UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

CARDWARE INC.,
Patent Owner.

IPR2023-00211
Patent 10,339,520 B2

Before BRIAN J. MCNAMARA, ELIZABETH M. ROESEL, and SHARON FENICK, *Administrative Patent Judges.*

ROESEL, *Administrative Patent Judge.*

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

I. INTRODUCTION

A. Background and Summary

Samsung Electronics Co., Ltd. ("Petitioner") filed a Petition (Paper 3, "Pet.") seeking an *inter partes* review of claims 18–24 (the "challenged claims") of U.S. Patent No. 10,339,520 B2 (Ex. 1001, "the '520 Patent"). CardWare Inc. ("Patent Owner") filed a Preliminary Response. Paper 7 ("Prelim. Resp."). With prior authorization, Petitioner filed a Reply (Paper 9, "Prelim. Reply"), and Patent Owner filed a Sur-reply (Paper 10, "Prelim. Sur-reply").

Pursuant to our delegated authority, we may not institute an *inter partes* review "unless . . . the information presented in the petition . . . and any 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." 35 U.S.C. § 314(a) (2018); 37 C.F.R. § 42.4(a) (2022). After considering the information presented in the Petition, the Preliminary Response, the Preliminary Reply, and Preliminary Sur-reply, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing that at least one of the challenged claims is unpatentable and that discretionary denial is not appropriate. Therefore, we grant institution of an *inter partes* review.

Our findings and conclusions below are based on the record developed thus far. This is not a final decision as to the patentability of any challenged claim. Any final decision will be based on the full record developed during trial.

B. Related Matters

The parties identify the following as a related matter: *CardWare Inc. v. Samsung Electronics Co., Ltd.*, No. 2:22-cv-00141 (E.D. Tex.) ("district court litigation"). Pet. 65; Paper 4, 1 (Patent Owner's mandatory notices).

The parties also identify IPR2023-00210, which involves the same parties and the same patent. Pet. 75; Paper 4, 1.

C. The '520 Patent (Ex. 1001)

The '520 Patent is titled, "Multi-functional credit card type portable electronic device" and discloses methods of using such a device to perform transactions, including transactions using an automated teller machine (ATM). Ex. 1001, codes (54), (57), 12:44–51. According to the '520 Patent, existing types of credit cards have "security limitations" and are "susceptible to theft and/or compromise." *Id.* at 1:63–67. The '520 Patent addresses these concerns with a credit card device having various security features, including "the capability of producing a limited-duration credit card number for performing transactions using accounts of the card." *Id.* at 10:4–7.

D. Illustrative Claim

Petitioner challenges claims 18–24 of the '520 Patent, of which claim 18 is independent. Pet. 1. Claim 18 is illustrative and is reproduced below.

> 18. [18pre] A method of facilitating and authorizing an automated teller machine (ATM) transaction involving an electronic device, wherein an electronic device transacts wirelessly with an ATM, the method comprising:
>
> [18a] providing, by the electronic device, at least one of account information identification and authorization, for the ATM transaction and,

[18b] wherein the electronic device comprises a user interface comprising: displays touch sensors and buttons and,

[18c] recording a user selection from the user interface of the electronic device of a user selected account from which the electronic device is operable to wirelessly convey with an ATM and,

[18d] recording a user selection from the user interface of the electronic device of a user selected account operation, wherein said user selected account operation is selected from a list of funds transfer operations and,

[18e] wherein user input information from the user interface includes at least one of a set comprising: identification, account, amount of currency, operation and authorizing information and,

[18f] wherein the identification, selection, information and authorizing operations are exchanged wirelessly between the electronic device and the ATM via NFC and,

[18g] wherein the ATM is configured for performing the user selected account operation using the identification and authorizing information and,

[18h] wherein the identification and authorizing information exchanged wirelessly between the electronic device and the ATM comprises: statically and dynamically generated limited-use number portions and,

[18i] wherein said static and dynamic information is combined to perform the user selected ATM operation.

Ex. 1001, 18:11–42 (bracket designations and paragraphs adjusted); *see* Pet. 20–41 (Petitioner's identification of claim elements).

