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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

AIRE TECHNOLOGY LIMITED,
Patent Owner.

IPR2022-01135
Patent 8,205,249 B2

Before JEFFREY S. SMITH, BRIAN J. McNAMARA, and MIRIAM L. QUINN, *Administrative Patent Judges.*

SMITH, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background and Summary

Petitioner, Apple Inc., filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–12 of U.S. Patent No. 8,205,249 B2 (Ex. 1001, "the '249 patent") pursuant to 35 U.S.C. § 311(a). Patent Owner, Aire Technology Ltd., filed a Preliminary Response (Paper 6, "Prelim. Resp.") pursuant to 35 U.S.C. § 313. With our email authorization of October 13, 2022 (Ex. 1024), Petitioner filed a Reply (Paper 9, "Reply") and Patent Owner filed a Sur-Reply (Paper 10, "Sur-Reply") directed solely to an issue regarding whether we should exercise our discretion to deny the Petition under 35 U.S.C. § 314(a).

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and preliminary response "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." For the reasons that follow, we institute an *inter partes* review as to claims 1–12 of the '249 patent on the ground of unpatentability asserted in the Petition.

II. REAL PARTIES-IN-INTEREST

Petitioner identifies itself (Apple, Inc.) as its sole real party-in-interest. Pet. 68. Patent Owner identifies itself (Aire Technology Ltd.) as its sole real party-in-interest. Paper 4, 2.

III. RELATED MATTERS

The Petition states that the '249 patent is the subject of the following proceedings:

> *Aire Technology Ltd. v. Google LLC*, No. 6-21-01104, W.D. Tex., filed Oct. 25, 2021;

Aire Technology Ltd. v. Apple, Inc., No. 6-21-01101, W.D. Tex., filed Oct. 22, 2021 ("the Apple litigation");

Aire Technology Ltd. v. Samsung Electronics co, Ltd. et al., No. 6-21-00955 W. D. Tex., filed Sep. 15, 2021;

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00875 (PTAB, Apr. 22, 2022)

Pet. 68. Patent Owner identifies the following additional proceedings as "related current and/or former proceedings involving the patent at issue." Paper 4, 2–3.

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00874 (PTAB April 22, 2022)

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00876 (PTAB May 2, 2022);

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00877 (PTAB May 2, 2022);

Apple Inc. v. Aire Technology Ltd., IPR2022-01136 (PTAB June 15, 2022);

Apple Inc. v. Aire Technology Ltd., IPR2022-01137 (PTAB June 15, 2022).

IV. EXERCISE OF DISCRETION

In the Preliminary Response, Patent Owner contends that we should exercise our discretion to deny the Petition in favor of the parallel Apple litigation identified above taking place in the U.S District Court for the Western District of Texas ("the Texas court"). Prelim. Resp. 1–10. The Board has held that the advanced state of a parallel district court action is a factor that may weigh in favor of denying a petition under § 314(a). *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20

(PTAB Sept. 12, 2018) (precedential); Trial Practice Guide, 58 & n.2. We consider the following factors to assess "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":

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding 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*"). In evaluating these factors, we "take[] a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* at 6. We consider each of these factors below.

On June 21, 2022, the Director of the USPTO issued several clarifications concerning the application of the *Fintiv* Factors. *See Interim Procedure For Discretionary Denials In AIA Post-Grant Proceedings With Parallel District Court Litigation,* issued June 21, 2022 ("Guidance Memo)[1]. The Director's memo states that "the precedential impact of *Fintiv* is limited to the facts of that case." Guidance Memo 2. Under the Guidance Memo

[1] Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

"the PTAB will not rely on the *Fintiv* factors to discretionarily deny institution in view of parallel district court litigation where a petition presents compelling evidence of unpatentability." Guidance Memo 2.

> [C]ompelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel. Compelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence."

Guidance Memo 4.

> The Guidance memo further states,
>
> [c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.

Guidance Memo 7–8. *See Sotera Wireless, Inc. v. Masimo Corp.,* IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to§ II.A).

