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Paper 7
Date: 1/23/2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SHENZHEN RFCYBER ASSET MANAGEMENT, LLP,
Patent Owner.

IPR2022-01240
Patent 8,118,218 B2

Before JOSIAH C. COCKS, PATRICK R. SCANLON, and KEVIN W. CHERRY, *Administrative Patent Judges.*

SCANLON, *Administrative Patent Judge*.

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

I. INTRODUCTION

Apple Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–5, 12–14, 17, and 18 of U.S. Patent No. 8,118,218 B2 (Ex. 1001, "the '218 patent"). Shenzhen RFCyber Asset Management, LLP ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). To institute an *inter partes* review, we must determine that the information presented in the Petition shows "a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we do not institute an *inter partes* review of any challenged claim on any asserted ground.

II. BACKGROUND

A. Real Parties in Interest

Petitioner identifies itself as the real parties in interest. Pet. 70. Patent Owner identifies itself and RFCyber Corp. as the real parties in interest. Paper 5, 1.

B. Related Matters

The parties identify the following proceedings as related matters involving the '218 patent: *RFCyber Corp. v. Apple Inc.*, Case No. 6:21-cv-00916-ADA (W.D. Tex.) (the "District Court Case"); and *RFCyber Corp. v. Visa U.S.A. Inc.*, Case No. 6:22-cv-00697 (W.D. Tex.). Pet. 70; Paper 5, 1. Petitioner also identifies the following dismissed district-court proceedings

as related matters: *RFCyber Corp. v. Google LLC*, No. 2:20-cv-00274 (E.D. Tex.); *RFCyber Corp. v. LG Electronics, Inc.*, No. 2:20-cv-00336 (E.D. Tex.); and *RFCyber Corp. v. Samsung Electronics Co.*, 2:20-cv-00335 (E.D. Tex.). Pet. 70. Petitioner further identifies the following Board proceedings involving other petitioners and the '218 patent: IPR2021-00957 (terminated), and IPR2021-00979 (denied). Pet. 70.

C. The '218 Patent

The '218 patent, titled "Method and Apparatus for Providing Electronic Purse," issued February 21, 2012, with claims 1–18. Ex. 1001, codes (45), (54), 8:37–10:63. The '218 patent "is related to a mechanism provided to devices, especially portable devices, functioning as an electronic purse (e-purse) to be able to conduct transactions over an open network with a payment server without compromising security." *Id.* at 1:50–54.

Figure 2 of the '218 patent is reproduced below.

