

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
VISA INC., and VISA U.S.A. INC.,
Petitioner,

v.

UNIVERSAL SECURE REGISTRY, LLC,
Patent Owner.

Case IPR2018-00810¹
Patent 9,100,826 B2

Before PATRICK R. SCANLON, GEORGIANNA W. BRADEN, and
JASON W. MELVIN, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Claims Unpatentable
Dismissing Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

¹ Visa Inc. and Visa U.S.A. Inc., which filed a petition in IPR2019-00175, have been joined as parties to this proceeding.

I. INTRODUCTION

Apple Inc. filed a Petition (Paper 3, “Pet.”) requesting an *inter partes* review of claims 1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34 of U.S. Patent No. 9,100,826 B2 (Ex. 1001, “the ’826 patent”). Universal Secure Registry, LLC (“Patent Owner”) did not file a Preliminary Response. The Board instituted a trial as to the challenged claims. Paper 8 (“Dec.”).

After institution of trial, Visa Inc. and Visa U.S.A. Inc. filed a petition and a Motion for Joinder to this proceeding. Case IPR2019-00175, Papers 2, 3. We granted the Motion for Joinder, and IPR2019-00175 was joined with this proceeding and dismissed. Paper 32, 5. Consequently, Apple Inc., Visa Inc., and Visa U.S.A. Inc. (collectively, “Petitioner”) are joined in this proceeding.

Patent Owner filed a Patent Owner Response (“PO Resp.”) to the Petition. Paper 18. Petitioner filed a Reply (“Reply”) to the Patent Owner Response. Paper 24. Patent Owner filed a Sur-Reply (“Sur-Reply”). Paper 29. In addition, Patent Owner filed a Conditional Motion to Amend (Paper 19, “Mot. Amend”), Petitioner filed an Opposition to Patent Owner’s Conditional Motion to Amend (Paper 25), Patent Owner filed a Reply to Petitioner’s Opposition (Paper 30), and Petitioner filed a Sur-Reply to Patent Owner’s Reply (Paper 35).

Petitioner relies on the Declaration of Dr. Victor Shoup in Support of Petition for *Inter Partes* Review (Ex. 1002), the Declaration of Dr. Victor Shoup in Support of Petitioner’s Reply to Patent Owner’s Response (Ex. 1018), the Declaration of Dr. Victor Shoup in Support of Petitioner’s Opposition to Patent Owner’s Conditional Motion to Amend (Ex. 1019), and the Declaration of Dr. James L. Mullins (Ex. 1022) in support of its

contentions. Patent Owner relies on the Declaration of Markus Jakobsson in Support of Patent Owner's Response (Ex. 2003), the Declaration of Markus Jakobsson in Support of Patent Owner's Conditional Motion to Amend (Ex. 2013), and the Declaration of Markus Jakobsson in Support of Patent Owner's Reply to Opposition of Conditional Motion to Amend (Ex. 2015) in support of its contentions.

An oral hearing was held on July 16, 2019, and the record contains a transcript of this hearing. Paper 41 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine Petitioner has not shown by a preponderance of the evidence that claims 1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34 of the '826 patent are unpatentable. We dismiss Patent Owner's Conditional Motion to Amend as moot.

II. BACKGROUND

A. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), each party identifies various judicial or administrative matters that would affect or be affected by a decision in this proceeding. Pet. 2–4; Paper 7, 2 (Patent Owner's Updated Mandatory Notices).

B. The '826 Patent

The '826 patent, titled "METHOD AND APPARATUS FOR SECURE ACCESS PAYMENT AND IDENTIFICATION," issued August 4, 2015, with claims 1–35. Ex. 1001, codes (54), (45), 44:24–48:34. The '826 patent is directed to a secure database called a "Universal Secure Registry," which can be used as "a universal identification system" and/or

“to selectively provide information about a person to authorized users.” *Id.* at 3:63–67. The ’826 patent states that the USR database is designed to “take the place of multiple conventional forms of identification.” *Id.* at 4:10–12. The ’826 patent further states that various forms of information can be stored in the database to verify a user’s identity and prevent fraud: (1) algorithmically generated codes, such as a time-varying multi-character code or an “uncounterfeitable token,” (2) “secret information” like a PIN or password, and/or (3) a user’s “biometric information,” such as fingerprints, voice prints, an iris or facial scan, DNA analysis, or even a photograph. *See id.* at 13:52–58, 14:5–23, 43:52–59, Fig. 3.

