions.'" *Id.* at 41 (citing Ex. 1004, 1:36–38, 3:5–15).

Patent Owner makes no arguments specific to limitation [1.h]. *See, e.g.*, Prelim. Resp. 45–52.

Based on the current record and for the reasons advanced by Petitioner and supported by Dr. Weissman's testimony, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches limitation [1.h]. *See* Pet. 39–42; Ex. 1003 ¶¶ 136–145.

(j)   Alleged Objective Indicia of Nonobviousness

(i)   Background

Before reaching a conclusion about obviousness, we consider evidence concerning objective indicia of nonobviousness. *See Apple*, 839 F.3d at 1048. For such evidence to have substantial weight, "its proponent must establish a nexus between the evidence and the merits of the claimed invention." *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). "[T]here is no nexus unless the evidence presented is 'reasonably commensurate with the scope of the claims.'" *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). The patentee "bears the burden of showing that a nexus exists." *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999).

A rebuttable presumption of nexus arises "when the patentee shows that the asserted objective evidence is tied to a specific product and that

72

Appx097

IPR2022-00182
Patent 9,917,856 B2

product 'embodies the claimed features, and is coextensive with them.'"
Fox Factory, Inc. v. SRAM, LLC, 944 F.3d 1366, 1373 (Fed. Cir. 2019)
(quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072
(Fed. Cir. 2018)). Whether a rebuttable presumption of nexus arises "turns
on the nature of the claims and the specific facts." *Teva Pharm. Int'l GmbH
v. Eli Lilly & Co.*, 8 F.4th 1349, 1362 (Fed. Cir. 2021). The presumption
analysis should consider the unclaimed features in the product tied to
the objective evidence to assess their significance and impact on the
correspondence between the patented invention and the product. *Quanergy
Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406, 1418 (Fed. Cir. 2022).
When, "for example, the patented invention is only a small component of the
product tied to the objective evidence, there is no presumption of nexus."
Henny Penny Corp. v. Frymaster LLC, 938 F.3d 1324, 1333 (Fed. Cir.
2019). Absent a presumption of nexus, the patentee may prove nexus by
showing that the asserted objective evidence resulted directly from "the
unique characteristics of the claimed invention." *Fox Factory*, 944 F.3d at
1373–74; *see In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996).

Thus, the Board employs a two-step analysis in evaluating whether a
patentee has established a nexus between the evidence concerning objective
indicia of nonobviousness and the merits of the claimed invention. *See
Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 32–33
(PTAB Jan. 24, 2020) (precedential). Initially, the Board considers whether
the patentee has demonstrated that the "products are coextensive (or nearly
coextensive) with the challenged claims," resulting in a rebuttable
presumption of nexus. *Id.* at 33. Absent a presumption of nexus, the Board
considers whether the patentee has demonstrated "a legally and factually

73

Appx098

IPR2022-00182
Patent 9,917,856 B2

sufficient connection" between the asserted objective evidence and the claimed invention. *See Henny Penny*, 938 F.3d at 1332; *Lectrosonics*, IPR2018-01129, Paper 33 at 33.

Patent Owner asserts that the district court in the Cisco case found "substantial objective evidence of nonobviousness," i.e., "objective evidence of long-felt need, industry praise, and copying." Prelim. Resp. 2, 4; *see id.* at 16, 54–56. Patent Owner also asserts that Petitioner gives "short shrift" to the "known evidence of objective indicia of nonobviousness (secondary considerations)" from the Cisco case. *Id.* at 36.

Petitioner asserts that the trial transcript in the Cisco case "references purported secondary considerations for the '856 patent" but "the underlying evidence is not publicly available and Petitioner does not have access to such evidence." Pet. 50. Petitioner also asserts that "[f]rom what little can be discerned from the public record, the evidence fails to show nexus." *Id.*

Based on the current record and for the reasons explained below, Patent Owner has not shown sufficiently that a presumption of nexus should apply or that a nexus exists between the asserted objective evidence and the merits of the claimed invention. *See infra* § IV.D.2(j)(ii)–(iii).

(ii)   <u>Presumption of Nexus</u>

At this stage of the proceeding, Patent Owner does not identify information allowing us to evaluate whether Patent Owner shows sufficiently "that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *See* Prelim. Resp. 54–56; *Fox Factory*, 944 F.3d at 1373. Nor does Patent Owner direct us to where the district court in the Cisco case analyzed

74

Appx099

IPR2022-00182
Patent 9,917,856 B2

whether a specific product "embodies the claimed features, and is coextensive with them." *See* Prelim. Resp. 54–56.