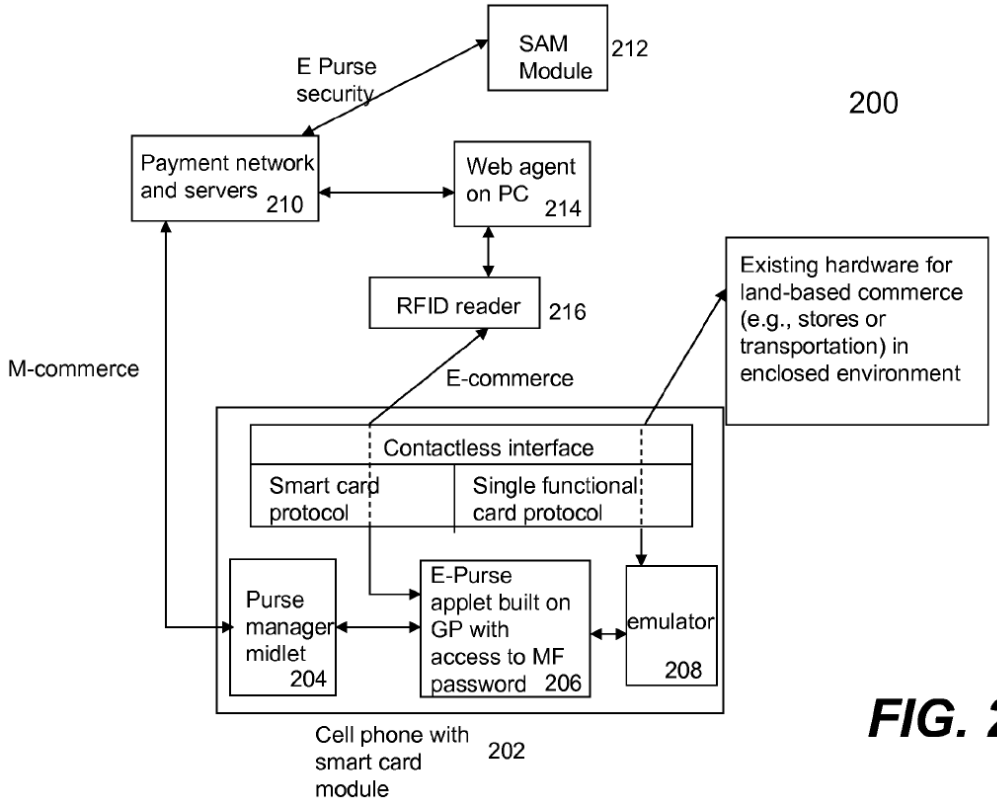

FIG. 2

Figure 2 illustrates an exemplary architecture diagram 200 according to one embodiment. *Id.* at 2:63–64, 4:57–59. The architecture includes cellphone 202 embedded with a smart card module and including an RFID interface. *Id.* at 4:59–60, 64–66. The smart card module is pre-loaded with emulator 208 for storing values. *Id.* at 4:62–64.

Cellphone 202 includes purse manager midlet 204, which, for m-commerce, can act as an agent to facilitate communications between e-purse applet 206 and one or more payment network and servers 210 to conduct transactions. *Id.* at 5:5–9. Purse manager midlet 204 is also configured to provide administrative functions such as changing a PIN, viewing a purse balance and a history log. *Id.* at 5:16–18. A card issuer provides security authentication module ("SAM") 212 that is used to enable and authenticate transactions between a card and a payment server. *Id.* at 5:19–22.

For e-commerce, web agent 214 is responsible for interacting with RFID reader 216 and network server 210. *Id.* at 5:30–32. Web agent 214 sends commands or receives responses through RFID reader 216 to or from e-purse applet 206 residing in cellphone 202. *Id.* at 5:32–35. Web agent 214 also composes network requests (such as HTTP) and receives responses thereto from payment server 210. *Id.* at 5:35–37.

D. Challenged Claims

As noted above, Petitioner challenges claims 1–18 of the '218 patent. Claims 1 and 11 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

> 1. A method for providing an e-purse, the method comprising:
>
> providing a portable device including or communicating with a smart card pre-loaded with an emulator configured to

> execute a request from an e-purse applet and provide a response the e-purse applet is configured to expect, the portable device including a memory space loaded with a midlet that is configured to facilitate communication between the e-purse applet and a payment server over a wireless network, wherein the e-purse applet is downloaded and installed in the smart card when the smart card is in communication with the payment server, the portable device further includes a contactless interface that facilitates communication between the e-purse applet in the smart card and the payment server over a wired network;
>
> personalizing the e-purse applet by reading off data from the smart card to generate in the smart card one or more operation keys that are subsequently used to establish a secured channel between the e-purse applet and an e-purse security authentication module (SAM) external to the smart card, wherein said personalizing the e-purse applet comprises:
>
> establishing an initial security channel between the smart card and the e-purse SAM to install and personalize the e-purse applet in the smart card, and
>
> creating a security channel on top of the initial security channel to protect subsequent operations of the smart card with the e-purse SAM, wherein any subsequent operation of the emulator is conducted over the security channel via the e-purse applet.

Ex. 1001, 8:37–67.

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following ground:[1]

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[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. § 103. Because the '218 patent has an effective filing date before the March 16, 2013, effective date of the applicable AIA amendments, we apply the pre-AIA version of 35 U.S.C. § 103.

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–18	103(a)	Hayaashi,[2] Prisma[3]

Pet. 5. Petitioner relies on the Declaration of Gerald W. Smith (Ex. 1003) to support its challenges.

III. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner contends that a person having ordinary skill in the art "would have had at least a bachelor's degree in computer engineering, computer science, electrical engineering, or a related field, with at least one year of experience in the field of mobile payment technology," and "[a]dditional pertinent education might substitute for the requisite experience and vice versa." Pet. 4–5 (citing Ex. 1003 ¶¶ 34–36). Patent

[2] US 2005/0009564 A1, published Jan. 13, 2005 (Ex. 1004).
[3] Proton Prisma Guide, Proton World, July 28, 2004 (retrieved from https://web.archive.org/web/20040728190109if_/http://protonworld.st.com:80/downloads/pdfs/proton_prisma_guide.pdf (*see* Pet. 11)) (Ex. 1005).