The patent discloses a variety of embodiments including those in which a user is authenticated on a device using secret information (such as a PIN code) and biometric information (such as a fingerprint), and then the first device transmits information to a second device for further authentication. *See id.* at 28:52–29:7. The second device may verify the user’s information and return an enablement signal to the first device. *Id.* at 32:43–56. Accordingly, the ’826 patent discloses that the system can be used to selectively provide authorized users with access to perform transactions involving various types of confidential information stored in a secure database. *See, e.g., id.* at 3:63–4:3.

C. Challenged Claims

As noted above, Petitioner challenges claims 1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34 of the ’826 patent. Claims 1, 10, 21, and 30 are independent. Independent claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. A system for authenticating identities of a plurality of users, the system comprising:

a first handheld device including:

a first processor, the processor programmed to authenticate a user of the first handheld device based on authentication information and to retrieve or receive first biometric information of the user of the first handheld device; and

a first wireless transceiver coupled to the first processor and programmed to transmit via a network a first wireless signal including first authentication information of the user of the first handheld device; and

a second device including:

a second processor;

a second wireless transceiver coupled to the second processor, and

a second memory coupled to the second processor, and

wherein the second device is configured to retrieve or receive respective second authentication information for a first plurality of users, wherein the first plurality of users includes the user of the first handheld device;

wherein the first processor is programmed to determine the first authentication information derived from the first biometric information and to transmit the first authentication information of the user of the first handheld device to the second device via the network,

wherein the second processor is configured to:

receive the first authentication information of the user of the first handheld device;

retrieve or receive the second authentication information of the user of the first handheld device; and

use the first authentication information and the second authentication information to authenticate an identity of the user of the first handheld device with the second device.

Id. at 44:24–58.

D. The Prior Art

Petitioner’s asserted ground of unpatentability for the challenged claims relies on the following references:

Maritzen	US 2004/0236632 A1	Nov. 25, 2004	Ex. 1004
Jakobsson	WO 2004/051585 A2	June 17, 2004	Ex. 1005
Niwa	US 6,453,301 B1	Sept. 17, 2002	Ex. 1007

E. Ground of Unpatentability at Issue

The Petition challenges claims 1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34 of the ’826 patent as unpatentable under 35 U.S.C. § 103 over Maritzen, Jakobsson, and Niwa.² Pet. 9, 18–75. We instituted trial on all claims challenged in this asserted ground of unpatentability. Dec. 2, 20.

III. ANALYSIS

A. Relevant Legal Principles

To prevail in challenging Patent Owner’s claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). The burden of persuasion rests with Petitioner. *See Dynamic*

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the ’826 patent has an effective filing date before the effective date of the relevant amendment, the pre-AIA version of § 103 applies.

Drinkware, LLC v. Nat'l Graphics, Inc., 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and, (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, for an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

B. Level of Ordinary Skill in the Art

Petitioner contends a person having ordinary skill in the art to which the '826 patent pertains

would have a Bachelor's Degree in electrical engineering, computer science, or a related scientific field, and approximately two years of work experience in the computer science field

including, for example, operating systems, database management, encryption, security algorithms, and secure transaction systems, though additional education can substitute for less work experience and *vice versa*.

Pet. 4–5 (citing Ex. 1002 ¶¶ 21–23). Patent Owner argues a person having ordinary skill in the art to which the '826 patent pertains

would have a Bachelor of Science degree in electrical engineering and/or computer science, and three years of work or research experience in the fields of secure transactions and encryption, or a Master's degree in electrical engineering and/or computer science and two years of work or research experience in related fields.

PO Resp. 10 (citing Ex. 2003 ¶ 18). Patent Owner correctly notes that its proposed definition is essentially the same as Petitioner's, with the exception of requiring three—rather than two—years of work or research experience.

Id.

Factual indicators of the level of ordinary skill in the art include “the various prior art approaches employed, the types of problems encountered in the art, the rapidity with which innovations are made, the sophistication of the technology involved, and the educational background of those actively working in the field.” *Jacobson Bros., Inc. v. United States*, 512 F.2d 1065, 1071 (Ct. Cl. 1975); *see also Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1011 (Fed. Cir. 1983) (quoting with approval *Jacobson Bros.*).

The parties' respective proposals are substantially similar such that there is no apparent dispute between the parties. Also, based on our review of the record before us, we find that Petitioner's stated level of ordinary skill in the art is reasonable because it is consistent with the evidence of record, including the asserted prior art. Thus, for the purposes of this Decision, we

adopt Petitioner’s definition. We note, however, that our findings in this proceeding would not differ under Patent Owner’s proposed definition.