E. Asserted Grounds and Evidence

Petitioner asserts the following grounds of unpatentability:

Claims Challenged	35 U.S.C. §[1]	Reference(s)/Basis
18–21, 24	103(a)	Gill,[2] Smith,[3] Kay[4]
18–24	103(a)	Gill, Smith, Kay, Gomez[5]

Petitioner submits the Declaration of Michael I. Shamos, Ph.D. (the "Shamos Declaration"), in support of the Petition. Ex. 1003.

II. DISCRETION UNDER 35 U.S.C. § 314(A)

A. Legal Standards

Patent Owner argues that we should exercise discretion to deny institution under 35 U.S.C. § 314(a) because the factors identified in *Apple, Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"), weigh in favor of denying institution. Prelim. Resp. 28–33; Prelim. Sur-reply. Petitioner argues we should not discretionarily deny institution under *Fintiv*. Pet. 61–65; Prelim. Reply.

The precedential decision in *Fintiv* identifies a non-exclusive list of factors parties may consider addressing where there is a related, parallel

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the '520 Patent claims the benefit of a provisional application filed before that date, we refer to the pre-AIA version of § 103. Ex. 1001, code (60).

[2] Ex. 1010, US 9,098,846 B2, issued August 4, 2015 ("Gill").

[3] Ex. 1011, US 2013/0232083 A1, published September 5, 2013 ("Smith").

[4] Ex. 1009, US 2013/0124410 A1, published May 16, 2013 ("Kay").

[5] Ex. 1005, US 9,600,808 B1, issued March 21, 2017 ("Gomez").

district court action to determine whether such action provides any basis for discretionary denial. *Fintiv*, 5–16. Those factors include:

> 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.

Id. at 5–6.

In evaluating the 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. The Director has issued additional guidance on the application of *Fintiv*. *See* Katherine K. Vidal, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022)[6] ("*Fintiv* Memo"). Additionally, we are guided by the precedential decisions of the Director in *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064, Paper 102, 49–50 (Oct. 4, 2022) (precedential) and *CommScope Techs. LLC v. Dali Wireless, Inc*, IPR2022-01242, Paper 23 (Feb. 27, 2023) (precedential) ("*CommScope*").

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

We are instructed to consider compelling merits under *Fintiv* factor six only after a determination that the first five *Fintiv* factors favor discretionary denial. *CommScope*, 4–5. Thus, we begin by considering the first five *Fintiv* factors.

B. Fintiv Factors

1. Factor 1 - Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

"A district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts." *Fintiv*, 6. *Fintiv* indicated that, in previous Board decisions, the existence of a district court stay pending Board resolution of an *inter partes* review has weighed strongly against discretionary denial, while a denial of such a stay request sometimes weighs in favor of discretionary denial. *Id.* at 6–8.

Patent Owner notes that a stay was requested and not granted in the district court litigation, and asserts that this factor should be viewed as neutral. Prelim. Resp. 28; Ex. 2003.

Petitioner notes that the dismissal of the stay request was without prejudice, and that it maintains the right to move for a stay if we institute. Prelim. Reply 1, 2. Petitioner argues that the factor should be considered neutral or to disfavor discretionary denial. *Id.* at 2.

The court in the district court litigation noted in its denial of the stay request that it was following "the universal practice" in the district, to deny a stay based on post-grant review requests where institution decisions have not yet been issued, and provided no additional reasoning or indication of future action with respect to any potential renewal of the stay request. Ex. 2003. Because, "[i]n the absence of specific evidence, we will not attempt to predict" whether a district court would stay "based on a variety of

circumstances and facts beyond our control and to which the Board is not privy," we find this factor to be neutral. *See Sand Revolution II, LLC v. Cont'l Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) ("*Sand Revolution*").

