

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PALO ALTO NETWORKS, INC.,
Petitioner,

v.

TAASERA LICENSING LLC,
Patent Owner.

IPR2023-00704
Patent 8,850,517 B2

Before JAMES P. CALVE, ARTHUR M. PESLAK, and
KRISTIL R. SAWERT, *Administrative Patent Judges*.

SAWERT, *Administrative Patent Judge*.

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

I. INTRODUCTION

Palo Alto Networks, Inc. (“Petitioner”) filed a petition to institute *inter partes* review of claims 1–24 of U.S. Patent No. 8,850,517 B2 (Ex. 1001, “the ’517 patent”). Paper 2 (“Pet.”). Taasera Licensing LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). On our authorization, Petitioner filed a Reply, Paper 7 (“Reply”), and Patent Owner filed a Sur-Reply, Paper 8 (“Sur-Reply”).

We have authority under 35 U.S.C. § 314 to determine whether to institute an *inter partes* review. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” If the Board institutes trial, it “will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

Applying those standards, and upon considering the Petition, the Preliminary Response, the Reply, the Sur-Reply, and the evidence of record, we determine the information presented shows a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the ’517 patent. Accordingly, we institute an *inter partes* review of all challenged claims (i.e., 1–24) of the ’517 patent, based on the grounds asserted in the Petition.

II. BACKGROUND

A. Related Matters

The parties identify the following district-court proceedings as related matters involving the '517 patent: *Taasera Licensing LLC v. Trend Micro Incorporated*, Case No. 2:21-cv-00441 (E.D. Tex.); *Taasera Licensing LLC v. Palo Alto Networks, Inc.*, Case No. 2:22-cv-00062 (E.D. Tex.); *In re: Taasera Licensing LLC, Patent Litigation*, Case No. 2:22-md-03042 (E.D. Tex.); *Trend Micro Inc. v. Taasera Licensing LLC*, Case No. 2:22-cv-00303 (E.D. Tex.); *Palo Alto Networks, Inc. v. Taasera Licensing LLC et al.*, Case No. 2:22-cv-00314 (E.D. Tex.); *Taasera Licensing LLC v. Musarubra US, LLC*, Case No. 2:22-cv-00427 (E.D. Tex.); *Taasera Licensing LLC v. CrowdStrike, Inc. et al.*, Case No. 2:22-cv-00468 (E.D. Tex.); and *Taasera Licensing LLC v. Palo Alto Networks, Inc.*, Case No. 2:23-cv-00113 (E.D. Tex.); *Trend Micro Incorporated et al. v. Taasera Licensing LLC*, Case No. 3:22-cv-00477 (N.D. Tex.); *Trend Micro, Inc. v. Taasera Licensing LLC*, Case No. 3:22-cv-00518 (N.D. Tex.); *Palo Alto Networks, Inc. v. Taasera Licensing LLC et al.*, No. 1:22-cv-02306 (S.D.N.Y.); *Taasera Licensing LLC v. CrowdStrike, Inc. et al.*, Case No. 6:22-cv-01094 (W.D. Tex.). Paper 9, 1–2 (Petitioner's Updated Mandatory Notice); Paper 10, 1–2 (Patent Owner's Updated Mandatory Notices).

In addition, Petitioner identifies the following Board proceeding as a related matter: *Trend Micro, Inc. v. Taasera Licensing LLC*, IPR2023-00798. Paper 9, 2. And Patent Owner identifies the following matter before the United States Court of Appeals for the Federal Circuit as a related matter: *Palo Alto Networks, Inc. v. Taasera Licensing, LLC et al.*, Appeal No. 2023-1736. Paper 10, 3.

B. Real Parties in Interest

Petitioner identifies Palo Alto Networks, Inc. as its real party in interest. Paper 9, 1. Patent Owner identifies Taasera Licensing LLC as its real party in interest. Paper 10, 2.

C. Overview of the '517 patent

The '517 patent, titled “Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation,” relates to “assessing the runtime risk of an application or device in a computer system using cognitive behavior recognition.” Ex. 1001, code (54), 1:7–10. The '517 patent states that “computer and cyber security has become increasingly important,” but that “[e]merging cyber threats, commonly referred to as advanced persistent threats (APT), often remain undetected using traditional security programs and approaches.” *Id.* at 1:14–29. According to the '517 patent, the disclosed system and method addresses “a need for a technical solution to properly detect and prevent attacks by advanced persistent threats” in computer devices “undetected using traditional security programs and approaches.” *Id.* 1:36–39.

Figure 1, reproduced below, is a block diagram of a system for assessing the runtime risk for an application or device. *Id.* at 2:16–18.