C. Claim Construction

Under the version of our rules applicable to this *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2017);³ *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016) (concluding that 37 C.F.R. § 42.100(b) “represents a reasonable exercise of the rulemaking authority that Congress delegated to the Patent Office”). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Also, we are careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (“[L]imitations are not to be read into the claims from the specification.”).

In view of our analysis discussed below, we determine that “biometric information” from claims 1, 10, 21, and 30 is the only term requiring construction in order to resolve the disputed issues in this proceeding. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir.

³ A recent amendment to this rule does not apply here because the Petition was filed before November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b), effective Nov. 13, 2018).

1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

Petitioner argues that “biometric information” should be construed to mean “information about a user’s physical characteristics, such as fingerprint, voice print, signature, iris or facial scan, DNA analysis, or personal photograph.” Pet. 13 (citing Ex. 1002 ¶ 32). Petitioner asserts that this construction is supported by the Specification of the ’826 patent, which describes biometric information using substantially identical language. *Id.* at 13–14 (citing Ex. 1001, 4:27–32). Patent Owner contends that construction of this term is not necessary but does not contest Petitioner’s proposed construction. PO Resp. 11.

We agree with Petitioner that the Specification identifies fingerprint, voice print, signature, iris or facial scan, DNA analysis, and possibly a picture of a person as examples of biometric information. Furthermore, we credit Dr. Shoup’s testimony that biometric information falls into the category of “things a person is.” *See* Ex. 1002 ¶ 33.

Therefore, in the context of the claims and the Specification of the ’826 patent, we construe the term “biometric information” to mean “information about a user’s physical characteristics, such as fingerprint, voice print, signature, iris or facial scan, DNA analysis, or personal photograph.”

D. Asserted Obviousness based on Maritzen, Jakobsson, and Niwa

a) Overview of the Cited Prior Art

i. Overview of Maritzen

Maritzen is a published patent application directed to conducting a financial transaction, in one embodiment using communication “between a vehicle-accessed, payment-gateway terminal (VAPGT) and a pre-registered, key-enabled, personal transaction device (PTD).” Ex. 1004, Abstract. In one embodiment, Maritzen discloses a financial transaction system in which PTD 100 communicates with VAPGT 120 via communication link 150. *Id.* ¶ 38, Fig. 1. In addition, VAPGT 120 communicates with clearing house 130 via communication link 170. *Id.* ¶ 39, Fig. 1.

ii. Overview of Jakobsson

Jakobsson is a published international patent application directed to an identity-authentication system. Ex. 1005. In certain embodiments of Jakobsson’s system, a user is first authenticated on a user device using a PIN or biometric information; the user device then sends information to a remote verifier including user authentication, PIN, biometric data, and a time-varying code, so that the remote system may verify the information and return a signal to the user device. *Id.* ¶¶ 50, 59.

iii. Overview of Niwa

Niwa discloses “a method and system for authorizing a transaction between two parties over a network . . . when an authorization code has been received by an authorizing entity.” Ex. 1007, 1:8–12. The authorization code can be “produced by a fingerprint identification device in response to comparing a fingerprint of one of the parties to a stored fingerprint in the device.” *Id.* at 1:12–15.

b) Analysis of Independent Claims 1, 10, 21, and 30

i. First Handheld Device

Claims 1 and 21 both recite a system for authenticating identities of a plurality of users that includes “a first handheld device.” Ex. 1001, 44:24–26, 46:21–23. Claims 10 and 30 both recite a method of authenticating an identity of a first entity that uses “a first handheld device.” *Id.* at 45:30–32, 47:28–30.

With respect to claim 1, Petitioner asserts that Maritzen discloses that personal transaction device (PTD) 100 is the first handheld device. Pet. 20 (citing Ex. 1004 ¶ 63; Ex. 1002 ¶ 49); *see also id.* at 6 (“Maritzen relates to a handheld authentication device (‘personal transaction device (PTD) 100’).”); *id.* at 15 (“Maritzen is directed toward an electronic user authentication system that involves a handheld device.”). Petitioner relies on this same analysis with respect to the first handheld device limitation of claims 10 and 30. *Id.* at 56 (claim 10), 72 (claim 30). For claim 21, Petitioner relies on its analysis of a claim 1 limitation that does not address a first handheld device. *Id.* at 59.