2. Factor 2 - Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision

The proximity factor in *Fintiv* asks us to evaluate our discretion in light of a trial date that has been set in a parallel litigation. *See Fintiv*, 3, 5 ("*NHK* applies to the situation where the district court has set a trial date to occur earlier than the Board's deadline to issue a final written decision in an instituted proceeding."; "When the patent owner raises an argument for discretionary denial under *NHK* due to an earlier trial date, the Board's decisions have balanced the following factors . . . .") (citing *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential)("*NHK*")). As noted above in the discussion of the first factor, *Fintiv* cites concern regarding "inefficiency and duplication of efforts." *Id.* at 6. In its analysis of the proximity factor, *Fintiv* echoes that concern in its guidance that "[i]f the court's trial date is at or around the same time as the projected statutory deadline or even significantly after the projected statutory deadline, the decision whether to institute will likely implicate other factors discussed herein, such as the resources that have been invested in the parallel proceeding." *Id.* at 9. Similarly, in *NHK*, the Board expressed the concern that a trial before the deadline for a final written decision addressing the same prior art and arguments would have undermined the Board's objectives of providing an effective and efficient alternative to district court litigation. *See NHK*, 20 (citing *General Plastic*

Indus. Co., Ltd. v. Cannon Kabushiki Kaisha, IPR2016-01357, Paper 19 at 16–17 (PTAB Sept. 6, 2017 (precedential))).

We are instructed that

> when analyzing the proximity of the court's trial date under factor two of *Fintiv*, when other relevant factors weigh against exercising discretion to deny institution or are neutral, the proximity to trial should not alone outweigh all of those other factors. Parties may present evidence regarding the most recent statistics on median time-to-trial for civil actions in the district court in which the parallel litigation resides for the PTAB's consideration. Where the parties rely on time-to-trial statistics, the PTAB will also consider additional supporting factors such as the number of cases before the judge in the parallel litigation and the speed and availability of other case dispositions.

Fintiv Memo, 8–9 (internal citations and footnote deleted).

At the time of filing the Petition, Petitioner argued that given the district court's median time-to-trial data and the anticipated schedule if we institute, the likely disposition of the district court litigation would be anticipated in the same period of time as a final written decision in this proceeding. Pet. 62 (citing Ex. 1103, 35).

Patent Owner contends that as the docket control order sets jury selection for February, 2024, the trial date precedes the anticipated final written decision deadline by four months. Prelim. Resp. 29 (citing Ex. 2001). Patent Owner additionally argues that, if the Board relies on median time-to-trial, then we should use specific time-to-trial data for the presiding judge, which would indicate an even earlier trial date than that scheduled in the docket control order. *Id.* at 30 (citing Ex. 2002, 1).

We "generally take courts' trial schedules at face value absent some strong evidence to the contrary," and here neither party presents strong evidence casting doubt on the trial date set in the district court's order.

Because the trial in the district court litigation is scheduled to begin four months before our deadline to reach a decision, this factor weighs marginally in favor of discretionary denial. *Apple v. Fintiv*, IPR2020-00019, Paper 15, 13 (PTAB May 13, 2020) (informative).

3. Factor 3 - Investment in the parallel proceeding by the court and the parties

If, at the time of the institution decision, the district court has issued substantive orders related to the challenged patent, such as a claim construction order, this fact weighs in favor of denial. *See Fintiv*, 9–10. On the other hand, if the district court has not issued such orders, this fact weighs against discretionary denial. *Id.* at 10.

Petitioner argues that the bulk of investment in the district court litigation has yet to occur, and that no part of claim construction or document production had occurred at the time of the filing of the Petition. Pet. 63. Petitioner further argues that it was diligent in filing the Petition and that its diligence "heavily favors institution." Prelim. Reply 3.

Patent Owner argues that by the time of our decision, document production will be substantially complete and "the claim-construction process [will] be underway and completed shortly thereafter." Prelim. Resp. 30 (citing Ex. 2001, 3–4).

The docket control order shows that the claim construction hearing is not scheduled until August 1, 2023, and that substantial deadlines for the parties related to claim construction are still upcoming. Ex. 2001, 3. *Fintiv* also directs us to consider whether "the petitioner filed the petition expeditiously." *Fintiv*, 11. While we are mindful of the investment of the parties to date, we find that, at this time, substantial work remains for the parties and no substantive orders related to the challenged patent have been

issued by the district court. Additionally, on the record before us the filing of the Petition was expeditious. We determine this factor weighs against exercising discretion to deny institution.