Hence, based on the current record, Patent Owner has not shown sufficiently that a specific product is "coextensive (or nearly coextensive) with the challenged claims" and that a presumption of nexus should apply to the challenged claims. *See* Prelim. Resp. 54–56; *Lectrosonics*, IPR2018-01129, Paper 33 at 33.

(iii)   Proof of Nexus: Long-Felt Need and Industry Praise

For long-felt need and industry praise, Patent Owner notes that Petitioner submitted as Exhibit 1027 the district court's opinion in the Cisco case that "twice reproduces a Cisco press release from 2017." Prelim. Resp. 54 (citing Ex. 1027, 63–64, 138). Patent Owner asserts that the 2017 Cisco press release evidences "long-felt need and industry recognition for the technology claimed in the '856 patent." *Id.*

The 2017 Cisco press release states that "[t]oday Cisco is introducing a suite of" Cisco Digital Network Architecture (DNA) "technologies and services designed to work together as a single system," including Encrypted Traffic Analytics (ETA) that uses "cyber intelligence to detect known attack signatures even in encrypted traffic." Ex. 1027, 64, 138. "ETA deals with the ability to track and analyze encrypted traffic in the network without decrypting said traffic." *Id.* at 19. The press release does not mention Patent Owner, its products, or its patents, e.g., the '856 patent. *Id.* at 64, 138.

The 2017 Cisco press release notes that ETA "automat[es] the edge of the network and embed[s] machine learning and analytics at a foundational level." Ex. 1027, 64, 138. Consistent with that press release, a 2019 Cisco technical white paper states that Cisco's Stealthwatch with ETA technology

75

Appx100

IPR2022-00182
Patent 9,917,856 B2

uses "machine learning algorithms to pinpoint malicious patterns in encrypted traffic." Ex.1027, 45; *see id.* at 46 (reproducing PTX-570 at 593). In contrast to Cisco's Stealthwatch with ETA technology, the '856 patent does not disclose or claim using "machine learning algorithms to pinpoint malicious patterns in encrypted traffic." *See, e.g.*, Ex. 1001, 2:5–16:26, 25:14–30:31, Figs. 3A–3C.

Additionally, according to the district court, "Cisco's documents describe the four main elements of information" extracted "from packets by the ETA technology" as follows:

(1)   Sequence of Packet Lengths and Times (SPLT): "SPLT conveys the length (number of bytes) of each packet's application payload for the first several packets of a flow, along with the interarrival times of those packets";

(2)   Initial Data Packet (IDP): "IDP is used to obtain packet data from the first packet of a flow" and "allows extraction of interesting data such as an HTTP URL, DNS hostname and address, and other data elements";

(3)   Byte Distribution: "[t]he byte distribution represents the probability that a specific byte value appears in the payload of a packet within a flow"; and

(4)   TLS Specific Features: "[t]he TLS handshake is composed of several messages that contain interesting, unencrypted metadata used to extract data elements, such as cipher suite, TLS version, and the client's public key length."

Ex. 1027, 33; *see id.* at 19–20, 62.

At this stage of the proceeding, Patent Owner does not explain how the claimed invention relates to any of "the four main elements of information" extracted "from packets by the ETA technology" or the use of machine-learning algorithms. *See* Prelim. Resp. 54–56. Nor does Patent

76

Appx101

IPR2022-00182
Patent 9,917,856 B2

Owner direct us to where the district court in the Cisco case analyzed how the claimed invention relates to any of "the four main elements of information" extracted "from packets by the ETA technology" or the use of machine-learning algorithms. *Id.* at 4, 54–56. Hence, based on the current record, Patent Owner has not shown sufficiently that any industry praise resulted directly from "the unique characteristics of the claimed invention" rather than other factors "unrelated to the quality of the patented subject matter." *See id.* at 4, 54–56; *Huang*, 100 F.3d at 140.

Further, a long-felt need "is analyzed as of the date of an articulated identified problem and evidence of efforts to solve that problem." *Tex. Instrs. Inc. v. Int'l Trade Comm'n*, 988 F.2d 1165, 1178 (Fed. Cir. 1993); *see WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1334 (Fed. Cir. 2016) (discussing efforts to solve an "articulated identified problem" by an alleged infringer before the invention); *Apple Inc. v. Samsung Elecs. Co.*, 816 F.3d 788, 804–05 (Fed. Cir. 2016) (requiring evidence of unsuccessful efforts to solve an "articulated identified problem" before the invention), *vacated in part on other grounds*, 839 F.3d 1034 (Fed. Cir. 2016). The analysis should consider "the filing date of the challenged invention to assess the presence of a long-felt and unmet need." *Procter & Gamble Co. v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 998 (Fed. Cir. 2009).