Patent Owner argues that Petitioner provides no explanation or basis for its assertion that Maritzen’s PTD 100 is a handheld device and does not cite any such disclosure in Maritzen. PO Resp. 43–44 (citing Ex. 2003 ¶ 110). According to Patent Owner, Maritzen never states that the PTD is handheld and only describes it as a “personal transaction device.” *Id.* at 44 (citing Ex. 2003 ¶ 112; Ex. 1004 ¶ 63). Patent Owner contends that many “personal” devices are not handheld, particularly devices intended for use in a vehicle such as conventional toll transponders, navigation systems, and radar detectors. *Id.* (citing Ex. 2003 ¶ 112). Thus, Patent Owner argues that

“[g]iven the PTD’s specifically intended use in a vehicle, a [person of ordinary skill in the art] would have understood that [Maritzen’s] PTD is more likely meant to be mounted in the vehicle (e.g., on the windshield, dashboard, sun visor, etc.) than to be handheld.” *Id.* at 45 (citing Ex. 2003 ¶ 113).

We agree Maritzen does not disclose expressly that PTD 100 is a handheld device. The only disclosure from Maritzen cited in the Petition, ¶ 63, describes the architecture for PTD 100 but makes no mention that PTD 100 is a handheld device. Ex. 1004 ¶ 63. The Petition does not direct us to any other disclosure in Maritzen that explicitly describes any of the disclosed PTD embodiments as being handheld, and we are not aware of any such disclosure. Furthermore, the testimony of Dr. Shoup cited by Petitioner merely repeats the same assertion that Maritzen’s PTD 100 is the first handheld device without providing any support or explanation for this assertion, other than citing the same ¶ 63 of Maritzen. Ex. 1002 ¶ 49.

Petitioner presents three arguments in reply. Reply 19–21. First, Petitioner argues that the term PTD stands for “personal transaction device,” and one of ordinary skill in the art would have understood that personal devices typically are kept on a user’s person. *Id.* at 19. According to Petitioner, “[p]ersonal devices are typically small and capable of being held in one’s hand.” *Id.* Petitioner also argues that “Maritzen describes various embodiments of the PTD and its embedded privacy card as being ‘the size of a credit card,’” and one of ordinary skill in the art “would have understood that an integrated system that is the size of a credit card is handheld.” *Id.* (citing Ex. 1004 ¶ 69; Ex. 1017, 209:4–9).

In response, Patent Owner argues that the word “personal” does not mean a device must be handheld. Sur-Reply 17. As another example, Patent Owner argues that a “personal computer” generally refers to a desktop computer, not a handheld device. *Id.* (citing Ex. 1017, 215:19–216:2). We agree that a “personal” device is not necessarily a handheld device. Petitioner’s assertion that personal devices are typically small and capable of being held in a hand is not persuasive. Petitioner does not support adequately the contention that personal devices are typically small; even assuming for the sake of argument that many personal devices are small, that does not mean that Maritzen’s PTD is sufficiently small enough to be capable of being held in a hand. Nor does the size indicate that Maritzen’s PTD is intended to be held in the hand during use in a vehicle. Thus, Petitioner has not established adequately that merely being *capable* of being held in one’s hand makes a device a handheld device.

In addition, we agree with Patent Owner’s argument that Petitioner’s assertion that Maritzen discloses the PTD *and* its embedded privacy card as being the size of a credit card is incorrect. *See id.* at 19–20. The disclosure of Maritzen cited in the Petition in support of this assertion, ¶ 69, states that “[privacy] card 110 is configured, in one embodiment, to be the size of a credit card.” Ex. 1004 ¶ 69. Thus, only the privacy card is described as being the size of a credit card. The cited paragraph of Maritzen does not state that the PTD is also the size of a credit card; nor is there any disclosure that the “integrated system” of the PTD and the privacy card is the size of a credit card. The Petition does not direct us to any other disclosure in Maritzen that describes the PTD or the integrated system as being the size of a credit card.

For the above reasons, we do not find Petitioner’s first reply argument persuasive.

Second, Petitioner disputes Patent Owner’s contention that many “personal” devices are not handheld, arguing that no person of ordinary skill in the art would consider Patent Owner’s examples (conventional toll transponders, navigation systems, and radar detectors) to be “personal” devices. Reply 19. Petitioner also argues that Patent Owner does not, and cannot, cite any support for its contention that Maritzen’s PTD is more likely to be mounted in the vehicle than to be handheld. *Id.* at 20. Petitioner asserts “Maritzen discloses no mounting apparatus or adhesive that could be used to attach the PTD to a vehicle.” *Id.* (citing Ex. 1018 ¶ 49).