4. Factor 4 - Overlap between issues raised in the petition and in the parallel proceeding

"[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial." *Fintiv*, 12. "Conversely, if the petition includes materially different grounds, arguments, and/or evidence than those presented in the district court, this fact has tended to weigh against exercising discretion to deny institution under *NHK*." *Id.* at 12–13. A stipulation as in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential as to § II.A), if one is entered, would be highly relevant. "Consistent 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." *Fintiv* Memo 3 (footnote omitted).

Petitioner offers, in the Petition, a stipulation that, if IPR is instituted, "it will not pursue in the Related Litigation any invalidity grounds against the Challenged Claims of the '520 patent that are the same as those raised in this Petition." Pet. 64. It later offers an additional stipulation that "if this IPR is instituted, Petitioner will not pursue an invalidity defense in the E.D. Texas litigation with respect to the claims of the '520 Patent in the instituted IPR based on (i) any of the same grounds in the instituted IPR or (ii) any prior art reference that forms the basis of any ground in the instituted IPR."

Prelim. Reply 1; Ex. 1110. Petitioner argues that this stipulation "leaves only meaningfully different prior art available for use in the E.D. Texas litigation." Prelim. Reply 3; *see* Ex. 3001 (Petitioner's email to the Board relating to its stipulation).

Patent Owner argues that, in the new stipulation, Petitioner only restricts itself from pursuing "in district court the same grounds or the specific references in those grounds," but "leaves Petitioner free to pursue related references that might have the same (or substantially the same) disclosure" as the references asserted here, such as continuations and foreign counterparts. Prelim. Sur-reply 1 (emphasis omitted). Patent Owner argues that Petitioner's stipulation has "no practical effect" and, because Petitioner has not offered a *Sotera* stipulation, factor 4 favors denial. *Id.* at 2.

While not a *Sotera* stipulation, Petitioner's stipulation appears to be similar to that in *Sand Revolution*. *Sand Revolution II, LLC v. Cont'l Intermodal Grp. Trucking LLC*, IPR2019-01393, Paper 24 at 11–12 (PTAB June 16, 2020) (informative) ("*Sand Revolution*") (finding that a stipulation not to pursue the same grounds in the parallel litigation "mitigates to some degree the concerns of duplicative efforts"). We recognize that *Sand Revolution*-type stipulations are narrower in scope than *Sotera*-type stipulations. However, Petitioner's stipulation still reduces potential overlap with the district court litigation. In *Sand Revolution*, such a stipulation weighed marginally in favor of not exercising discretion. *Sand Revolution*, 12.

Additionally, we note that we have not been apprised by either party whether, in fact, the same art and arguments are anticipated to be the subject of the district court litigation. *See Fintiv*, 12.

We determine this factor weighs marginally against exercising discretion to deny institution.

5. Factor 5 - Whether the petitioner and the defendant in the parallel proceeding are the same party

If the petitioner is unrelated to the defendant in the parallel proceeding, that might weigh against discretionary denial. *See Fintiv*, 13–14.

The parties agree that Petitioner is the defendant in the related district court litigation. Pet. 64; Prelim. Resp. 32.

As with *Fintiv* factor 2, therefore, this factor weighs marginally in favor of exercising our discretion to deny the Petition.

C. Conclusion

We have considered the circumstances and facts before us in view of the first five *Fintiv* factors. Because our analysis is fact-driven, no single factor is determinative of our conclusion. Considering these five *Fintiv* factors, we determine that they do not favor a discretionary denial. As we do not find that the first five *Fintiv* factors favor discretionary denial, we therefore do not make a determination regarding compelling merits under *Fintiv* factor 6, and our consideration ends with this conclusion. *CommScope*, 4–5.

III. REASONABLE LIKELIHOOD 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 patent claim is unpatentable under 35 U.S.C. § 103 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 based on underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when presented, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

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. 2006) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")). Petitioner cannot 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. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art ("POSITA") would have had "(1) a bachelor's degree in computer science, computer engineering, electrical engineering, or a related field, and (2) one to two years of experience working with payment processing and/or digital authentication systems, including familiarity with short-range wireless technology." Pet. 6 (citing Ex. 1003 ¶¶ 39–44). According to Petitioner, "[g]raduate education could substitute for professional experience, or significant experience in the field could substitute for formal education." *Id.*

For purposes of the Preliminary Response, Patent Owner does not dispute Petitioner's definition of a POSITA. Prelim. Resp. 14.