Owner indicates that it uses Petitioner's proposed level of ordinary skill in the art for the purposes of its Preliminary Response only. Prelim, Resp. 7.

Based on our review of the record before us, we determine that Petitioner's stated level of ordinary skill in the art is reasonable because it appears consistent with the evidence of record, including the asserted prior art. Accordingly, for the purposes of this Decision, we adopt Petitioner's definition.

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner contends that, in the District Court Case, the parties have agreed to construe the claim terms "emulator" as a "hardware device or program that pretends to be another particular device or program that other components expect to interact with," "payment server" as a "server for enabling payments," and "security authentication module" or "SAM" as a "hardware or software module containing data to authenticate transactions." Pet. 6–7 (citing Ex. 1039, 1–2). Petitioner further contends that the parties are disputing the constructions of the claim terms "e-purse" and "e-purse applet" in the District Court Case, but the differences between the proposed

construction need not be resolved for this proceeding because its asserted grounds of unpatentability satisfy both Patent Owner's and Petitioner's proposed constructions. *Id.* at 7. Patent Owner agrees that, for the purposes of its Preliminary Response, claim construction is not required to resolve any issues. Prelim. Resp. 7.

On the present record, we do not discern a need to construe explicitly any claim language because doing so would have no effect on our analyses below of Petitioner's asserted grounds and will not assist in resolving the present controversy between the parties. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Asserted Obviousness Based on Hayaashi and Prisma

Petitioner asserts that claims 1–18 are unpatentable under 35 U.S.C. § 103(a) based on Hayaashi and Prisma. Pet. 10–61. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 7–17. We first summarize the references and then address the parties' contentions.

1. Hayaashi

Hiyaashi is entitled "Communication System, Settlement Management Apparatus and Method, Portable Information Terminal and Information Processing Method, and Program." Ex. 1004, code (54). Hiyaashi "provides a communication system that enables safe and easy addition of a function for use of credit card settlement services to a portable information terminal." *Id.* at code (57).

Figure 5, reproduced below, shows a diagram of the Hiyaashi system.

FIG. 5

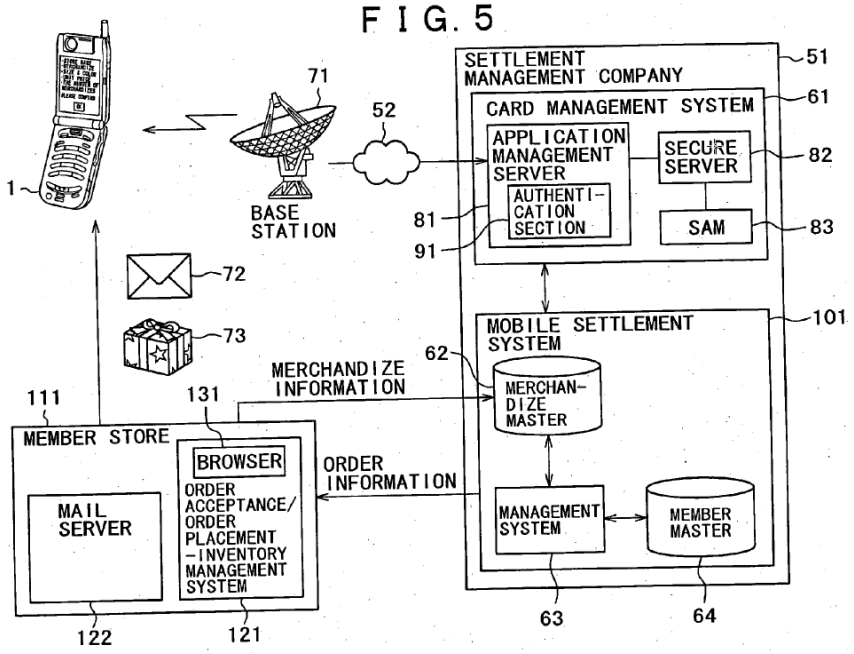


Figure 5 shows mobile phone 1, settlement management company 51, and the member store 111. *Id.* ¶¶ 99–100. Figure 8, reproduced below, is a schematic diagram of the mobile phone of Hiyaashi.