At this stage of the proceeding, Patent Owner does not identify "the date of an articulated identified problem" solved by the claimed invention or "evidence of efforts to solve that problem." Prelim. Resp. 54–56. Nor does Patent Owner direct us to where the district court in the Cisco case analyzed "the date of an articulated identified problem" solved by the claimed invention or "evidence of efforts to solve that problem." *Id.* at 4, 54–56.

77

Appx102

IPR2022-00182
Patent 9,917,856 B2

Hence, based on the current record, Patent Owner does not show sufficiently that the claimed invention satisfied a long-felt need or received industry praise.

(iv)   Proof of Nexus: Copying

Patent Owner asserts that the district court in the Cisco case found that "Cisco copied the claimed inventions of the four infringed patents, including the '856 Patent, and further found Cisco's infringement to be willful." Prelim. Resp. 16 (citing Ex. 1027, 160); *see id.* at 55 (citing Ex. 1027, 57, 160–61).

At this stage of the proceeding, however, Patent Owner does not identify information allowing us to evaluate whether copying occurred. *See* Prelim. Resp. 16, 54–56. Further, for the asserted objective evidence "to have substantial weight, there must be a nexus to some aspect of the claim not already in the prior art." *In re Kao*, 639 F.3d 1057, 1069 (Fed. Cir. 2011). Based on the current record, Petitioner establishes sufficiently for purposes of institution that Buruganahalli teaches claim 1's subject matter. *See supra* §§ IV.D.2(a)–(i). Based on the current record, Patent Owner does not show sufficiently "a nexus to some aspect of the claim not already in the prior art." *See* Prelim. Resp. 16, 54–56. Hence, for purposes of institution, we accord little weight to the evidence of copying.

(v)   Summary for Objective Indicia of Nonobviousness

For the reasons discussed above, Patent Owner has not shown sufficiently that a specific product "embodies the claimed features, and is coextensive with them." *See* Prelim. Resp. 54–56; *supra* § IV.D.2(j)(ii); *Fox Factory*, 944 F.3d at 1373. For long-felt need and industry praise, Patent Owner has not shown sufficiently that there is a nexus between the asserted

78

Appx103

IPR2022-00182
Patent 9,917,856 B2

objective evidence and the merits of the claimed invention. *See* Prelim.
Resp. 54–56; *supra* § IV.D.2(j)(iii). For copying, we accord little weight to
the evidence of copying. *See supra* § IV.D.2(j)(iv).

(k)   Conclusion About Obviousness/Nonobviousness of Claim 1

As discussed above, Petitioner's analysis addresses every limitation in
claim 1. *See supra* §§ IV.D.2(b)–(i). In addition, Patent Owner's evidence
of objective indicia of nonobviousness is insufficient at this stage of the
proceeding. *See supra* § IV.D.2(j). Hence, Petitioner demonstrates a
reasonable likelihood of prevailing in proving claim 1 unpatentable under
§ 103 as obvious over Buruganahalli.

3. INDEPENDENT CLAIMS 24 AND 25

Petitioner contends that claims 24 and 25 are unpatentable under
§ 103 as obvious over Buruganahalli for essentially the same reasons as
claim 1. *See* Pet. 28–42; Ex. 1003 ¶¶ 101–146.

Claim 25 requires that the URI specified by the packet-filtering rules
"indicat[e] one or more of the plurality of network-threat indicators," while
claims 1 and 25 lack a similar requirement. Ex. 1001, 25:14–49,
28:59–30:31. For claim 25's requirement linking the URI to a network-
threat indicator, Petitioner contends that Buruganahalli "discloses packet-
filtering rules" implemented for "security purposes" that (1) "indicate
network-threat indicators" and (2) "include 'requirements or rules related to
destination domains'" listed "on a blacklist if they present a security risk."
Pet. 35–36 (quoting Ex. 1004, 11:1). Further, Petitioner asserts that
Buruganahalli's security device may filter packets based on the URI
specified by the plurality of packet-filtering rules because the security device

79

Appx104

IPR2022-00182
Patent 9,917,856 B2

may use "a uniform resource locator (URL)/category filtering policy." *Id.*
at 35 (citing Ex. 1004, 7:39–51, 10:21–28, 15:37–45).