For purposes of this Decision, we apply Petitioner's definition of a POSITA, which is consistent with the scope and content of the '520 Patent and the asserted prior art.

C. Claim Construction

In an *inter partes* review, we apply the same claim construction standard as would be used by a district court to construe a claim in a civil action involving the validity or infringement of a patent. 37 C.F.R. § 42.100(b). Under that standard, claim terms are given their ordinary and customary meaning, as would have been 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 of record. *Id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–19 (Fed. Cir. 2005) (en banc); *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012). "The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy."

Realtime Data, LLC v. Iancu, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

The parties assert that claim construction is not required. Pet. 2–3; Prelim. Resp. 14. We determine that no express claim construction is necessary for purposes of this Decision.

D. Petitioner's References

1. Gill (Ex. 1010)

Gill discloses an ATM equipped with a contactless interface for interacting with an external apparatus, such as a mobile device. Ex. 1010, codes (54), (57). Figure 7 is reproduced below.

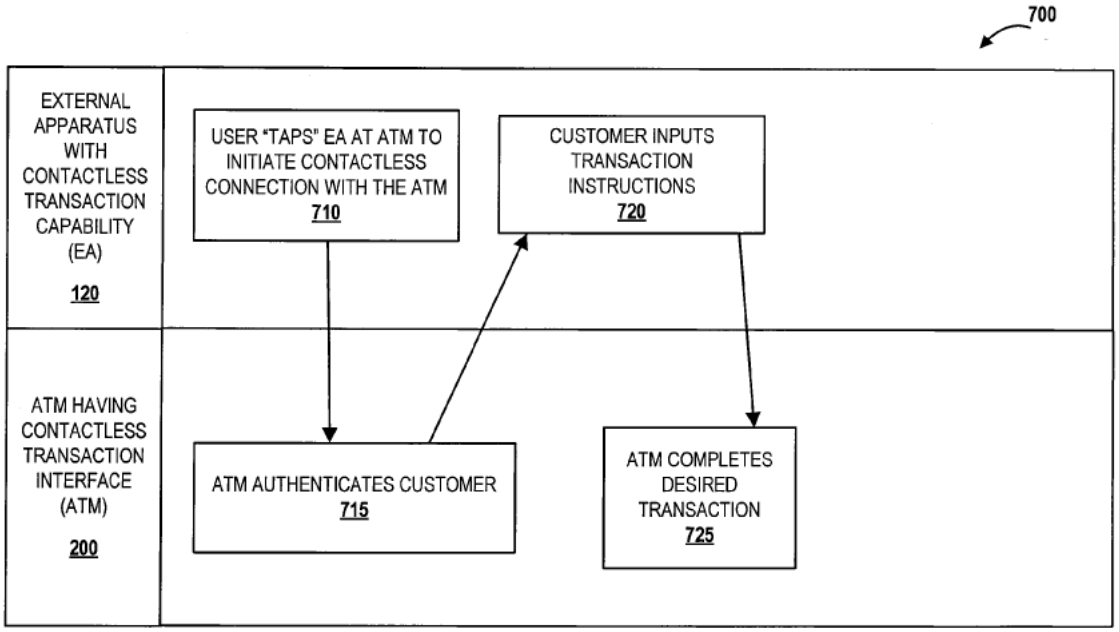

FIG. 7

Gill Figure 7 illustrates a method for contactless transmission from external apparatus 120 to ATM 200. Ex. 1010, 3:25–27, 13:52–55. At block 710, a customer initiates a contactless connection, such as a near field

communication ("NFC") connection, with contactless interface of ATM 200 by tapping ATM 200 with external apparatus 120 or positioning external apparatus 120 in close proximity of ATM 200. *Id.* at 14:1–8. At block 715, ATM 200 authenticates the customer, which usually requires the customer to enter a PIN associated with the account. *Id.* at 14:9–13. At block 720, the customer inputs instructions to ATM 200 to execute the desired transaction, such as for example, withdrawing funds, depositing funds, transferring funds, balance checks, or ordering checks. *Id.* at 14:31–36. At block 725, ATM 200 completes the customer's desired transaction. *Id.* at 14:36–37.