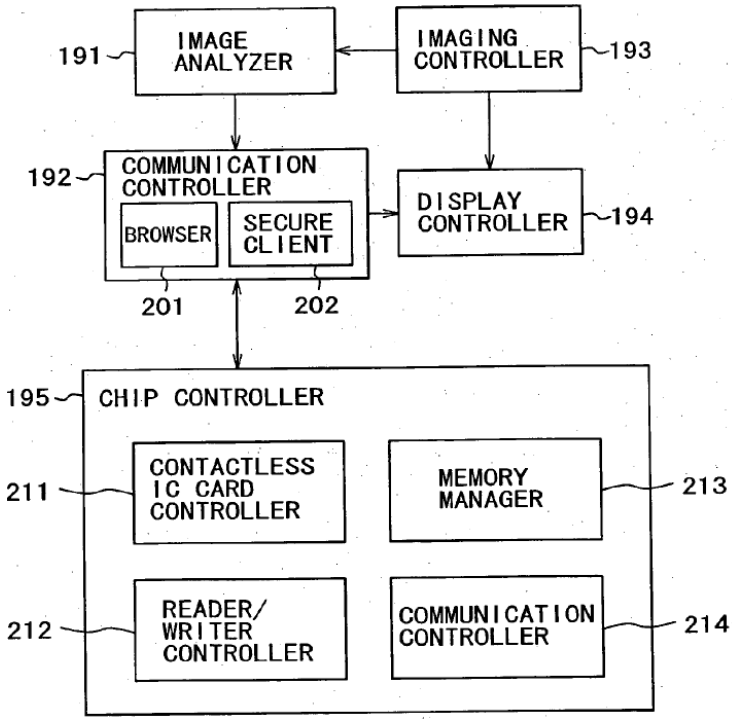


Figure 8 shows mobile phone 1, with communications controller 192, which operates by "executing a mobile settlement application downloaded from the application management server 81." *Id.* ¶ 127. Figure 8's "communication controller 192 controls the transmitter 162 and the receiver 163 and performs HTTP communication with the card management system 61 of the settlement management company 51 by using the browser 201." *Id.* ¶ 129. Figure 8 also shows chip controller 195, which "implements the function of serving as a contactless IC card by controlling the contactless IC card reader/writer chip 171." *Id.* ¶ 131.

2. Prisma

Prisma, titled "Proton Prisma Guide: Multi-Application Smart Card Technology and Solutions From Proton World," sets forth a twenty-page overview the Proton Prisma payment system. *See generally* Ex. 1005. It begins, "Proton Prisma is the new generation of smart card products from Proton World that offers the functionalities required by smart card issuers now and in the future." *Id.* at 1. Prisma describes that

> The core of the technology is CALC (the Card and Application LifeCycle manager). Proton Prisma CALC end-to-end (E2E) is a technological platform that manages the life cycle of multi-application smart cards, including personalisation and dynamic downloading of applications. CALC (E2E) provides a homogeneous card management and personalisation environment that is independent of card vendor and card type.

Id. at 2. Prisma describes that its architecture supports the dynamic downloading of applications and a Java Card™ Virtual Machine, and includes a standard e-purse application. *Id.* at 8. Prisma's specification is designed for "credit card payment, debit card payment, cash withdrawal from an ATM and charge-back transactions." *Id.* at 9. Also,

> The Proton Prisma e-purse is the successor to the successful Proton R3 e-purse. The e-purse complements the bank's other payment products, such as debit and credit cards and is mainly used as a replacement for coins and notes in small value payment environments such as shops, pay phones, parking meters and public transport.