Patent Owner contends that claims 24 and 25 are patentable over
Buruganahalli for the same reasons as claim 1. *See* Prelim. Resp. 3–4,
45–56.

Based on the current record and for the reasons advanced by
Petitioner and supported by Dr. Weissman's testimony as well as the reasons
discussed above for claim 1, Petitioner establishes sufficiently for purposes
of institution that Buruganahalli teaches the subject matter of claims 24
and 25. *See* Pet. 28–42; Ex. 1003 ¶¶ 101–146; *supra* §§ IV.D.2(a)–(i).
Also, we accord little weight at this stage of the proceeding to Patent
Owner's evidence concerning objective indicia of nonobviousness. *See*
supra § IV.D.2(j). Hence, Petitioner demonstrates a reasonable likelihood of
prevailing in proving claims 24 and 25 unpatentable under § 103 as obvious
over Buruganahalli.

E. Alleged Obviousness over Buruganahalli *and Baehr: Claims 1, 24, and 25*

Petitioner contends that claims 1, 24, and 25 are unpatentable under
§ 103 as obvious over Buruganahalli and Baehr. *See* Pet. 8, 42–50. Above,
we provided an overview of Buruganahalli. Below, we provide an overview
of Baehr, and then we consider the obviousness issues. As explained below,
Petitioner establishes sufficiently for purposes of institution that the
combined disclosures in Buruganahalli and Baehr teach the subject matter
of claims 1, 24, and 25.

80

Appx105

IPR2022-00182
Patent 9,917,856 B2

1. OVERVIEW OF BAEHR (EXHIBIT 1005)

Baehr is a U.S. patent titled "System for Packet Filtering of Data Packets at a Computer Network Interface," issued on March 2, 1999, from an application filed on February 4, 1997. Ex. 1005, codes (22), (45), (54). Baehr states that the invention "relates to screening of data packets sent from one computer network to another," e.g., "data packets transmitted between a network to be protected, such as a private network, and another network, such as a public network." *Id.* at 1:9–10, code (57).

Baehr describes a problem with "conventional computer firewalls," in particular, "they participate in IP (Internet Protocol) transactions, and in doing so generate information identifying them as IP machines, which makes them visible for targeting by intruders." Ex. 1005, 1:39–44. Baehr explains that a "firewall and packet filtering system should ideally be invisible to intruders so as to help minimize the number of ways in which it can be targeted, while nonetheless filling functions that are appropriate." *Id.* at 1:50–53.

Baehr identifies a need for "a system that can respond to data packets from outside a network without revealing IP address information about either the filtering system or about hosts within the network." Ex. 1005, 2:3–7. Baehr addresses that need by disclosing "a screening system that acts as both a firewall in the conventional sense and a signatureless packet filtering system." *Id.* at 2:10–12.

81

Appx106

IPR2022-00182
Patent 9,917,856 B2

Baehr's Figure 5 (reproduced below) depicts a packet-screening system:
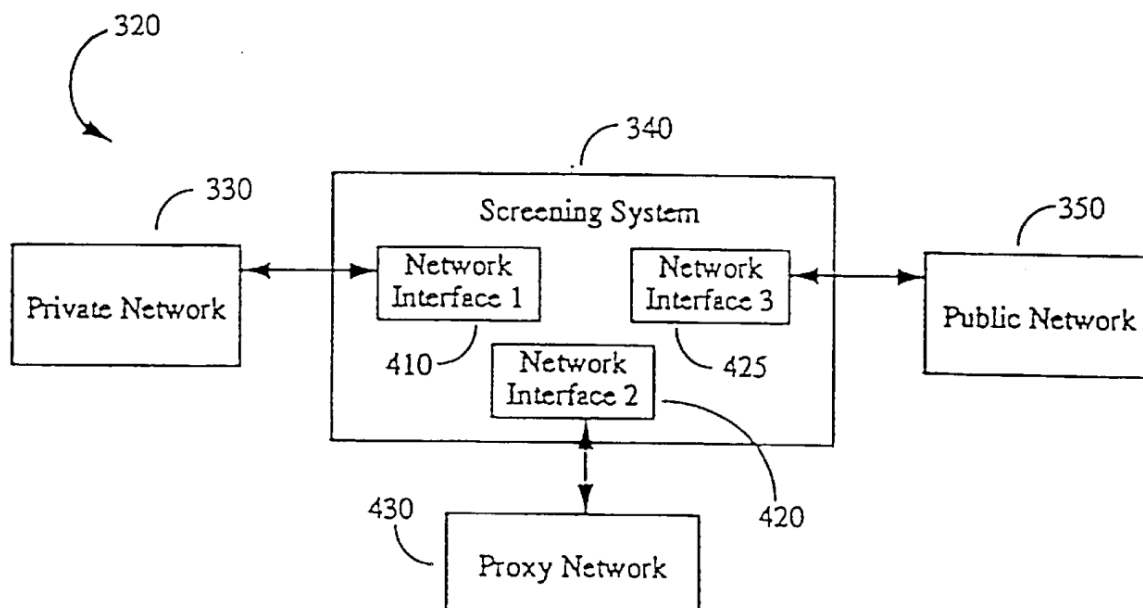