> The Guidance memo also states,
>
> when considering the proximity of the district court's trial date to the date when the PTAB final written decision will be due, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides.

Guidance Memo 8–9[2]. With these factors and guidance in mind, we consider the parties' contentions.

As to factors 1 and 2, Patent Owner contends that there is unlikely to be a stay, that a trial in the Apple litigation is scheduled to occur before a final decision will issue in this proceeding, and that the Texas court does not

[2] *See* https://www.uscourts.gov/statistics-reports/analysis-reports/federal-court-management-statistics.

move a trial date, except in extreme situations. Prelim. Resp. 3–6, Sur-reply 1–2. Petitioner contends that generalized evidence that the Texas court denies stays is a neutral factor as to this particular case, and that, although the scheduled trial date is November 6, 2023, statistics indicate that trial is more likely to occur late in February 2024, i.e., after a final decision in this proceeding. Reply 1–2. Petitioner further notes that, even if a trial occurs on the scheduled date, the due date for a final decision in this proceeding is sufficiently close in time as to disfavor denial of institution. *Id.* at 2. Under these circumstances, we find that factors 1 and 2 do not support exercising discretion to deny institution.

As to factors 3 and 4, Patent Owner argues that there is a significant overlap in the substance of the proceedings and that before a decision on institution, the parties will have invested resources to complete claim construction briefing, exchange infringement and invalidity contentions, and that discovery will be underway. Prelim. Resp. 6–9, Sur-reply 3–5. Noting (i) that the Texas court has already delayed a *Markman* claim construction hearing until May 16, 2023, i.e., more than four months after the due date of a decision on institution in this proceeding, and (ii) that fact discovery and expert discovery in the Apple litigation continue for two months and seven months, respectively, after the due date for an institution decision, Petitioner contends that the lack of substantial investment in the Texas litigation weighs against denial of institution. Reply 2–3. As to overlapping issues, Petitioner stipulates that "it will not pursue in the parallel district court proceeding the prior art obviousness combinations on which trial is instituted for the claims on which trial is instituted. In *Sand*, a nearly identical stipulation was found to effectively address the risk of duplicative efforts." Reply 3–4 (citing *Sand Revolution II, LLC v. Continental*

Intermodal Group Trucking LLC, IPR201901393, Paper 24 at 11–12 (June 16, 2020) (informative) ("*Sand*")). Patent Owner asserts that Petitioner's "limited stipulation is not 'nearly identical' to the stipulation in *Sand*," because it fails to stipulate that Petitioner "would not pursue any ground raised or that could have been reasonably raised in an IPR, i.e., any ground that could be raised under §§ 102 or 103 on the basis of prior art patents or printed publications." Sur-reply 4 (citing *Sand* at 12 n.5). In *Sand*, however, although the panel's footnote stated that a broader stipulation would better address concerns, the panel found Petitioner's stipulation that it would not pursue in district court litigation the same grounds as those asserted in the IPR "mitigates to some degree the concerns of duplicative efforts" and 'weighs marginally in favor of not exercising discretion to deny institution." *Sand* at 12. In these circumstances, we find that the investment in invalidity issues in the Apple litigation and Petitioner's stipulation do not support exercising discretion to deny institution. *See Sand* at 10–12.

As to factor 5, it is undisputed that Petitioner is a defendant in the Apple litigation. But this factor alone does not outweigh the other factors that thus far do not support exercising discretion to deny institution. Further as to factor 6, and as discussed in detail below, at this stage of the proceeding, we find that Petitioner has shown that at least some of the '249 patent claims at issue recite well-known and obvious methods for secure authentication of a user of a portable data carrier. Patent Owner acknowledges that its Preliminary Response does not address the merits of Petitioner's challenges. Prelim. Resp. 9.

Having weighed the factors above, including the relative timing of the proceedings, the amount of effort that has been and is yet to be expended in the Apple litigation and in this proceeding, Petitioner's stipulation, and the

relative merits of Petitioner's unrebutted challenges, we find that, taken as a whole, the factors do not favor exercising discretion to deny institution. In consideration of the above, we decline to exercise discretion to deny institution.