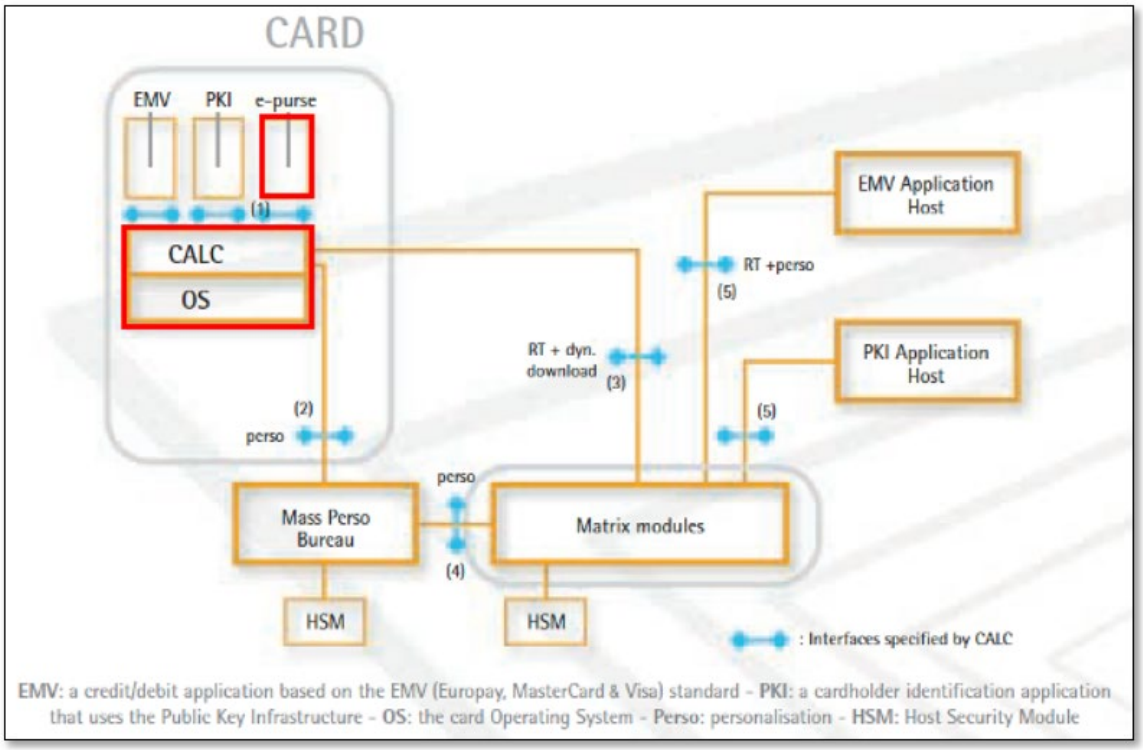
Id. at 12. Prism's "purse is a prepaid product," where "[e]lectronic value loaded on the cardholder's cards is debited from the cardholders account and transferred to a float account where the money remains available to the issuing bank until the corresponding value is presented by the merchant to the acquiring bank for payment." *Id.* at 14.

3. Independent Claims 1 and 11

Petitioner contends that the proposed combination of Hayaashi and Prisma discloses the limitations of independent claims 1 and 11. Pet. 19–42, 55–59. Petitioner also articulates reasons to combine the relied-upon aspects of Hayaashi and Prisma with a reasonable expectation of success. *Id.* at 15–19. Regarding the claim 1 limitation "providing a portable device including or communicating with a smart card pre-loaded with an emulator configured to execute a request from an e-purse applet and provide a response the e-purse applet is configured to expect," Petitioner maps the emulator to Prisma's preloaded Java Card™ Virtual Machine ("JCVM").[4] Pet. 25 (citing Ex. 1005, 12, 24; Ex. 1003 ¶¶ 175–179).

[4] Petitioner relies on the same analysis of this claim 1 limitation for the claim 11 limitation "a portable device including or communicating with a smart card pre-loaded with an emulator configured to execute a request from and provide a response an e-purse applet is configured to expect." Pet. 55. Accordingly, our analysis of the claim 1 limitation applies equally to the claim 11 limitation.

As an initial point, however, we note that Petitioner does not establish sufficiently that the proposed combination of Hayaashi and Prisma would incorporate Prisma's JCVM. *See id.* at 15–19. Instead, Petitioner asserts that one of ordinary skill in the art "would have simply needed to modify *Hayaashi's* smart IC card chip 171 to incorporate *Prisma's* core smart card elements, including CALC/OS and support for third-party e-purse applets." *Id.* at 17 (citing Ex. 1003 ¶¶ 158–167). More specifically, Petitioner provides an annotated diagram, reproduced below, to identify the smart card components from Prisma to be incorporated into Hayaashi's smart IC card chip 171.



Id. at 18 (citing Ex. 1005, 9). In this annotated diagram, Petitioner adds red borders to the three boxes labeled "e-purse," "CALC," and "OS,"[5] thereby

[5] "CALC" is Prisma's Card and Application LifeCycle manager, and "OS" is the card's operating system. Ex. 1005, 6, 9.

identifying these three components as the only components incorporated into Hayaashi. As such, Petitioner does not specify Prisma's JCVM as component that is incorporated into Hayaashi.

To the extent Petitioner's reference to "support for third-party e-purse applets" is meant to include Prisma's JCVM, such a broad statement that fails to specifically mention Prisma's JCVM lacks sufficient specificity to suggest that it would have been obvious to modify Hayaashi to include Prisma's JCVM. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) ("In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." (citing 35 U.S.C. § 312(a)(3)); *see also Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.'" (quoting 35 U.S.C. § 312(a)(3))).