Figure 5

Figure 5 "is a logical block diagram" of packet-screening system 340 implemented on network 320. Ex. 1005, 3:51–54, Fig. 5; *see id.* at 2:63–65. Network 320 includes private network 330 and public network 350. *Id.* at 3:59–63, Fig. 5. Packet-screening system 340 includes network interface 410 coupled to private network 330, network interface 420 coupled to proxy network 430, and network interface 425 coupled to public network 350. *Id.* at 3:59–64, Fig. 5. Packet-screening system 340 performs "all of the conventional firewall functions" as well as "screening functions." *Id.* at 3:56–58.

82

IPR2022-00182
Patent 9,917,856 B2

Baehr's Figure 6 (reproduced below) shows in greater detail the packet-screening system depicted in Figure 5:
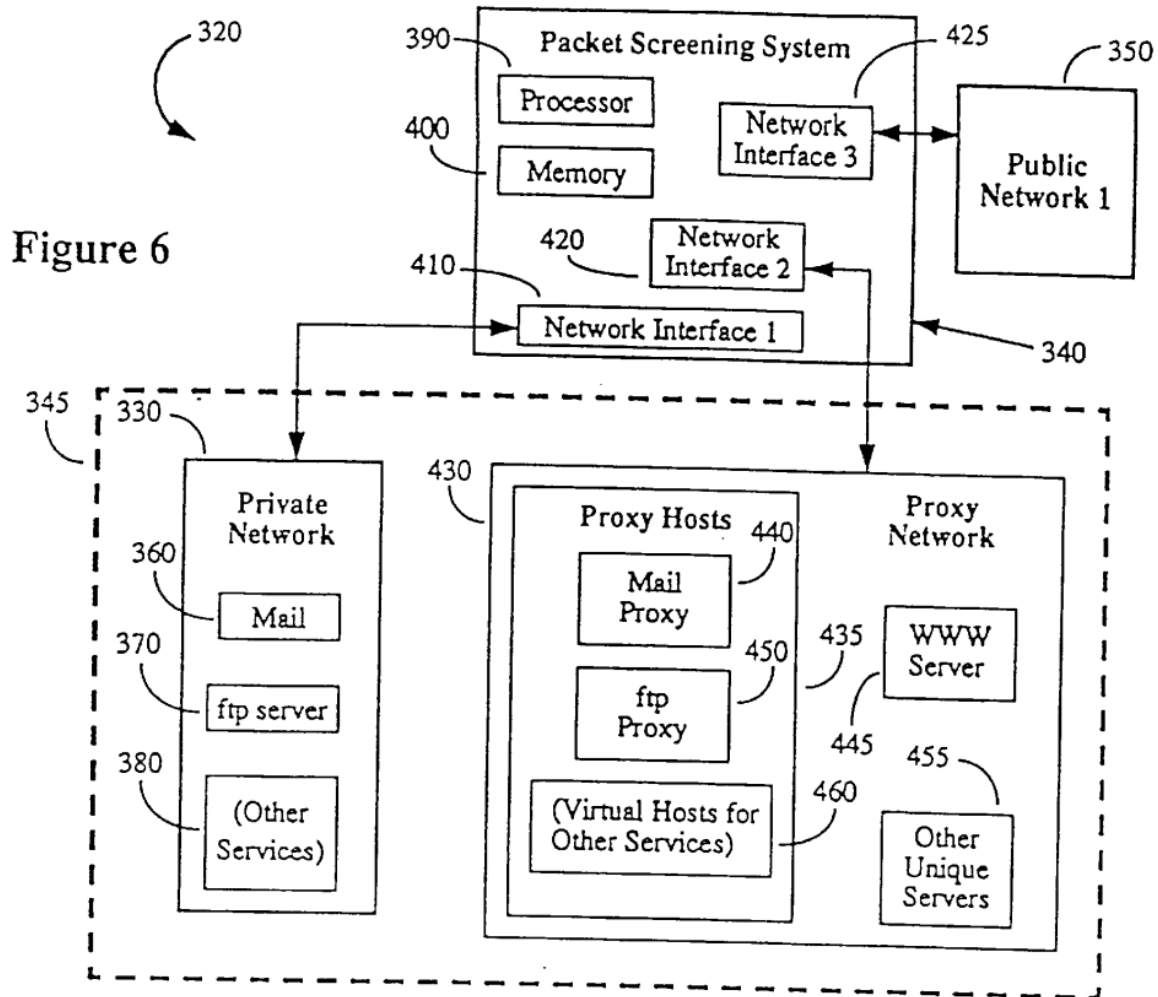