Patent Owner responds by arguing “given that Maritzen’s PTD is specifically intended to be used in a vehicle-based transaction, a [person of ordinary skill in the art] would have understood that the PTD was more likely meant to be operated while mounted in the vehicle than to be operated while held in the hand.” Sur-Reply 19 (citing Ex. 1017, 212:3–13; PO Resp. 44–45). We agree with Petitioner that Maritzen does not explicitly disclose mounting the PTD to a vehicle. Yet, we find Dr. Jakobsson’s testimony—that mounting Maritzen’s PTD to the vehicle’s dashboard, rather than using it as a handheld device, would avoid distracted driving—persuasive and a reason that one of ordinary skill in the art would consider mounting the PTD in the vehicle more likely. *See* Ex. 1017, 212:7–13. But even if Patent Owner’s contention regarding mounting Maritzen’s PTD in the vehicle is wrong, that would not change our conclusion because Maritzen still does not disclose or suggest that the PTD

is a handheld device. Accordingly, Petitioner's second reply argument is not persuasive.

Third, Petitioner argues Figures 6a and 6b of Maritzen disclose embodiments of the PTD that are clearly handheld devices. Reply 20. According to Petitioner, Figure 6a shows a cellular telephone and is thus a handheld device. *Id.* Petitioner also argues that "Maritzen further explains that elements 630 and 660 are biometric input devices (i.e., fingerprint scanners), which reveals that the dimensions of the entire device are proportioned for handheld use." *Id.* (citing Ex. 1004 ¶ 76; Ex. 1018 ¶¶ 50–51).

In response, Patent Owner contends that this argument (as well as Petitioner's other reply arguments) should be disregarded because Petitioner improperly introduced it for the first time in its Reply. Sur-Reply 16–17. Patent Owner also contends this argument fails on the merits because Maritzen does not disclose that the devices of Figures 6a and 6b are handheld devices and Petitioner cites no evidence that Figure 6a shows a cellular telephone. *Id.* at 18. Regarding Petitioner's assertion that the biometric input devices of Figures 6a and 6b show that the dimensions of the entire device are proportioned for handheld use, Patent Owner argues that this assertion is wrong because Maritzen discloses using "any means of biometric access," such that the biometric input devices may not be fingerprint sensors and their size is thus unclear. *Id.* at 18 n.15.

We agree with Patent Owner that Petitioner's argument based on Figures 6a and 6b of Maritzen is untimely. Under the Board's rules, a petitioner's reply "may only respond to arguments raised in the corresponding . . . patent owner response." 37 C.F.R. § 42.23(b) (2017); *see*

also Ariosa Diagnostics v. Verinata Health, Inc., 805 F.3d 1359, 1367 (Fed. Cir. 2015) (discussing how, in *inter partes* review proceedings, a petitioner’s reply is “limited to a true rebuttal role” (citing 37 C.F.R. §§ 42.104(b)(5), 42.23(b))). The petitioner’s reply is not an opportunity to raise new theories or arguments or to submit new evidence that reasonably could have been presented in the initial petition. See Patent Trial and Appeal Board, Trial Practice Guide Update, 15 (August 2018), available at <https://go.usa.gov/xU7GP>; *see also* Office Patent Trial Practice Guide, August 2018 Update, 83 Fed. Reg. 39,989 (Aug. 13, 2018) (notice).

Here, as discussed above, the Petition asserts, without explanation, that Maritzen discloses that PTD 100 is the first handheld device. Pet. 20 (citing Ex. 1004 ¶ 63; Ex. 1002 ¶ 49); *see also id.* at 6 (“Maritzen relates to a handheld authentication device (‘personal transaction device (PTD) 100’).”); *id.* at 15 (“Maritzen is directed toward an electronic user authentication system that involves a handheld device.”). Notably, the Petition identifies only *PTD 100* (shown in Figures 1 and 2)—and not PTD 610 of Figure 6a or PTD 640 of Figure 6b—as being a handheld device. The only discussion of Figures 6a and 6b in the Petition pertains to a different claim limitation, namely the limitation that the first processor is programmed “to retrieve or receive first biometric information of the user of the first handheld device.” *Id.* at 21–23. The Petition asserts that the embodiments of Figures 6a and 6b disclose that the processor is configured to receive or retrieve first biometric information in the form of a finger or thumbprint through biometric inputs 630 or 660, but does not assert that devices of Figures 6a and 6b are handheld devices. *Id.* at 22–23 (citing Ex. 1004 ¶¶ 44, 63, 76, 88). Also, the Petition does not assert that PTD 610 of Figure 6a is a cellular telephone.