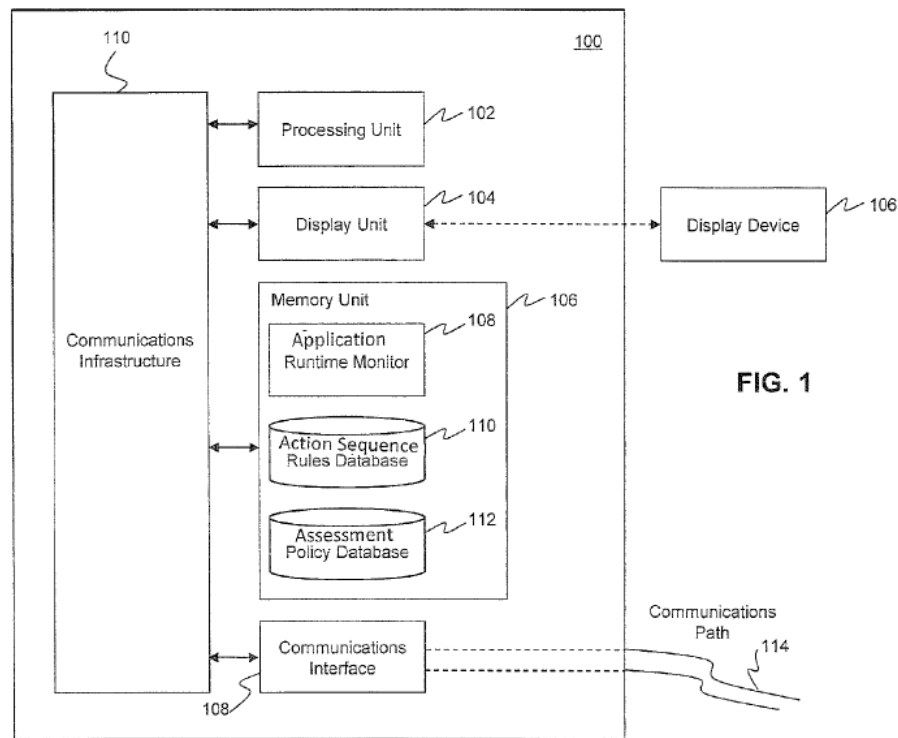


FIG. 1 is a block diagram of a system for assessing the runtime risk for an application or device according to the '517 patent.

As shown in Figure 1, computing system 100 includes a processing unit 102, display unit 104, memory unit 106, and communications interface 108 connected to a communications infrastructure 110. *Id.* at 2:55–65, 3:3–4, 3:21–22, 4:43–45. Memory unit 106 includes a runtime monitor 108, a rules database 110, and a policy database 112. *Id.* at 3:38–39.

Runtime monitor 108 “may be an application program” that is “configured to assess the runtime risk of an application (e.g., stored in the memory unit 106 and executed by the processing unit 102) or device (e.g., connected to the computing system 100 externally (e.g., via the communications interface 108) or internally (e.g., via the communications infrastructure 110).” *Id.* at 3:43–51. The runtime monitor may also be “configured to identify a behavior score for an action sequence of at least

two performed actions executed by (e.g., by components or programs included in) the computing system 100.” *Id.* at 3:51–55.

Rules database 110 stores a plurality of rules, where each rule identifies an “action sequence.” *Id.* at 4:12–14. The ’517 patent states that an action sequence “include[s] a sequence of at least two performed actions, wherein the performed actions may be one of a user action, an application action, and a system action.” *Id.* at 4:14–17. Policy database 112 stores a plurality of assessment policies, where each assessment policy includes “at least one rule of the plurality of rules stored in the rules database.” *Id.* at 4:17–21.

The ’517 patent describes a “user action” as any form of explicit input from a user (e.g., program launch, keyboard input, mouse click, touch on a touchscreen, etc.), an “application action” as any activity performed by the application (e.g., a start type, first time execution, fork process, etc.), and a “system action” as any operation performed by the computing system “on behalf or, or as a consequence of, an application or user action that changes the state of the computing system” (e.g., system file creation, system folder modification, registry modifications or additions, etc.). *Id.* at 6:56–7:26.

Figure 4, reproduced below, is a flow diagram of a method for assessing the runtime risk for an application or device. *Id.* at 8:56–60.