For these reasons, we determine that the Petition fails to explain adequately why one of ordinary skill in the art would have been led to incorporate Prisma's JCVM into Hayaashi.

Furthermore, even if it would have been obvious to incorporate Prisma's JCVM into Hayaashi, Patent Owner disputes that the combination would satisfy the claimed requirement of an "emulator configured to execute a request from an e-purse applet and provide a response the e-purse applet is configured to expect," arguing that Petitioner fails to identify an e-purse applet and merely assumes the existence of a "third-party e-purse applet." Prelim. Resp. 11. We agree with Patent Owner because, although the Petition states that "[i]n the context of a third-party e-purse applet, this Java

software runs a downloaded applet to 'emulate' an e-purse for e-commerce and m-commerce transactions," this statement does not explain adequately why one of ordinary skill in the art would have provided a third-party e-purse applet. *See* Pet. 25–26 (citing Ex. 1003 ¶¶ 175–179).

In the section discussing the preamble of claim 1, however, Petitioner argues that Prisma provides for dynamic downloading of third-party applets and applications, "such that the Prisma card can be 'specially designed to respond to the needs of the sectors in which smart cards play or will play an important role.'" *Id.* at 22–23 (citing Ex. 1005, 6–10; quoting Ex. 1003 ¶ 173). Then, Petitioner argues that, because Prisma's card can support multiple implementation-specific e-purses, one of ordinary skill in the art "would have been motivated to download implementation-specific e-purses to facilitate *Prisma's* goal of multi-sector interoperability." *Id.* at 23 (citing Ex. 1003 ¶¶ 168–174).

This assertion does not state explicitly that the combination would include an e-purse *applet* as opposed to an e-purse. But even assuming for the sake of argument that one of ordinary skill in the art would have included an e-purse applet, we are not persuaded that the emulator (i.e., Prisma's JCVM) would have been configured to execute a request from the e-purse applet and provide a response the e-purse applet is configured to expect. For this aspect of the claim limitation, Petitioner, relying on the testimony of Mr. Smith, asserts that "[t]he JCVM is configured to execute a request from a downloaded Java e-purse applet and provide a response the e-purse applet is configured to expect. More particularly, the 'Java Card environment enables smart cards to run Java applets.'" Pet. 26 (citing Ex. 1003 ¶¶ 175–179). Mr. Smith testifies that:

> It is . . . my opinion that the JCVM "execute a request from an e-purse applet and provides a response the e-purse applet is configured to expect" as claimed because the JCVM ensures that an applet operates as expected and that the applet's requests are handled as the applet expects regardless of the underlying hardware platform.

Ex. 1003 ¶ 178. This testimony, however, is entitled to little weight because Mr. Smith fails to provide the underlying basis for his opinion. *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."); *see also Nobel Biocare Services AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1382 (Fed. Cir. 2018) (explaining that the Board can reject arguments based on expert testimony that lacks specificity or detail). The assertion that "the JCVM ensures that an applet operates as expected" is a conclusory statement not supported sufficiently by any objective evidence or analysis. Accordingly, we do not find Mr. Smith's testimony of this point persuasive. Moreover, neither the Petition nor Mr. Smith explains sufficiently how Hayaashi or Prisma disclose providing an e-purse applet that the JCVM would interact with in the manner claimed.

For the above reasons, we determine Petitioner has not met its burden to show a reasonable likelihood it would prevail with respect to the contention that claims 1 and 11 are unpatentable over the combination of Hayaashi and Prisma.

4. Dependent Claims 2–10 and 12–18

Claims 2–10 depend from claim 1 and, thus, contains all the limitations of claim 1. Claims 12–18 depend from claim 11 and, thus, contains all the limitations of claim 11.

Petitioner's challenges to dependent claims 2–10 and 12–18 do not overcome the deficiencies discussed above with respect to the challenge to independent claims 1 and 11. *See* Pet. 42–54, 59–61. Accordingly, for the same reasons discussed above in connection with claims 1 and 11, we find Petitioner has not met its burden to show a reasonable likelihood that claims 2–10 and 12–18 are unpatentable over the combination of Hayaashi and Prisma.

IV. CONCLUSION

For the foregoing reasons, we do not institute *inter partes* review.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* as to all challenged claims of the '218 patent; and

FURTHER ORDERED that no *inter partes* review is instituted.

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