2. Smith (Ex. 1011)

Smith discloses using a mobile device to conduct a contactless payment transaction. Ex. 1011 ¶¶ 2–6. Smith discloses processing financial transactions funded via mobile cloud accounts. *Id.* ¶¶ 15, 32, Fig. 1. According to Smith, a mobile device, such as a smart phone, stores mobile cloud account data, including a mobile cloud account number ("MCA") that is associated with a real account number ("RCA"). *Id.* ¶¶ 33, 34. The MCA enables the user to conduct a financial transaction without storing the RCA on the mobile device, thereby reducing the potential for fraud. *Id.* ¶¶ 32, 34.

Figure 6 is reproduced below.

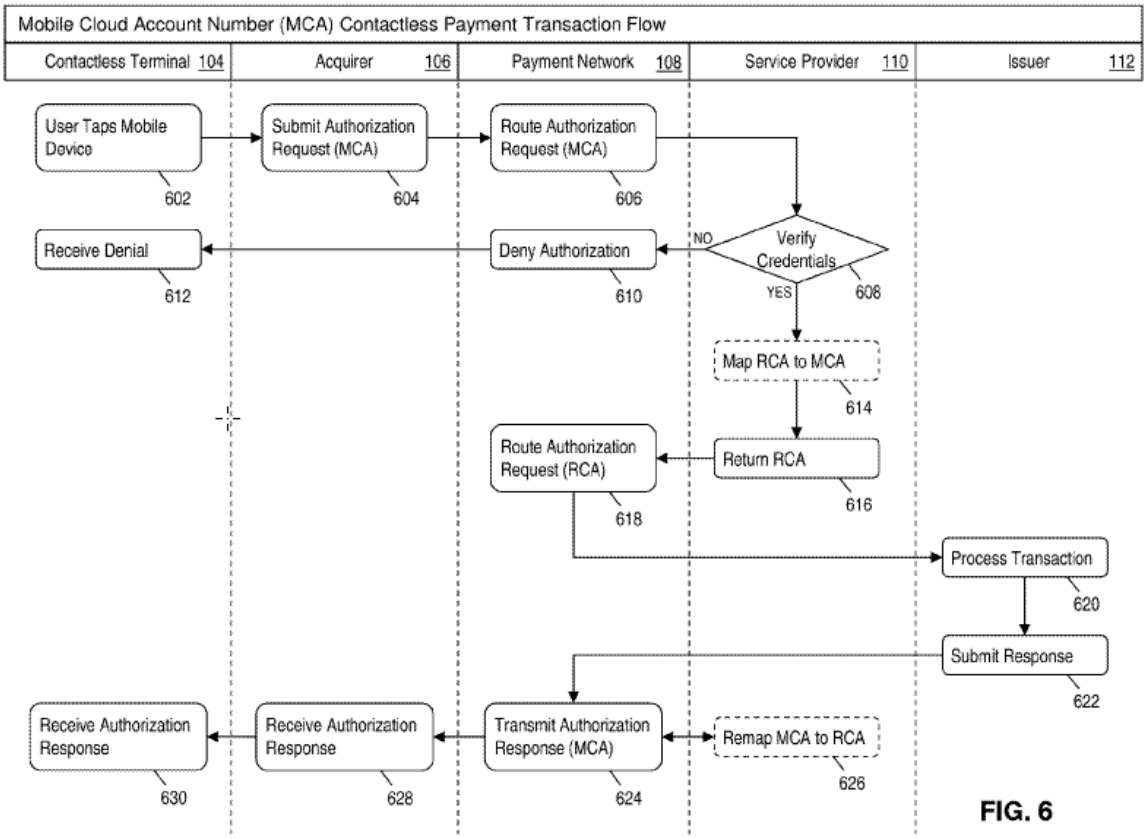

FIG. 6

Smith Figure 6 illustrates a method for processing a contactless payment transaction funded via a mobile cloud account. Ex. 1011 ¶¶ 20, 66. In step 602, payment credentials stored on a mobile device are transmitted via near field communication to contactless terminal 104. *Id.* ¶ 67. According to Smith, "[t]he payment credentials may include a payment cryptogram, such as an authorization request cryptogram or dynamic card validation code, generated based on at least a portion of the mobile cloud account data stored" in the mobile device. *Id.* The payment credentials may also include a personal identification number ("PIN") input by the user, either into the mobile device or the terminal. *Id.* ¶ 68. In step 604, contactless terminal 104 forwards the payment credentials, including the MCA and payment cryptogram, to acquirer 106, who then submits an authorization request to payment network 108. *Id.* ¶ 67.

Payment network 108 routes the authorization request to service provider 110, who verifies the MCA and/or payment cryptogram or other credentials. *Id.* ¶¶ 69, 70, Fig. 6 (steps 606, 608). If the credentials are successfully verified, then service provider 110 maps the MCA to the corresponding RCA and returns the RCA to payment network 108, which routes the authorization request to issuer 112. *Id.* ¶ 71, Fig. 6 (steps 614, 616, 618). Issuer 112 processes the transaction and submits a response to payment network 108. *Id.* ¶ 72, Fig. 6 (steps 620, 622). After the RCA is remapped and replaced with the corresponding MCA, payment network 108 transmits the authorization response to acquirer 106, who forwards it to contactless terminal 104 for finalization of the transaction. *Id.* ¶ 73, Fig. 6 (steps 624, 626, 628, 630).

3. Kay (Ex. 1009)