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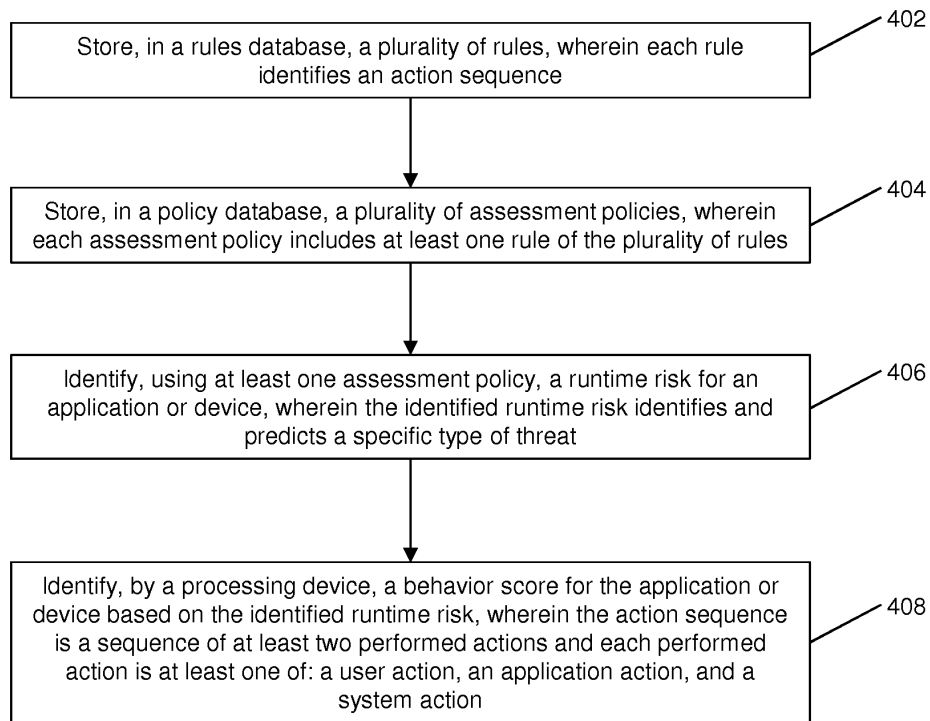


FIG. 4 is a flow diagram of a method for assessing the runtime risk for an application or device according to the '517 patent.

In steps 402 and 404, a plurality of rules is stored in the rules database and a plurality of assessment policies is stored in the policy database, respectively. *Id.* at 8:61–94. In step 406, the runtime monitor identifies a runtime risk (i.e., a specific type of threat) for an application or device “using at least one assessment policy.” *Id.* at 9:5–8. The '517 patent states that in one embodiment, runtime risk is identified “based on matching rules and probabilistic weights,” and, in another embodiment, runtime risk is identified “based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions.” *Id.* at 9:8–13. Finally, in step 408, the processing device identifies a behavior score for the application or device “based on the identified runtime risk.” *Id.* at 9:13–16.

D. The Challenged Claims

Petitioner challenges claims 1–24 of the ’517 patent. Pet. 3. Claim 1, reproduced below, is independent and illustrative of the subject matter recited in the challenged claims.

1. [pre] A method for assessing runtime risk for an application program that executes on a device, comprising:

[1a] storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence;

[1b] storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules;

[1c] identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application; and

[1d] identifying, by a runtime monitor including a processing device, a behavior score for the application program that executes on the device based on the identified runtime risk, wherein

[1e] the action sequence is a sequence of at least two performed actions, and

[1f] each performed action is at least one of: a user action, an application action, and a system action.

Ex. 1001, 9:64–10:17 (brackets and identifiers added). Claim 13, the only other independent claim of the ’517 patent, is similar to claim 1 but is directed to a system. *Id.* at 11:6–26.

E. Evidence

Petitioner submits evidence including:

Evidence	Exhibit No.
Declaration of Kevin Jeffay, Ph.D.	1003
U.S. Patent Appl. No. 2013/0254880 A1 (Sept. 26, 2013) (“Alperovitch”)	1004
U.S. Patent No. 9,117,075 B1 (Aug. 25, 2015) (“Yeh”)	1005
U.S. Patent No. 9,117,078 B1 (Aug. 25, 2015) (“Chien”)	1006

F. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–24	103(a) ¹	Alperovitch
1–24	103(a)	Alperovitch, Yeh
1–24	103(a)	Alperovitch, Chien
1–24	103(a)	Alperovitch, Yeh, Chien

Pet. 3. Patent Owner disputes Petitioner’s asserted grounds of unpatentability. *See generally* Prelim. Resp.

G. The Prior Art

We now provide brief summaries of the asserted references.

1. Alperovitch (Ex. 1004)

Alperovitch, titled “System and Method for Crowdsourcing of Mobile Application Reputations,” relates to systems and methods for “the effective

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Petitioner states that it “assumes that the Challenged Claims are entitled to a priority date no earlier than January 15, 2013.” Pet. 3. Patent Owner does not contest or comment on Petitioner’s asserted priority date. Because the priority date is before the effective date of the applicable AIA amendment, we refer to the pre-AIA version of 35 U.S.C. § 103. Our decision would be the same were we to apply the AIA version of the statute.

control and management of applications on mobile devices within computer and communication network environments.” Ex. 1004, code (54), ¶ 2.