Figure 6

Figure 6 "is a functional block diagram" of packet-screening system 340 implemented on network 320. Ex. 1005, 2:66–67, 4:12, Fig. 6. As Figure 6 shows, packet-screening system 340 includes processor 390 and memory 400 along with network interfaces 410, 420, and 425. *Id.* at 4:12–19, Fig. 6. As Figure 6 also shows, private network 330 includes "a mail host 360; an ftp (file transfer protocol) host 370 for governing ftp connections; and other hosts 380 for other services, such as a WWW (World-Wide Web) server." *Id.* at 4:20–25, Fig. 6.

83

Appx108

IPR2022-00182
Patent 9,917,856 B2

Baehr explains that proxy network 430 preferably includes "proxy (or virtual) hosts 435" with the proxy hosts "mirroring (or acting as proxy for) each of a subset (or all) of the hosts found on" private network 330. Ex. 1005, 4:26–32, code (57). In Figure 6, for example, proxy network 430 includes "a proxy mail server 440, a proxy ftp server 450, and other virtual hosts 460, with a virtual (proxy) host for each actual host desired to be duplicated." *Id.* at 4:33–37, Fig. 6. The proxy hosts in proxy network 430 "represent actual hardware and/or software in the proxy network" and "mimic the behavior" of the actual hosts in private network 330. *Id.* at 4:37–40. While Figure 6 depicts the proxy hosts in proxy network 430 as "separate computer systems" from packet-screening system 340, Baehr also discloses using "separate logical entities, but not separate physical entities," for proxy network 430 and packet-screening system 340. *Id.* at 4:26–37, 4:64–5:11, Figs. 6–7.

"[T]he private network 330 and the proxy network 430 together form a single logical or apparent network 345, i.e. a single apparent domain from the point of view of outsiders, such as users on the public network 350." Ex. 1005, 4:53–56. Hence, "when a user attempts to access a service or host of the private network, the request may be shunted aside to the proxy network" without "any indication being given to the user that this has occurred." *Id.* at 4:57–61.

To perform firewall and screening functions, packet-screening system 340 intercepts a data packet from public network 350 addressed to a service or host in private network 330. Ex. 1005, 6:30–32, 10:4–6, Fig. 6. Based on "a predetermined set of criteria" and "other information," such as "the time of day the packet was sent or is received" or "the state of the

84

Appx109

IPR2022-00182
Patent 9,917,856 B2

connection between the public and private networks," packet-screening system 340 takes "one or several predefined actions [on] each data packet." *Id.* at 6:37–50, 7:8–10, code (57). For example, packet-screening system 340 may drop a data packet from or to any source "not cleared in advance" or "pass the packet through to its destination, with or without some alteration based upon predetermined criteria." *Id.* at 7:16–22, 7:30–40, 10:46–49, code (57). Further, packet-screening system 340 may send a data packet to proxy network 430 for "security purposes," and a proxy host in proxy network 430 may execute operations on the packet instead of the actual, intended host in private network 330. *Id.* at 8:13–17, code (57); *see id.* at 10:46–49.

Baehr explains that the "proxy network has the additional advantage of preventing outsiders from ever actually entering the private network" because "once a user has been allowed access or a connection to [the] private network, it is much more difficult to restrict his/her actions than if no access at all is allowed." Ex. 1005, 8:36–40. By providing "duplicate or mirrored proxy functionality of some of the services of the private network in the proxy network," an "outside user's requests are met while invisibly preventing him/her from ever actually accessing the private network." *Id.* at 8:40–47; *see id.* at 8:65–9:7.