Accordingly, we determine that Petitioner's arguments made for the first time in its Reply that the devices of Figures 6a and 6b are clearly handheld devices and PTD 610 of Figure 6a is a cellular telephone improperly raise new theories or reasoning that reasonably could have been presented in the Petition. Under these circumstances, it would be a proper exercise of our discretion not to consider these arguments. *See Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 775 (Fed. Cir. 2018) (finding the Board did not abuse its discretion in declining to consider portions of a reply declaration that raised a new obviousness argument).

Dr. Shoup's testimony relied on by Petitioner merely repeats the assertions made in the Reply and, thus, is not supported sufficiently by objective evidence or analysis. *See* Ex. 1018 ¶¶ 50–51. Accordingly, we do not credit the testimony of Dr. Shoup on this issue. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

For the above reasons, we do not find Petitioner's third reply argument persuasive.

Based on the full record before us, we determine Petitioner has not met its burden of establishing that the combination of Maritzen, Jakobsson, and Niwa teaches or suggests a first handheld device as recited in each of claims 1, 10, 21, and 30.

ii. *First Processor Determines First Authentication Information*

Claim 1 further recites that the first handheld device includes a first processor, and "the first processor is programmed to determine the first

authentication information derived from the first biometric information.”⁴
Ex. 1001, 44:26–27, 44:45–47. Petitioner maps the first processor to Maritzen’s central processing unit (CPU) 210. Pet. 20 (citing Ex. 1004 ¶ 63, Ex. 1002 ¶ 49). Petitioner then argues that CPU 210 is programmed to determine a biometric key, which Petitioner contends corresponds to the recited first authentication information. *Id.* at 40 (citing Ex. 1004 ¶¶ 39, 44, 63; Ex. 1002 ¶ 88).

The disclosure of Maritzen relied on by Petitioner, however, states that privacy card 110—not CPU 210—creates the biometric key. Ex. 1004 ¶ 44; *see also id.* ¶¶ 88, 109, 124, 148, 164 (each disclosing that privacy card 110 creates biometric key 350 and transmits key 350 to PTD 100). Petitioner’s reliance on Maritzen’s disclosure in ¶ 39 that “PTD 100 and privacy card 110 may be within the same device” is unavailing. The mere fact that PTD 100 and privacy card 110 can be housed in the same device does not mean that CPU 210 of PTD 100 would perform functions assigned to privacy card 110. Although disclosing that validation of biometric information⁵ is conducted by privacy card 110 if privacy card 110 is separate from PTD 100, but is conducted by PTD 100 if privacy card 110 is within PTD 100 (*id.* ¶ 44), Maritzen does not make a similar distinction for creating the biometric key.

In addition, Maritzen discloses that privacy card 110 includes its own CPU 410 that may be configured to execute instructions to perform the

⁴ Petitioner refers to this limitation as limitation 1[h]. Pet. 40–46.

⁵ The validation of biometric information is a separate and prerequisite step to creating the biometric key. *See* Ex. 1004 ¶ 44 (“*[I]f the biometric input is valid for the device, privacy card 110 creates a biometric key that is transmitted to PTD 100.*” (emphasis added)).

described functionality, which would include creating the biometric key. *Id.* ¶ 69. Petitioner does not provide sufficient reasoning to explain why CPU 210, rather than CPU 410 (which the Petition does not identify as the claimed first processor), would create the biometric key. Furthermore, Maritzen repeatedly discloses that after creating the biometric key, the privacy card *transmits the biometric key to PTD 100*. *Id.* ¶¶ 44, 88, 109, 124, 148, 164. This consistent disclosure further suggests Maritzen does not contemplate that CPU 210 of PTD 100 creates the biometric key.

In view of the above, we are not persuaded that CPU 210 creates the biometric key.

Petitioner also argues that “[t]o the extent that Maritzen does not *expressly* disclose that the biometric information key . . . is derived from the first biometric information, Jakobsson discloses this limitation.” Pet. 41. According to Petitioner, “Jakobsson discloses that the processor of user authentication device 120 **[first processor]** is programmed to determine the authentication code 290 **[first authentication information]** from User Data (P) **[first biometric information]** using combination function 230.” *Id.* (citing Ex. 1005 ¶¶ 60, 64, 72). Petitioner then argues that it would have been obvious to one of ordinary skill in the art “to combine the combination function of Jakobsson with the teachings of Maritzen and Niwa to arrive at limitation 1[h].” *Id.* at 42 (citing Ex. 1002 ¶ 92).