Generally, in exemplary embodiments, the systems and methods “include modules for obtaining a collection of attributes of a mobile application, comparing one or more of the attributes with crowdsourced data associated with other mobile applications to determine one or more trustworthiness indicators, and calculating a reputation score based on the one or more trustworthiness indicators.” *Id.* ¶ 10.

Figure 1, reproduced below, is a block diagram of a system for crowdsourcing mobile application reputations according to Alperovitch. *Id.* ¶ 4.

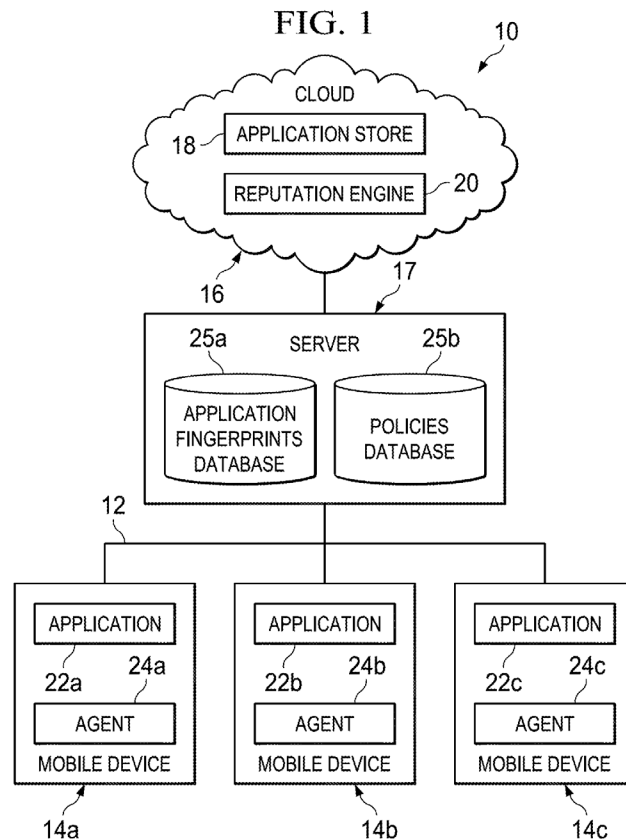


FIG. 1 is a block diagram of a system for crowdsourcing mobile application reputations according to one embodiment of Alperovitch.

As shown in Figure 1, system 10 includes a network 12 connecting one or more mobile devices 14a, 14b, and 14c (e.g., smartphones, e-book readers, laptops, etc.) with the cloud 16 through server 17. *Id.* ¶ 11. The mobile devices 14 may access mobile applications (i.e., “application software that runs on (or is capable of running on) mobile devices and performs specific tasks for the mobile device’s user”) from one or more application stores 18 located in the cloud. *Id.* ¶ 12.

The cloud also includes a reputation engine 20 “for collecting and assessing mobile application reputations,” which Alperovitch calls “reputation scores.” *Id.* ¶ 13. These “reputation scores” represent “a value (e.g., numeric, textual, pictorial, etc.) that denotes a relative level of trustworthiness of the mobile application on a spectrum (e.g., continuous or discrete) from benign (e.g., reputable) to malicious (e.g., non-reputable).” *Id.* According to Alperovitch, the reputation score “may indicate a probability that a mobile application is a malicious software”—in that, the lower the reputation score, the higher the probability the mobile application is malicious (and vice versa). *Id.*

Alperovitch teaches that, in one embodiment, the reputation score can be calculated using crowdsourced data. *Id.* ¶ 21. Specifically, “crowdsourced data may be used to analyze various attributes of the mobile application to determine trustworthiness indicators, and reputation scores may be calculated based on the trustworthiness indicators.” *Id.* These “trustworthiness indicators” include: prevalence of the application, reputation of the application store from which the application was downloaded, reputation of the vendor signing the application, predefined

combination of capabilities of the application, propagation factor of the application, and origination of application. *Id.*

As further shown in Figure 1, mobile devices 14a–c also include one or more “agents” 24a–c that “monitor behavior and activities of any one or more mobile applications (e.g., 22a–c) on respective mobile devices 14a–c.” *Id.* ¶ 14. The agents “may also manage activities of mobile applications 22a–c, for example, by preventing execution of one or more applications based on the respective reputation scores.” *Id.*

Server 17 includes “application fingerprints database” 25a and “policies database 25b.” *Id.* ¶ 18. Alperovitch states that the reputation engine 20 has access to both the application fingerprints database and the policies database. *Id.* The reputation engine uses the application fingerprints database to determine a reputation score for a mobile application, and uses the policies database “to identify a suitable action that may be taken with respect to the mobile application based on its reputation score.” *Id.*

2. *Yeh (Ex. 1005)*

Yeh, titled “Early Malware Detection by Cross-Referencing Host Data,” relates to the detection of malware by “cross-referencing host data on a trusted enterprise host computer to compare to a suspect computer.” Ex. 1005, code (54), 1:6–9. In one embodiment, “anomaly monitoring software on the user computer detects activities that, while not malware, are suspect.” *Id.* at 2:4–6. Suspect activities “are compared against a rules database on the user computer.” *Id.* at 2:6–7. “If the behavior is unresolved, the behaviors are compared against any of a number of white lists and known good behavior on the trusted computer to determine if the activity

matches that of the trusted computer.” *Id.* at 2:7–10. Yeh discloses that “[i]f there is no match, then a malware alert may be generated.” *Id.* at 2:10–11.