Kay discloses a system and method for conducting a transaction at a financial transaction terminal using a mobile device as a user interface while communicating with the terminal. Ex. 1009, codes (54), (57), ¶ 4. According to Kay, when a mobile device receives a request to conduct a transaction at a financial transaction terminal, such as an ATM, the display of the mobile device presents a user interface labeled "Citi ATM" and presents options for "withdraw" and "deposit." *Id.* ¶ 40, Fig. 4B.

4. Gomez (Ex. 1005)

Gomez discloses a secure payment card that generates an authentication cryptogram, which is unique for each attempted use of the payment card to make a transaction and which expires within a short period of time thereafter. Ex. 1005, codes (54), (57), 1:58–63, 5:13–18, 5:48–57, Figs. 2, 9, 10. "The authentication cryptogram is based at least upon a seed

value stored within the payment card and a temporal signal value, such as the date/time of the attempted purchase, and is preferably valid for only a short lifetime after the date/time." *Id.* at 5:25–29; *see also id.* at 1:64–2:4, 14:36–17:12 (describing authentication cryptogram).

E. Petitioner's Challenges

1. Independent Claim 18

Petitioner contends that claim 18 would have been obvious based on Gill, Smith, and Kay, or alternatively, based on Gill, Smith, Kay, and Gomez. Pet. 1, 11–42, 51–56. Patent Owner opposes. Prelim. Resp. 15–26.

Petitioner contends that Gill discloses a method of using a mobile device to conduct a contactless transaction at an ATM and that it would have been obvious to modify Gill in view of Smith such that the mobile device conveys payment credentials to the ATM, including an MCA, a payment cryptogram, and a PIN. Pet. 11–12 (citing Ex. 1003 ¶¶ 419–422). Petitioner contends that "a POSITA would have sought to use payment credentials like Smith's in the combination with Gill (and Kay . . .) to realize predictable security improvements." Pet. 13 (citing Ex. 1003 ¶ 423). Petitioner additionally contends that "it would have been obvious to a POSITA to apply in the combination Kay's suggestion for a graphical user interface (GUI) on a mobile device, which would allow a user to select a particular type of transaction from a list of available types." Pet. 16 (citing Ex. 1003 ¶ 427). Petitioner further contends that "a POSITA would have been motivated to further modify the Gill-Smith-Kay combination . . . in view of Gomez such that the payment cryptogram would be generated using a temporal signal and cryptographic methods like those described in Gomez." Pet. 53 (citing Ex. 1003 ¶ 474).