Petitioner, however, does not explain adequately how it proposes to modify Maritzen and Niwa to include Jakobsson’s combination function. More importantly, Petitioner does not specify that it would have been obvious to modify Maritzen by replacing CPU 210 with Jakobsson’s processor or to otherwise modify Maritzen such that CPU 210, rather than

privacy card 110, creates the biometric key. Instead, Petitioner appears to argue it would have been obvious to modify Maritzen to include Jakobsson's combination function so that the biometric key is derived from the first biometric information. *See id.* at 41 ("To the extent that Maritzen does not *expressly* disclose that the biometric information key . . . is derived from the first biometric information, Jakobsson discloses this limitation."); *id.* at 42–43 ("Jakobsson, Maritzen, and Niwa provide teachings, suggestions, and motivations to derive the authentication code from biometric information as taught by Jakobsson and to combine this derivation with the systems of Maritzen and Niwa.").

For the above reasons, we determine Petitioner has not met its burden of establishing that the combination of Maritzen, Jakobsson, and Niwa teaches or suggests a first processor is programmed to determine the first authentication information derived from the first biometric information as recited in claim 1.

iii. Second Processor Receives or Retrieves Second Biometric Information

Claim 21 recites that "the second processor . . . is configured to retrieve second biometric information of the user of the first handheld device from stored biometric information of the first plurality of users or receive the second biometric information."⁶ Ex. 1001, 46:47–53. Claim 30 recites "receiving or retrieving from a memory second biometric data of the first user from biometric information for a first plurality of users stored in the

⁶ Petitioner refers to this limitation as limitation 21[i]. Pet. 62–65.

memory, and receiving the second biometric data of the first user at the second device.”⁷ *Id.* at 48:6–10.

With respect to limitation 21[1], Petitioner asserts that Maritzen discloses a second processor in the form of CPU 810⁸ that is configured to store user information or communicate with another server that stores user information. Pet. 62. Petitioner also argues Jakobsson discloses a second processor in the form of verifier 105 that is configured to either retrieve stored User Data (P) (which includes second biometric information) or receive second biometric information with a second wireless transceiver (i.e., communications channel 170). *Id.* at 63–64 (citing Ex. 1002 ¶¶ 166, 167; Ex. 1005 ¶ 48). In addition, Petitioner argues “Maritzen in view of Jakobsson discloses that a second processor uses second biometric information to authenticate an identity of the first user of the first handheld device with the second device using the first authentication information and the second biometric information.” *Id.* at 65 (citing Ex. 1002 ¶ 170). Petitioner then argues it would have been obvious to one of ordinary skill in the art “to combine the distributed system of Jakobsson with the teachings of Maritzen and Niwa to arrive at limitation 21[i].” *Id.* (citing Ex. 1002 ¶ 174). Regarding limitation 30[d], Petitioner merely cites its analysis of limitation 21[i]. *Id.* at 74.

Patent Owner argues Maritzen discloses that neither biometric information identifying a user nor other user information is transmitted from the PTD at any time. PO Resp. 39–40 (citing Ex. 1004 ¶¶ 44–45; Ex. 2005, 159:18–14; Ex. 2003 ¶ 100). Patent Owner also argues Maritzen’s clearing

⁷ Petitioner refers to this limitation as limitation 30[d]. Pet. 74.

⁸ CPU 810 is part of clearing house 130. Ex. 1004 ¶ 78, Fig. 8.

house only receives and verifies a transaction key or biometric key, not biometric information. *Id.* at 40 (citing Ex. 1004 ¶¶ 47–48; Ex. 2003 ¶ 100). In view of these teachings, Patent Owner argues that one of ordinary skill in the art “would have no motivation to modify Maritzen’s clearing house to retrieve or receive biometric information of a user, which would be an unnecessary risk in the Maritzen system given its primary goals of maintaining user anonymity and security, and its admonition against sending any user information.” *Id.* (citing Ex. 2003 ¶ 100).

We agree with Patent Owner. Maritzen discloses that clearing house 130 verifies that the biometric key (transmitted by PTD 100) is valid by comparing the biometric key to a known biometric key maintained within the clearing house. Ex. 1004 ¶ 48; *see also id.* at 81 (“Clearing house 130 also validates biometric key 350 against pre-established biometric key 950.”). Maritzen also discloses that “[p]rivacy card 110 only transmits the biometric key. The biometric information identifying the user is not transmitted at any time.” *Id.* ¶ 44. This disclosure indicates that the biometric key does not contain biometric information. In other words, the biometric key is something different than biometric information, which we have construed to mean “information about a user’s physical characteristics, such as fingerprint, voice print, signature, iris or facial scan, DNA analysis, or personal photograph.” *See supra* § III.C.