3. *Chien (Ex. 1006)*

Chien, titled “Malware Behavior Analysis and Policy Creation,” relates to “software and computer systems for creating policies for malware detection and behavior analysis systems.” Ex. 1006, code (54), 1:8–10. Chien states that, when a sample of malicious computer code or malware is executed in a computer system that is connected to a malware prevention system, “[e]vent data relating to multiple events caused by the malicious code executing on the computer system are captured and stored.” *Id.* at 1:47–54. “The event data is configured using a specific property, such as process, that facilitates malware behavior analysis,” and “[a] behavior list is created utilizing the multiple events and associated event data.” *Id.* at 1:54–57. Chien states that “[t]he behavior list is then used, together with data in a malware behavior database, to derive a policy for use in a malware prevention system.” *Id.* at 1:47–59.

III. DISCRETION UNDER 35 U.S.C. § 314(a)

Patent Owner argues that we should exercise our discretion to deny institution under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB 2020) (precedential) (“*Fintiv*”). Prelim. Resp. 28–36; Sur-Reply 1. Petitioner opposes. Pet. 66; Reply 1.

Our analysis under *Fintiv* is guided by the USPTO Director’s Memorandum issued on June 21, 2022, titled “Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation” (“Director’s Memo”). Under the Director’s Memo, we “will not discretionarily deny institution . . . where a petitioner presents a

[*Sotera*] stipulation.” Director’s Memo at 3 (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A)). Petitioner stipulates here that it “will not pursue in parallel district court proceedings the same grounds as in the Petition or any grounds that could have reasonably been raised in the petition.” Pet. 66; *see also* Reply 1 (noting that “[t]he Petition’s broader *Sotera*-type stipulation additionally includes ‘or any grounds that could have reasonably been raised in the petition.’” (emphasis omitted)). Thus, we decline to exercise our discretion under 35 U.S.C. § 314(a) to deny institution of trial.

IV. PATENTABILITY ANALYSIS

Petitioner contends that the claims of the ’517 patent are unpatentable under 35 U.S.C. § 103 as obvious over Alperovitch, either alone or in combination with Yeh and/or Chien. Pet. 18–66. A claim is unpatentable as obvious under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. § 103(a) (2006); *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any objective indicia of nonobviousness.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

² Patent Owner does not presently assert objective indicia supporting nonobviousness of the challenged claims. *See generally* Prelim. Resp.; Sur-Reply.

An obviousness determination requires finding a reason to combine accompanied by a reasonable expectation of achieving what is claimed in the challenged patent. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 419–20.

In an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). Petitioner ultimately bears the burden of persuasion to prove unpatentability of each challenged claim by a preponderance of the evidence. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition and Patent Owner’s Preliminary Response shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

We organize our patentability analysis into three sections. First, we address the level of ordinary skill in the art. Second, we address claim construction. And third, taking account of the information presented, we consider whether the Petition satisfies the threshold requirement for instituting an *inter partes* review under 35 U.S.C. § 314(a).

A. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. In assessing the level of ordinary skill in the art, various factors may be considered, including (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology, and (6) educational level of workers active in the field. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983). Not all of these factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

Relying on the declaration testimony of Dr. Jeffay, Petitioner contends that an ordinarily skilled artisan for the '517 patent “would have had a bachelor’s degree in computer science or computer engineering, or an equivalent field and at least two to three years of experience in computer and network security.” Pet. 3 (citing Ex. 1003 ¶ 22). Petitioner also contends that “[s]omeone with less or different technical education but more relevant practical experience, or more relevant education but less practical experience, could also be considered” as having ordinary skill in the art. *Id.* at 3–4 (citing Ex. 1003 ¶ 22). Patent Owner states that it “utilizes Petitioner’s proposed level of skill in the art” at this stage of the proceeding. Prelim. Resp. 14 (citing Pet. 3–4).

Based on this record, we adopt Petitioner’s articulation of the level of ordinary skill in the art, which appears to be consistent with the ’517 patent and the asserted prior art, and we apply it in our obviousness evaluations below. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art).