2. Differences Between the Claimed Invention and the Prior Art

For the ground based on Buruganahalli and Baehr, Petitioner cites Buruganahalli as teaching most of the limitations in claims 1, 24, and 25 and Baehr as teaching limitation [1.h] and the similar limitations in claims 24 and 25, e.g., "[1.h] routing, by the packet-filtering system, filtered packets to

85

Appx110

IPR2022-00182
Patent 9,917,856 B2

a proxy system based on a determination that the filtered packets comprise data that corresponds to the one or more network-threat indicators." *See* Pet. 42–50; Ex. 1003 ¶¶ 147–158; *see also* Pet. 28–39; Ex. 1003 ¶¶ 101–135.

In particular, Petitioner contends that Baehr discloses a packet-screening system that acts as a firewall and uses (1) a "screen" positioned between a public network and a private network and (2) a "proxy network" to protect the private network from attacks. Pet. 44–45 (citing Ex. 1003 ¶ 151; Ex. 1005, 2:10–23, 2:66–67, 6:37–7:7, 9:63–67, 10:2–5, code (57), Fig. 6). Petitioner also contends that Baehr discloses that when a packet "is sent by a host on, for instance, [the] public network," the packet "is received at [a] port (interface)" of the screen. *Id.* at 45 (citing Ex. 1005, 9:63–67, 10:2–5).

Further, Petitioner asserts that the screen (1) filters packets using a set of predetermined screening criteria and (2) takes "one or several predefined actions" after screening, including "sending packets aside to the proxy network" for "security purposes" even if their intended destination is the private network. Pet. 45–46 (citing Ex. 1005, 2:25–30, 6:37–7:25, 8:12–18, 10:43–49). Petitioner also asserts that the proxy network may be "a separate computer system" or "a separate logical entity, but not physically separate," from the screen, e.g., when "implemented entirely in the program instructions" stored in the packet-screening system's memory. *Id.* at 47 (citing Ex. 1003 ¶ 154; Ex. 1005, 4:26–31, 4:64–5:8, Fig. 6).

Patent Owner asserts that Petitioner fails "to specify where each claim element is found in the combination" as required under 37 C.F.R.

86

Appx111

IPR2022-00182
Patent 9,917,856 B2

§ 42.104(b)(4). Prelim. Resp. 36; *see id.* at 35. According to Patent Owner, "[t]his is yet another basis for denial." *Id.* at 36.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that Baehr teaches limitation [1.h] and the similar limitations in claims 24 and 25. *See* Pet. 44–47; Ex. 1003 ¶¶ 151–154. Specifically, Baehr discloses that a packet-screening system intercepts a data packet from a public network addressed to a service or host in a private network. Ex. 1005, 6:30–32, 10:4–6, Fig. 6; *see* Ex. 1003 ¶ 151. Based on "a predetermined set of criteria" and "other information," such as "the time of day the packet was sent or is received" or "the state of the connection between the public and private networks," the packet-screening system takes "one or several predefined actions [on] each data packet." Ex. 1005, 6:37–50, 7:8–10; *see* Ex. 1003 ¶¶ 151–152.

For example, the packet-screening system may send a data packet to a proxy network for "security purposes," and a proxy host in the proxy network may execute operations on the packet instead of the actual, intended host in the private network. Ex. 1005, 8:13–17; *see id.* at 10:46–49; Ex. 1003 ¶¶ 152–153. Further, Baehr's Figure 6 depicts the proxy hosts in the proxy network as "separate computer systems" from the packet-screening system. Ex. 1005, 4:26–37, Fig. 6; *see* Ex. 1003 ¶ 154.

We disagree with Patent Owner's assertion that Petitioner fails "to specify where each claim element is found in the combination." *See* Prelim. Resp. 36. For the ground based on Buruganahalli and Baehr, Petitioner explains how Buruganahalli teaches most of the limitations in claims 1, 24, and 25 and how Baehr teaches limitation [1.h] and the similar limitations in claims 24 and 25. Pet. 42–50; *see* Ex. 1003 ¶¶ 147–158; *supra*

Appx112

IPR2022-00182
Patent 9,917,856 B2

§§ IV.D.2(b)–(h), IV.D.3; *see also* Pet. 28–39; Ex. 1003 ¶¶ 101–135.

Contrary to Patent Owner's contention, there is no "basis for denial" under

37 C.F.R. § 42.104(b)(4). *See* Prelim. Resp. 36.

3. ALLEGED REASONS FOR COMBINING THE TEACHINGS OF THE REFERENCES

Petitioner identifies reasons that would have prompted an ordinarily

skilled artisan to combine Baehr's teachings about routing filtered packets

to a proxy network with Buruganahalli's teachings to implement "a proxy

system separate from and external to" a security device. *See* Pet. 46–48.