Thus, we find that one of ordinary skill in the art would not consider replacing the known biometric key in clearing house 103 with second biometric information as taught by Jakobsson because comparing the biometric key to biometric information, rather than the known biometric key, would not be effective to verify the biometric key. In other words,

because the biometric key does not contain biometric information, it could not be compared meaningfully to the second biometric information.

In reply, Petitioner argues that, contrary to Patent Owner’s argument, Maritzen does not disclose any prohibitions against using user information to authenticate the user. Reply 15 (citing Ex. 1018 ¶ 38). According to Petitioner, “Maritzen only advises against transmitting unencrypted biometric information between the privacy card and the PTD.” *Id.*

We disagree. As discussed above, Maritzen discloses “[p]rivacy card 110 only transmits the biometric key. The biometric information identifying the user is not transmitted at any time.” Ex. 1004 ¶ 44. This disclosure does not distinguish between encrypted and unencrypted biometric information, and Petitioner does not direct us to any disclosure in Maritzen that suggests otherwise. Petitioner’s assertion that Maritzen’s disclosure of not transmitting biometric information *identifying the user* indicates that Maritzen contemplates transmitting encrypted biometric information (Pet. 10) is not persuasive. Furthermore, even if Maritzen does not prevent transmission of encrypted biometric information, we still are not informed of any disclosure in Maritzen that the biometric key contains encrypted biometric information.

For the above reasons, we determine Petitioner has not met its burden of establishing that the combination of Maritzen, Jakobsson, and Niwa teaches or suggests either limitation 21[i] or limitation 30[d].

iv. *Conclusion*

Accordingly, we determine, on the full record before us, that Petitioner has not demonstrated, by a preponderance of the evidence, that claims 1, 10, 21, and 30 are unpatentable under 35 U.S.C. § 103 as directed

to subject matter that would have been obvious to a person of ordinary skill in the art in light of Maritzen, Jakobsson, and Niwa.

c) Dependent Claims 2, 7, 8, 11, 14, 15, 22, 24, 26, 27, 31, and 34

Claims 2, 7, and 8 depend from claim 1; claims 11, 14, and 15 depend from claim 10; claims 22, 24, 26, and 27 depend from claim 21; and claims 31 and 34 depend from claim 30. Thus, each of these dependent claims contains all the limitations of its respective base claim. Accordingly, we also determine Petitioner has not demonstrated, by a preponderance of the evidence, that claims 2, 7, 8, 11, 14, 15, 22, 24, 26, 27, 31, and 34 are unpatentable under 35 U.S.C. § 103 as directed to subject matter that would have been obvious to a person of ordinary skill in the art in light of Maritzen, Jakobsson, and Niwa.

E. Secondary Considerations

Patent Owner argues that neither Petitioner nor its expert witness considered the strong evidence of secondary considerations of non-obviousness, such as long-felt need, failure of others, and commercial success. PO Resp. 52–57. Because we are not persuaded Petitioner has demonstrated sufficiently that the combination of Maritzen, Jakobsson, and Niwa renders the challenged claims obvious, we need not reach Patent Owner’s assertions regarding secondary considerations.

IV. CONDITIONAL MOTION TO AMEND

Patent Owner filed a Conditional Motion to Amend. *See* Mot. Amend. Because we have found Petitioner has failed to meet its burden to demonstrate that any challenged claim is unpatentable, we do not reach the Conditional Motion to Amend. Thus, we dismiss the Conditional Motion to Amend as *moot*.

V. CONCLUSION

In summary:

Claims	Basis	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34	§ 103	Maritzen, Jakobsson, and Niwa		1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34
Overall Outcome				1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34

Additionally, we reach the following conclusions regarding Patent Owner's Conditional Motion to Amend:

Motion to Amend Outcome	Claim(s)
Original Claims Canceled by the Amendment	
Substitute Claims Proposed in the Amendment	36–61
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	
Substitute Claims: Not Reached	36–61

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 2, 7, 8, 10, 11, 14, 15, 21, 22, 24, 26, 27, 30, 31, and 34 of the '826 patent *have not been shown* to be unpatentable;

FURTHER ORDERED that Patent Owner's Conditional Motion to Amend is *dismissed* as moot; and

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

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