B. Claim Construction

Next, we turn to claim construction. In interpreting the claims of the ’517 patent, we “us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b).” 37 C.F.R. § 42.100(b). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (*en banc*).

Petitioner states that “for the purposes of this Petition, the Board does not need to explicitly construe any claim term, and there are no known claim construction disputes that affect the outcome of this Petition.” Pet. 10. Patent Owner states that “claim construction is not required to resolve any issues.” Prelim. Resp. 13–14.

Having considered the record, we determine that no express claim construction is necessary for this Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). Any final written decision entered in this case may include a final claim construction

based on the full trial record that differs from any discussion of claim scope provided in our analysis below.

C. Alleged Grounds of Unpatentability

We now consider whether the Petition satisfies the threshold requirement for instituting an *inter partes* review under 35 U.S.C. § 314(a) by addressing each of Petitioner’s asserted grounds of unpatentability, below.

1. Alleged obviousness over Alperovitch

Petitioner argues that claims 1–24 of the ’517 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Alperovitch. Pet. 18–59. Patent Owner opposes. Prelim. Resp. 17–26. Having considered the arguments and evidence before us, we find that the record establishes a reasonable likelihood that Petitioner would prevail on this asserted ground of unpatentability.

Taking claim 1 as illustrative, Petitioner provides a limitation-by-limitation analysis alleging that Alperovitch teaches or suggests each and every limitation of that claim. Pet. 18–31. We have reviewed Petitioner’s contentions and supporting evidence regarding the currently undisputed limitations of claim 1 (i.e., the preamble and limitation [1f]), and are satisfied that the record establishes sufficiently for institution that Alperovitch teaches or suggests these limitations. We address the disputed limitations of claim 1 below.

a) Limitations [1a] and [1e]

Taken together, limitations [1a] and [1e] recite “storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence . . . wherein the action sequence is a sequence of at least two performed

actions.” Ex. 1001, 9:66–67 (limitation [1a]), 10:13–14 (limitation [1e]). Petitioner contends that “Alperovitch discloses, teaches, or suggests” these limitations. Pet. 19–23, 30.

As to the claimed “rules database” storing “a plurality of rules,” Petitioner contends that Alperovitch’s “application manifest database” is a rules database that stores “application behaviors.” *Id.* at 19–20 (citing Ex. 1004 ¶ 55; Ex. 1003 ¶ 63). Petitioner contends that Alperovitch’s application behaviors “operate equivalent” to the claimed “rules” because Alperovitch teaches that the application behaviors “may be monitored” and the “reputation engine analyzes data against the monitored application behaviors to determine a reputation score.” *Id.* 20–21 (citing Ex. 1004 ¶¶ 54–55; Ex. 1003 ¶ 64; Ex. 1005, 5:47–49); *see also id.* at 21 (stating that “application behaviors that have been identified for monitoring and are thus monitored for are equivalent to rules in the ’517 patent”).

Next, as to “each rule identif[ying] an action sequence . . . of at least two performed actions”—further recited in claim 1—Petitioner contends that Alperovitch’s application behaviors also identify an action sequence comprising at least two performed actions. *Id.* at 21. Petitioner points to Alperovitch’s exemplary scenario of a mobile application that turns on a camera and microphone without authorization as an application behavior or “rule” that identifies an action sequence “of at least two performed actions”—i.e., the camera turning on and then the microphone turning on. *Id.* (citing Ex. 1004 ¶ 13; Ex. 1003 ¶ 65). Petitioner contends that an ordinarily skilled artisan “would have understood that application behaviors are action sequences because the ’517 patent discloses that ‘the action sequence is a sequence of at least two performed actions.’” *Id.* at 22 (citing

Ex. 1001, code (57), 1:56–57, 4:12–17, 7:30–32; Ex. 1003 ¶ 67); *see also id.* at 30 (citing Ex. 1003 ¶¶ 80–82).

Patent Owner, in response, argues that Alperovitch does not render the claim language obvious. Prelim. Resp. 17–19. Patent Owner argues that Alperovitch’s application manifest database is not a “rules database” as claimed because “it merely aggregates application information.” *Id.* at 17–18 (citing Ex. 1004 ¶¶ 42, 54). Patent Owner also argues that “Alperovitch’s database does not identify that there are rules that correspond with and identify specific action sequences, as required by the claim.” *Id.* at 18. In this regard, Patent Owner argues that “the individual application actions of Alperovitch are the entries of the database themselves” and not “rules that identify action sequences.” *Id.* Finally, as to Alperovitch’s exemplary scenario, Patent Owner argues that nothing in Alperovitch teaches or suggests one rule identifying the two actions of turning on the camera and turning on the microphone. *Id.* at 19 (citing Ex. 1003 ¶ 13).