V. THE '249 PATENT

The '249 patent generally relates to "secure authentication of a user of a portable data carrier communicating with a terminal." Ex. 1001, 1:9–10. A user uses the portable data carrier to perform a secure electronic transaction with the terminal. *Id.* at 3:3–9, Abstract. Fig. 1 of the '249 patent, shown below, illustrates the portable data carrier and the terminal.

Fig. 1

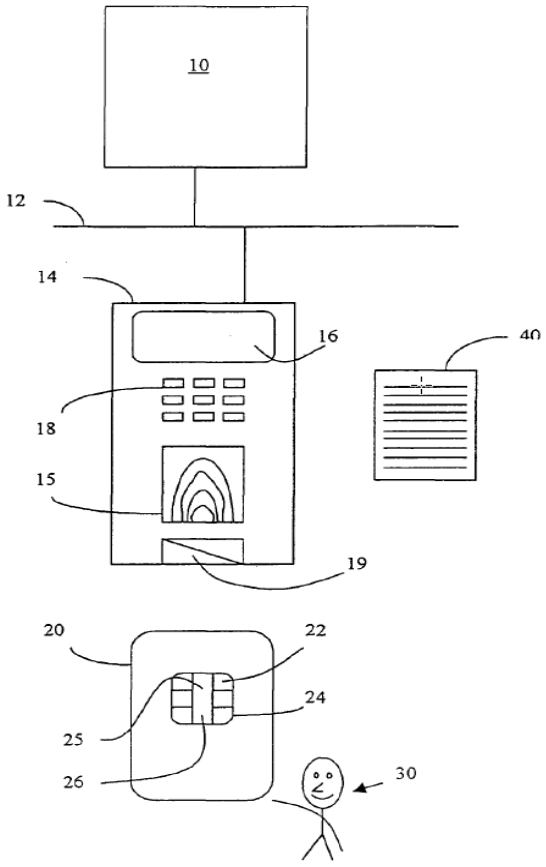

Figure 1 above illustrates a structure of a transaction system for effecting a secure electronic transaction. Ex. 1001, 3:17–18. Data network

12 exchanges data between terminal 14 and background system 10. *Id*. at 3:42–43. Terminal 14 includes display screen 16 and input means 18. *Id*. at 3:46–49. Terminal 14 includes interface 19 for communicating with portable data carrier 20. Terminal 14 includes sensor device 15 for detecting a biometric feature such as a fingerprint of user 30. *Id*. at 3:57–61.

The '249 patent explains that the "portable data carrier 20 is further set up to perform … a plurality of different quality user authentication methods." Ex. 1001, 3:22–26. For example, the portable data carrier "expediently supports at least one knowledge-based authentication method, e.g., a PIN check, and at least one biometric method." *Id*. at 3:26–28. The '249 patent notes that the "biometric method inherently constitutes the higher-quality one here, since it presupposes the personal presence of the user 30; this is not ensured in the knowledge-based method since the knowledge can have been acquired by an unauthorized user." *Id*. at 3:29–34.

When performing a secure electronic transaction, the portable data carrier receives either the PIN or biometric, e.g., fingerprint, input by the user and either "checks the transmitted PIN" or "compares the received extracted [fingerprint] features with the reference features stored in the storage means and checks whether a sufficient match is present." Ex. 1001, 4:19–64. If the PIN or fingerprint is a match with the stored values, the portable data carrier "confirms the correctness to the terminal." *Id*. at 4:27–28, 4:64–67. Then, the portable data carrier "perform[s] the security-establishing operation, i.e. the digital signature." *Id*. at 4:30–32, 5:1–6. The portable data carrier also "forms quality information," where the "quality information is about the quality of the previously performed user authentication." *Id*. at 5:15–17, 5:39–41. Then, a "security message

consisting of digital signature and quality information is sent by the portable data carrier 20 back to the terminal 14." *Id*. at 5:21–23.