Further, Petitioner asserts that an ordinarily skilled artisan "would have

had a reasonable expectation of success" in combining the teachings of

Buruganahalli and Baehr. *See id.* at 49. Dr. Weissman's testimony supports

Petitioner's positions. *See* Ex. 1003 ¶¶ 155–158.

For instance, Dr. Weissman testifies that an ordinarily skilled artisan

would have been motivated to combine Baehr's teachings about routing

filtered packets to a proxy network with Buruganahalli's teachings to

achieve the following advantages:

(1)   "preserv[e] computing resources";

(2)   "achiev[e] load balancing";

(3)   "maximiz[e] performance";

(4)   "isolate a private network from an outsider" and
        "strengthen security"; and

(5)   "limit any potential security vulnerability to
        only one component of a larger system."

Ex. 1003 ¶¶ 155–156 (citing Ex. 1004, 3:16–24, 4:7–15; Ex. 1005, 8:36–47,

code (57); Ex. 1036, 14).

88

Appx113

IPR2022-00182
Patent 9,917,856 B2

Dr. Weissman explains that "having a dedicated function separate from other functions allows the proxy function to manage its own resources efficiently without having to share resources with another function" and that "this approach also increases the overall system performance by allowing each function to focus on performing its own specialized tasks." Ex. 1003 ¶ 155. Dr. Weissman also explains that "having a separate proxy external to a firewall helps isolate the proxy from the private network by positioning the screen/firewall between the two networks." *Id.* ¶ 156.

Patent Owner makes no arguments against combining the teachings of Buruganahalli and Baehr. *See, e.g.*, Prelim. Resp. 21–24, 45–52.

Based on the current record, Petitioner establishes sufficiently for purposes of institution that an ordinarily skilled artisan would have had reasons, e.g., as articulated by Dr. Weissman, to combine the teachings of Buruganahalli and Baehr in the way Petitioner proposes. *See* Ex. 1003 ¶¶ 155–156. Petitioner also establishes sufficiently for purposes of institution that an ordinarily skilled artisan would have had a reasonable expectation of success in combining the teachings of Buruganahalli and Baehr. *Id.* ¶¶ 157–158.

4. CONCLUSION ABOUT OBVIOUSNESS/NONOBVIOUSNESS

As discussed above, Petitioner's analysis addresses every limitation in claims 1, 24, and 25. *See supra* §§ IV.D.2(b)–(h), IV.D.3, IV.E.2. Additionally, Petitioner provides a reason with rational underpinning as to why an ordinarily skilled artisan would have been motivated to combine the teachings of Buruganahalli and Baehr in the way Petitioner proposes and would have had a reasonable expectation of success. *See supra* § IV.E.3. Also, we accord little weight at this stage of the proceeding to Patent

89

IPR2022-00182
Patent 9,917,856 B2

Owner's evidence concerning objective indicia of nonobviousness. *See supra* § IV.D.2(j). Thus, based on the current record, Petitioner establishes sufficiently for purposes of institution that the combined disclosures in Buruganahalli and Baehr teach the subject matter of claims 1, 24, and 25. Hence, Petitioner demonstrates a reasonable likelihood of prevailing in proving claims 1, 24, and 25 unpatentable under § 103 as obvious over Buruganahalli and Baehr.

V. CONCLUSION

Based on the arguments and evidence presented in the Petition, the Preliminary Response, the Preliminary Reply, and the Preliminary Sur-reply along with the accompanying exhibits, we determine that there is a reasonable likelihood Petitioner would prevail with respect to at least one claim challenged in the Petition. Hence, we institute an *inter partes* review of all challenged claims on all challenges included in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (noting that the language of 35 U.S.C. § 314(b) "indicates a binary choice—either institute review or don't"); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute as requiring "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition"). Additionally, we decline to exercise our discretion under § 314(a) and § 325(d) to deny institution.

At this preliminary stage, we have not made a final determination about the patentability of any challenged claim, the construction of any claim term, phrase, or limitation, or any other legal or factual issue.

90

IPR2022-00182
Patent 9,917,856 B2

VI. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 24, and 25 in the '856 patent is instituted on all challenges included in the Petition; and

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

91

Appx116

IPR2022-00182
Patent 9,917,856 B2

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92

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CERTIFICATE OF SERVICE

I hereby certify that on March 23, 2023, I electronically filed the foregoing with the United States Court of Appeals for the Federal Circuit by using the CM/ECF system, and that the following counsel of record was served on March 23, 2023, via overnight delivery by Federal Express:

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