We have considered the parties’ respective arguments and evidence, and determine that Petitioner has sufficiently shown for institution that Alperovitch teaches or suggests limitation [1a]. As an initial matter, we agree with Petitioner, on this record and for institution, that Alperovitch’s “application behaviors” satisfy the claimed “action sequence” (limitation [1a]) that is “a sequence of at least two performed actions” (limitation [1e]). As Petitioner explains, Alperovitch provides an exemplary scenario where a mobile application turns on a camera and a microphone without authorization. Ex. 1004 ¶ 13; Pet. 22–23. We agree with Petitioner that these two actions, which are performed by the application, constitute “an action sequence” that “is a sequence of two performed actions” as claimed.

Turning to the portion of limitation [1a] that recites “each rule identifies an action sequence,” we perceive the dispute between the parties to be whether Alperovitch’s application behaviors satisfy a “rule” as claimed. Petitioner contends that the application behaviors operate as “rules identif[ying] action sequences” because Alperovitch teaches that the application behaviors “may be monitored” and because application behaviors include specific actions taken by the application, *e.g.*, turning on a camera and a microphone without authorization. *See* Pet. 19–23. Patent Owner, on the other hand, argues that Alperovitch’s application behaviors are merely individual actions performed by the application, and that nothing in Alperovitch teaches or suggests “rules” as claimed. *See* Prelim. Resp. 18 (arguing that “the individual application actions of Alperovitch are the entries of the database themselves (instead of rules that identify action sequences)”).

Neither party sets forth a construction for “rule.” Moreover, the ’517 patent does not appear to set forth a definition for “rule” or provide examples of a rule. The ’517 patent states that the “rule identifies an action sequence.” *See, e.g.*, Ex. 1001, 1:62–64 (“The rules database is configured to store a plurality of rules, wherein each rule identifies an action sequence.”); *see also id.* at 4:12–14, 6:23–24, 8:61–63. On this record, therefore, we determine that Petitioner’s argument that Alperovitch’s application behaviors operate as a “rule” because they identify an action sequence of two performed actions, *e.g.*, turn on a camera, turn on a microphone, is sufficient for moving forward with trial.

b) Limitation [1b]

Limitation [1b] recites “storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules.” Ex. 1001, 10:1–3. Petitioner contends that “Alperovitch discloses, teaches, or suggests” these limitations because Alperovitch discloses agents that access policies on mobile devices to determine if mobile applications on those devices violate any policy, and because Alperovitch teaches that those policies are stored in a policy database. Pet. 23–24 (citing Ex. 1004 ¶¶ 14, 18, 65; Ex. 1003 ¶ 69). Petitioner contends that an ordinarily skilled artisan would have understood Alperovitch’s exemplary scenario “as an example of an assessment policy to determine if a mobile application is malicious and it includes the rule of whether a camera and a microphone (or other recording device) of a mobile device are automatically, without authorization, turned on.” *Id.* at 25 (citing Ex. 1004 ¶ 13; Ex. 1003 ¶ 71).

Patent Owner, in response, argues that Alperovitch does not render limitation [1b] obvious because Alperovitch does not disclose, teach, or suggest limitation [1a]. Prelim. Resp. 19–20. As explained above, however, we find for institution that Petitioner has set forth a sufficient showing that Alperovitch teaches or suggests the claimed rules. Patent Owner also argues that, in Alperovitch, “any risk or ‘reputation score’ is based on the application as a whole, not on a specific action sequence, as in the claimed limitation.” *Id.* at 20. Patent Owner, however, provides no support for this interpretation of Alperovitch, and we do not read Alperovitch so narrowly on this record. Alperovitch expressly teaches that a mobile application that

turns on a camera and microphone without authorization “may be deemed to be malicious.” Ex. 1004 ¶ 13.

Finally, Patent Owner argues that the ’517 patent “is clear about the relationship between rules, policies, and a policy database.” Prelim. Resp. 20 (quoting Ex. 1001, 6:14–19, 8:10–12). Patent Owner’s argument—which merely block-quotes certain passages of the ’517 patent—lacks sufficient detail and explanation.³ For these reasons, we determine that Petitioner has sufficiently shown for institution that Alperovitch teaches or suggests limitation [1b].

c) Limitation [1c]

Limitation [1c] recites “identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application.” Ex. 1001, 10:4–8. Petitioner contends that Alperovitch “discloses, teaches, or suggests” this limitation. Pet. 25–27. In particular, Petitioner maps Alperovitch’s “reputation score” to the claimed “runtime risk,” and contends that Alperovitch’s method updates the reputation score when an identified action sequence indicates a risk or threat. *Id.* at 26 (citing Ex. 1004 ¶¶ 30, 44; Ex. 1003 ¶ 73). Returning to the exemplary scenario in Alperovitch, Petitioner contends that the “identified runtime risk” is “a mobile application may be deemed to be malicious, and thus, have a low reputation score.” *Id.* at 27 (citing Ex. 1003 ¶ 74). Petitioner contends that the reputation score “indicates a risk or threat of the identified action sequence of the application (i.e., because a mobile