VI. ILLUSTRATIVE CLAIM

Challenged claim 1 of the '249 patent recites:

> 1. A method for effecting a secure electronic transaction on a terminal using a portable data carrier arranged to perform different quality user authentication methods, wherein the portable data carrier performs a user authentication using one of said different user authentication methods, the portable data carrier confirms the proof of authentication to the terminal, and the portable data carrier then performs a security establishing operation within the electronic transaction, comprising the steps of creating authentication quality information by the portable data carrier about said user authentication method used and attaching said authentication quality information to the result of the security-establishing operation, wherein the difference in quality of said user authentication methods varies between an inherently relatively lower quality and an inherently relatively higher quality from a security perspective.

VII. ASSERTED GROUNDS

Petitioner asserts that claims 1–12 of the '249 patent are unpatentable on the following ground.

Claim(s) Challenged	35 U.S.C. §[3]	Reference(s)/Basis
1–12	103(a)	Burger[4], Cheng[5]

[3] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. § 103. Because the '249 patent has an effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA version of § 103.
[4] U.S. Patent No. 7,080,037 B2; iss. July 18, 2006 (Ex. 1005).
[5] U.S. Publication No. 2004/0039909 A1; pub. Feb. 26, 2004 (Ex. 1006).

VIII. LEVEL OF ORDINARY SKILL

Petitioner identifies a person of ordinary skill as someone knowledgeable and familiar with the secure electronic transaction arts. Pet. 13. Petitioner states that such a person "would have at least a four-year degree in electrical engineering, computer engineering, computer science, or a related field and two years of relevant experience in computer security, and developing, implementing, or deploying portable devices on systems connected to computer networks. A Master's or Ph.D. degree in a relevant field may substitute for some work experience and greater experience might substitute for a four-year degree." *Id.* Patent Owner does not address the level of ordinary skill. *See generally,* Prelim. Resp,

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

As Petitioner's description of a person of ordinary skill appears commensurate with the subject matter before us, we apply Petitioner's definition for purposes of this Decision.

IX. CLAIM CONSTRUCTION

We interpret claim terms using "the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). In this context, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining

the claim language itself, the written description, and 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). Extrinsic evidence is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (citations omitted).

We construe only those claim terms that require analysis to determine whether to institute inter partes review. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy"). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner acknowledges that in parallel district court litigation, it has proposed the term "an inherently relatively lower quality and an inherently relatively higher quality from a security perspective" recited in claims 1 and 10 be construed as indefinite. Pet. 15. Noting that in the district court, Patent Owner asserted no construction is necessary, Petitioner adopts Patent Owner's district court proposed construction for purposes of this proceeding. *Id*.

For purposes of this Decision, we agree that no construction is necessary, as the plain and ordinary meaning of "an inherently relatively lower quality and an inherently relatively higher quality from a security perspective" is ascertainable in the context of the claims. *See* Section X *infra.*

X. ANALYSIS

A. Legal Standards

"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")); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

A claim is unpatentable under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness, i.e., secondary considerations.[6] *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences

[6] The parties do not direct us to any objective evidence of non-obviousness at this stage of the proceeding.

and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418.

Additionally, the obviousness inquiry typically requires an analysis of "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")). Furthermore, Petitioner does not satisfy its burden of proving obviousness by employing "mere conclusory statements," but "must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

B. Claims 1–12 As Obvious Over Burger and Cheng

1. Burger – Exhibit 1005

Burger describes a "hand-held portable electronic authorization device" (called a Pocket Vault) that is used to carry out electronic financial transactions with a terminal such as a point-of-sale or commercial interface station. Ex. 1005, 1:17–19, 8:38–47, 2:42–50. The Pocket Vault stores electronic versions of the contents of a user's wallet, such as credit cards, driver's license, library card, and frequent flyer card. *Id*. at 11:37–47. When the Pocket Vault is powered on and prior to any transaction, Pocket Vault authenticates the holder of the device using one or more of a plurality of different authentication methods. Ex. 1005, 12:6–25, 22:36–52. For example, the Pocket Vault may perform an "analysis of a biometric feature of the individual attempting use of the device (e.g., a fingerprint scan, retina scan, a speech pattern analysis, keystroke rhythm, etc.)." *Id*. at 12:9–16, 19:41–53, 17:50–67. "Alternatively or additionally, a personal identification