³ The parties are encouraged to address the meaning of, *e.g.*, “rules” and “policies” in further briefing.

application automatically, and without authorization, turns on a camera and a microphone (or other recording device)).” *Id.*

We determine that Petitioner has sufficiently shown for institution that Alperovitch teaches or suggests limitation [1c]. Patent Owner argues that Alperovitch does not render limitation [1c] obvious for the same reasons Alperovitch does not render limitation [1b] obvious. Prelim. Resp. 21–22. As explained above, however, we do not find Patent Owner’s arguments persuasive on this record.

d) Limitation [1d]

The final disputed limitation—limitation [1d]—recites “identifying, by a runtime monitor including a processing device, a behavior score for the application program that executes on the device based on the identified runtime risk.” Ex. 1001, 10:9–12. Petitioner contends that Alperovitch “discloses, teaches, or suggests” this limitation. Pet. 27–29. In particular, Petitioner contends that Alperovitch’s reputation engine and agent constitute “a runtime monitor including a processing device.” *Id.* at 27–28 (citing Ex. 1004 ¶¶ 14, 40, 45, 51, 54; Ex. 1003 ¶¶ 76–77). Petitioner contends that this “runtime monitor” “identifies a behavior score for the application program that executes on the device (e.g., a risk category denoted by color) based on the identified runtime risk (i.e., reputation score of the mobile application).” *Id.* at 29 (citing Ex. 1003 ¶ 78).

We determine that Petitioner has sufficiently shown for institution that Alperovitch teaches or suggests limitation [1d]. Patent Owner argues that Alperovitch does not render limitation [1d] obvious for the same reasons Alperovitch does not render limitation [1c] obvious. Prelim. Resp. 23–25.

As explained above, we do not find Patent Owner's arguments persuasive on this record.

e) Claims 2–24

We have reviewed Petitioner's contentions that Alperovitch teaches the limitations recited in claims 2–24. Pet. 32–59. Patent Owner's arguments about dependent claims 2–12, and independent claim 13 and dependent claims 14–24, rely on its arguments as to claim 1. *See* Prelim. Resp. 25–26 (arguing that “Claims 2–12 are not obvious over Alperovitch for at least the same reasons as Claim 1” and “Claims 13–24 are not obvious over Alperovitch for at least the same reasons as Claims 1–12, respectively”). On this record and for institution, we find that Petitioner has shown sufficiently that Alperovitch teaches or suggests the limitations of these claims.

f) Summary

Accordingly, for the reasons set forth above and based on the totality of the evidence currently in the record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claims 1–24 of the '517 patent as obvious over Alperovitch.

2. Alleged obviousness over Alperovitch in view of Yeh, Alperovitch in view of Chien, and Alperovitch in view of Yeh and Chien

Petitioner contends that claims 1–24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Alperovitch in view of Yeh, Alperovitch in view of Chien, and Alperovitch in view of Yeh and Chien. Pet. 60–65. In light of 35 U.S.C. § 314(a), we institute *inter partes* review of claims 1–24 on these grounds of unpatentability. Patent Owner's arguments about these grounds appear to be substantially similar to or the same as those presented with respect to obviousness over Alperovitch alone, and are not persuasive on this

record for the reasons discussed above. *See* Prelim. Resp. 43–46. Given the fact-intensive nature of the parties’ dispute, we will evaluate these grounds on the record that is developed during trial.

V. CONCLUSION

After considering the arguments presented in the parties’ respective papers and the evidence of record, we determine that Petitioner has demonstrated at least a reasonable likelihood of success in proving that at least one claim of the ’517 patent is unpatentable. *See* CONSOL. OFFICE PATENT TRIAL PRACTICE GUIDE, 53 (2019) (“The ‘reasonable likelihood’ standard is a somewhat flexible standard that allows the Board room to exercise judgment.”).⁴ Thus, we institute an *inter partes* review of all challenged claims (i.e., claims 1–24) on all grounds set forth in the Petition. Our determinations at this stage of the proceeding are based on the evidentiary record currently before us.

This decision to institute trial is not a final decision as to patentability of any claim for which we have instituted an *inter partes* review. *See TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that “there is a significant difference between a petitioner’s burden to establish a ‘reasonable likelihood of success’ at institution, and actually proving invalidity by a preponderance of the evidence at trial”). We will base any final decision on the full record developed during trial.

VI. ORDER

In consideration of the foregoing, it is hereby:

⁴ Available at: <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=TrialsPracticeGuideConsolidated>.

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–24 of the '517 patent on the unpatentability grounds asserted in the Petition; and

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

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