(PIN) code may be entered by the holder to verify the holder's identity." *Id.* at 12:16–18. After authentication, the Pocket Vault transmits an encrypted message, including the Pocket Vault ID, to the commercial interface station. *Id.* at 23:13–19.

The holder may then choose to "invoke a wireless transaction" with the interface station. Ex. 1005, 23:65–24:6, 29:40–43, 30:6–21, 2:42–50. Burger explains that when the Pocket Vault "communicate[s]" with the commercial interface station as part of the wireless transaction, it performs PKI-based security establishing operations "well known in the art" to secure the communications. *Id.* at 55:29–35, 12:37–51.

2. Cheng – Exhibit 1006

Cheng describes a "portable authentication device" carried by an authorizee and configured for use in electronic transactions, such as "transactions through a bank machine." Ex. 1006 ¶¶ 10, 31, 39. The portable authentication device is configured to authenticate the holder of the device through a variety of authentication methods (called "authentication factors") performed on the device, including non-biometric factors such as a PIN code or a password, and biometric factors such as a fingerprint or facial recognition. *Id.* ¶¶ 43, 34. Cheng explains that a user of the device is permitted to select from or delete the various alternative authentication factors. *Id.* ¶ 38.

Cheng discloses associating different authentication factors with different levels of authentication, where authentication factors within the same level represent the same quality of authentication. Ex. 1006 ¶¶ 32–35. Cheng explains that "[a]n increasing level of authentication is associated with an increasing level of confidence in security." *Id.* ¶ 33. For example, an authentication method based on an individual's fingerprint has a higher

authentication level, or quality, than an authentication method based on a PIN code. *Id.* ¶ 34.

Cheng provides an example of different authentication levels and associated authentication methods in Table 1 reproduced below:

TABLE 1

Authentication Level	Authentication Factor(s)
Authentication Level 1	Possession
Authentication Level 2	PIN
Authentication Level 3	Any external supplied biometrics factors
Authentication Level 4	Two external supplied biometrics factors or on-board fingerprint
Authentication Level 5	Any external supplied biometrics plus on-board fingerprint or PIN, or on-board Multi-digit fingerprint with 2 out of 3 minimum
Authentication Level 6	Two external supplied biometrics plus on-board fingerprint or PIN, or on-board Multi-digit fingerprint with 3 out of 5 minimum
Authentication Level 7	On-board multi-digit, digit specific, complete match plus PIN

Cheng discloses that when several authentication methods are available to a user, an authorizer of a transaction, such as a vendor, may select a specific authorization level required for that transaction. Ex. 1006 ¶¶ 3, 5, 37. For example, for a certain transaction, the authorizer may require that the authorizee, or user of the device, use an authentication method corresponding to authentication level 3. *Id.* ¶¶ 34, 37. In this case, the authorizee would be granted access only if the authorizee uses an authentication method of at least level 3. *Id.* ¶¶ 11, 36.

3. Reasons to Combine the Teachings of Burger and Cheng

Petitioner contends a person of ordinary skill would have had reason to combine the teachings of Burger and Cole because both references concern methods for performing secure electronic transactions with a portable authentication device and the combination would allow a point-of-sale terminal performing such a transaction with Burger's Pocket Vault to accurately gauge the security risk of the transaction by receiving information

about how the user of the Pocket Vault was authenticated as taught by Cheng. Pet. 32–36 (citing Ex. 1003, Neuman Decl. ¶¶ 50, 52–60). Petitioner contends that a person of ordinary skill would have had a reasonable expectation of success because Cheng's technique was specifically intended to be implemented in a portable authentication device such as Burger's Pocket Vault. Pet. 36–37 (citing Ex. 1003, Neuman Decl. ¶ 61).

For purposes of this Decision, we find Petitioner cites sufficient evidence to support its contention that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng.

4. Claims 1 and 10

The preamble of claim 1 recites a "method for effecting a secure electronic transaction to a terminal." Petitioner contends that Burger discloses this section of the preamble in describing methods for performing electronic transactions between a handheld Pocket Vault and a point-of-sale or other commercial interface station. Pet. 38 (citing Ex. 1005, 1:17–19, 8:38–47, 2:42–50). Petitioner contends that such transactions are secure because the user of the Pocket Vault is authenticated with each attempted use, and communications between the Pocket Vault and other devices are encrypted. *Id*. at 39 (citing Ex. 1005, 12:6–27, 12:40–50, 55:29–35). Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that Burger discloses the features recited in this section of the preamble of claim 1.

The preamble of claim 1 recites "using a portable data carrier arranged to perform different quality user authentication methods." The preamble of claim 10 recites "arranged to perform different quality user methods." Petitioner contends that Burger discloses these sections of the

preambles of claims 1 and 10 in describing a Pocket Vault arranged to perform different authentication methods such as PIN-based methods and biometric-based methods. Pet. 40–41 (citing Ex. 1005, 12:6–25, 15:24–41, 17:50–67, 19:41–53, Fig. 26E), 65. Petitioner contends that Cheng also discloses these sections of the preambles in describing different authentication methods associated with different levels of quality. *Id*. at 41–42 (citing Ex. 1006 ¶¶ 33–34, table 1). Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that Burger and Cheng teach the features recited in these sections of the preambles of claims 1 and 10.

The preamble of claim 1 recites "wherein the portable data carrier performs a user authentication using one of said different user authentication methods, the portable data carrier confirms the proof of authentication to the terminal." Claim 10 recites "the portable data carrier is arranged to perform a user authentication using one of said implemented user authentication methods and the portable data carrier is arranged to confirm the authentication to a terminal." Petitioner contends that Burger discloses this section of the preamble of claim 1 and this limitation of claim 10 in describing a fingerprint scanner that scans the fingerprint of the Pocket Vault holder, determines whether the scanned fingerprint matches a stored fingerprint, and if so, transmits an encrypted message confirming authentication to the commercial interface station. Pet. 42–43 (citing Ex. 1005, 22:36–52, 23:1–4, 23:13–19, 18:10–24, Figs. 3 and 7), 65–66. Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that Burger discloses the features recited in this section of the preamble of claim 1 and the body of claim 10.

The preamble of claim 1 recites "the portable data carrier then performs a security establishing operation within the electronic transaction." The preamble of claim 10 recites a "portable data carrier for performing a security-establishing operation within a secure electronic transaction." Petitioner contends that the combination of Burger and Cheng teaches these sections of the preambles of claims 1 and 10. Pet. 45–48, 65. Petitioner contends that Burger discloses a method of performing a wireless transaction by encrypting communications between the Pocket Vault and the commercial interface station. *Id*. at 45–48 (citing Ex. 1005, 2:51–59, 12:37–51, 23:60–24:6, 29:40–43, 30:6–21, 55:23–27, Figs. 7 and 10). Petitioner contends that Cheng discloses a portable authentication device that performs a digital signature to establish secured communication. *Id*. at 48 (citing Ex. 1006 ¶ 44). Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that the combination of Burger and Cheng teaches the features recited in these sections of the preambles of claims 1 and 10.[7]

Claim 1 recites "comprising the steps of creating authentication quality information by the portable data carrier about said user authentication method used." Claim 10 recites "wherein the data carrier is arranged to create quality information about said user authentication method used." Petitioner contends that the combination of Burger and Cheng teaches these limitations of claims 1 and 10. Pet. 49–51, 66. Petitioner contends that Burger discloses a Pocket Vault that performs various types of

[7] Because Petitioner has shown that the recitations in the preambles are satisfied by the combination of Burger and Cheng, we need not determine whether the preamble are limiting at this time. *See Vivid Techs.*, 200 F.3d at 803.

user authentication methods of differing quality, and authenticates a user using one of the authentication methods prior to a transaction. *Id*. at 49 (citing Ex. 1005, 12:6–27, 16:28–55, 22:66–23:19). Petitioner contends that, to the extent Burger does not explicitly disclose creating information about the quality of the method used, Cheng discloses creating and storing information representing the authentication level and method used. *Id*. at 49–50 (citing Ex. 1006 ¶¶ 10, 33–34, 43, 45, table 1). Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that the combination of Burger and Cheng teaches the features recited in these limitations of claims 1 and 10.

Claim 1 recites "attaching said authentication quality information to the result of the security-establishing operation." Claim 10 recites "to attach such quality information to the result of the security establishing operation." Petitioner contends that Cheng discloses these limitations of claims 1 and 10 in creating an electronic identifier representing the authentication level of the authentication method used, and securely communicating the electronic identifier to the authorizer device by performing a digital signature. Pet. 51–52 (citing Ex. 1006 ¶¶ 31, 36, 44, 45), 66. Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that Cheng discloses the features recited in these limitations of claims 1 and 10.

Claims 1 and 10 each recites "wherein the difference in quality of said user authentication methods varies between an inherently relatively lower quality and an inherently relatively higher quality from a security perspective." Petitioner contends that the combination of Burger and Cheng teaches these limitations of claims 1 and 10. Pet. 53–55, 65. Petitioner contends that Burger teaches that the Pocket Vault performs various

methods of authentication, such as PIN-based or biometric-based. *Id*. at 53–54 (citing Ex. 1005, 12:6–16). Petitioner contends that Cheng teaches that a biometric-based authentication method has a higher authentication level, or quality, than a PIN-based method. *Id*. at 54 (citing Ex. 1006 ¶¶ 33–34, table 1). Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that the combination of Burger and Cheng teaches these limitations of claims 1 and 10.

Based on the evidence and arguments currently of record, for purposes of institution, we find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined teachings would have taught or suggested the features recited in claims 1 and 10 to an ordinarily skilled artisan.

5. Claims 2 and 11

Claim 2 depends from claim 1 and recites "wherein the security establishing operation performed by the portable data carrier comprises creating a digital signature." Claim 11 depends from claim 2 and recites "wherein the portable data carrier is set up to create a digital signature." Petitioner contends that the combination of Burger and Cheng teaches these limitations of claims 2 and 11. Pet. 55–56, 66. Petitioner contends that Burger teaches a Pocket Vault that performs well known security establishing operations, such as PKI-based operations, to secure its communications. *Id*. at 55 (citing Ex. 1005, 12:37–51; 55:29–35). Petitioner contends that Cheng teaches that one well known security establishing operation is creating a digital signature. *Id*. (citing Ex. 1006 ¶ 44). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had

reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claims 2 and 11.

6. Claim 3

Claim 3 depends from claim 1 and recites "wherein the authentication of the user is performed by presentation of a biometric feature." Petitioner contends that Burger discloses this limitation in describing authenticating a user by scanning the user's fingerprint. Pet. 56 (citing Ex. 1005, 12:6–27, 22:36–52, 23:1–4). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 3.

7. Claim 4

Claim 4 depends from claim 3 and recites "wherein the authentication of a user is performed by presentation of a physiological or behavior-based feature characteristic of a user." Petitioner contends that Burger discloses this limitation in describing authentication by scanning a physiological feature such as a fingerprint, an iris, a retina, or a voiceprint. Pet. 57 (citing Ex. 1005, 22:36–52, 23:1–4, 17:50–67). Petitioner contends that Burger discloses authentication by analyzing behavior-based features such as a speech pattern analysis or keystroke rhythm. *Id*. (citing Ex. 1005, 12:6–27). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 4.

8. Claim 5

Claim 5 depends from claim 1 and recites "wherein the authentication of the user is performed by proof of knowledge of a secret." Petitioner

contends that Burger discloses this limitation in describing a PIN code that may be entered by the holder to verify the holder's identity. Pet. 57 (citing Ex. 1005, 12:16–27). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 5.

9. Claims 6 and 12

Claim 6 depends from claim 1 and recites "wherein at least two different authentication methods of different quality are offered for authentication of the user." Claim 12 depends from claim 10 and recites "wherein the data carrier supports at least two qualitatively different authentication methods." Petitioner contends that the combination of Burger and Cheng teaches these limitations of claims 6 and 12. Pet. 58–59, 67. Petitioner contends that Burger discloses a Pocket Vault that offers multiple, alternative authentication methods of different quality, such as biometric-based and PIN-based authentication methods. *Id*. at 58 (citing Ex. 1005, 12:6–27). Petitioner contends that Cheng discloses a portable authentication device that permits a user to select one or more authentication factors from a plurality of authentication factors, such as biometric factors and non-biometric factors. *Id*. at 58–59 (citing Ex. 1006 ¶ 38). Petitioner contends that Cheng teaches that a benefit of allowing a user to select from different authentication methods of different quality is that the user can select an alternative authentication factor in case the user is not able to communicate with the intended authentication factor. *Id*. Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of

Burger and Cheng and that their combined disclosures teach the limitations recited in claims 6 and 12.

10. Claim 7

Claim 7 depends from claim 6 and recites "wherein the particular authentication methods not used are disabled." Petitioner contends that the combination of Burger and Cheng teaches this limitation. Pet. 60–61. Petitioner contends that Burger discloses a Pocket Vault that offers authentication methods "alternatively," such that when one of the several methods is used for authentication, the methods not used are not available for communication, and are therefore disabled. *Id*. at 60 (citing Ex. 1003, Neuman Decl. ¶¶ 104–105). Petitioner also contends that Cheng discloses that a user has the ability to delete an authentication factor, such as a fingerprint factor, and that in such a case, the fingerprint scanner located on the portable device would be disabled for authentication. *Id*. (citing Ex. 1006 ¶¶ 7–8; Ex. 1003, Neuman Decl. ¶¶ 106–108). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 7.

11. Claim 8

Claim 8 depends from claim 6 and recites "wherein no quality information is produced for an authentication method." Petitioner contends that Cheng discloses this limitation in describing creating information about the authentication level and authentication factors entered by the user, and does not create authentication level information for authentication factors not entered by the user. Pet. 61–63 (citing Ex. 1006 ¶ 45; Ex. 1003, Neuman Decl. ¶ 109). Based on the current record, we find that, for purposes of

institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 8.

12. Claim 9

Claim 9 depends from claim 1 and recites "wherein a user is asked to select an authentication method." Petitioner contends that the combination of Burger and Cheng teaches this limitation. Pet. 63–65. Petitioner contends that Burger discloses a touch-screen enabled Pocket Vault that performs multiple user authentication methods of different quality, where the methods are offered alternatively or additionally. *Id*. (citing Ex. 1005, 12:6–27, 22:12–16). Petitioner contends that Cheng teaches allowing a user to select an authentication method via a display on a portable authentication device. *Id*. (citing Ex. 1006 ¶¶ 8, 38, 41). Petitioner contends that causing Burger's Pocket Vault to ask a user on its touch screen to select an authentication method yields the predictable benefit of providing flexibility to the user as taught by Cheng. *Id*. at 64 (citing Ex. 1003, Neuman Decl. ¶ 115). Based on the current record, we find that, for purposes of institution, Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Burger and Cheng and that their combined disclosures teach the limitations recited in claim 9.

XI. CONCLUSION

Based on the arguments presented in the Petition, we conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '249 patent challenged in the Petition. Accordingly, we institute a trial on all claims and the ground asserted in the Petition. The Board has not made a final determination under 35 U.S.C. § 318(a) with respect to the patentability of the challenged claims.

XII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–12 of the '249 patent is instituted with respect to the ground set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '249 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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