Patent Owner argues that Petitioner's Gill-Smith-Kay combination fails to disclose a dynamically generated number, as required by limitation [18h]. Prelim. Resp. 15–17. Patent Owner additionally argues that Petitioner fails to show that it would have been obvious to combine Gill, Smith, and Kay and "it would not have been obvious for a POSITA to add the teachings of Gomez to the Gill-Smith-Kay combination." *Id.* at 17–22, 23–26.

Our analysis begins with the disputed issues.

a) Element [18h]

Claim element [18h] recites: "wherein the identification and authorizing information exchanged wirelessly between the electronic device and the ATM comprises: statically and dynamically generated limited-use number portions." Ex. 1001, 18:39–42.

Petitioner contends that, based on Smith, it would have been obvious for the wireless exchange of information between a mobile device and an ATM to include transmission of an MCA and a payment cryptogram from a mobile device to a terminal. Pet. 38–39 (citing Ex. 1003 ¶ 457; Ex. 1011 ¶¶ 51, 67, Fig. 6). Petitioner contends that Smith's MCA is a statically generated limited-use number portion and that Smith's payment cryptogram would have been understood to be a dynamically generated limited-use number portion. Pet. 39–41 (citing Ex. 1003 ¶¶ 458–460; Ex. 1011 ¶¶ 34, 40, 70–72, 63, 67, 86, 96, 97, 103, Fig. 6).

Patent Owner argues that "Smith fails to disclose that the payment cryptogram is (i) 'dynamically generated' and (ii) a 'limited-use number.'" Prelim. Resp. 16–17.

Based on the preliminary record, we find sufficient evidentiary support for Petitioner's contention for claim element [18h]. For example, Smith discloses that "[t]he payment credentials may include a payment cryptogram, such as an authorization request cryptogram or dynamic card validation code." Ex. 1010 ¶ 67. Petitioner also submits Dr. Shamos' testimony.

> The significance of the cryptogram having a dynamic, limited-use would have been apparent to a POSITA, as it was commonly understood that updating the cryptogram on a frequent basis (e.g., with each transaction) protects against the risk of payment credentials (including the MCA and cryptogram) from a prior transaction being re-used by an illicit actor to conduct a fraudulent transaction with the same credentials.

Ex. 1003 ¶ 459 (citing Ex. 1005, 1:58–63, 5:15–16, 7:41–43, 8:6–9, 3:36–39 [*sic*, 8:36–39], 14:3–4, Figs. 3, 4; Ex. 1012,[7] code (57), ¶¶ 98–106, Fig. 6; Ex. 1032[8] ¶ 29).

According to Patent Owner, Petitioner "concedes that Smith does not enable its disclosure of a 'dynamic card validation code.'" Prelim. Resp. 16 (citing Pet. 52). We disagree. As part of its rationale for adding Gomez to the combination of Gill, Smith, and Kay, Petitioner asserts, "Smith does not expressly disclose many details as to how the payment cryptogram would be made to change across transactions or how the cryptogram would be calculated." Pet. 52. Petitioner also asserts that "the use of dynamic cryptograms in electronic transaction systems had been known for many years before the Critical Date of the '520 Patent." *Id.* Our reviewing court instructs that "prior art patents and publications enjoy a presumption of

[7] US 2012/0317035, published December 13, 2012 ("Royyuru").

[8] US 2005/0043997, published February 24, 2005 ("Sahota").

enablement, and the patentee/applicant has the burden to prove nonenablement for such prior art." *Apple Inc. v. Corephotonics, Ltd.*, 861 F. App'x 443, 450 (Fed. Cir. 2021). At this stage of the proceeding, Patent Owner has not met its burden to show nonenablement for Smith.

Based on the preliminary record, we find sufficient support for Petitioner's contention that Smith's payment cryptogram is generated for each transaction. *Compare* Pet. 40, *with* Prelim. Resp. 17 (disputing this contention). Smith discloses that the payment credentials are transmitted to the ATM after a transaction is initiated by tapping the ATM with the mobile device. Ex. 1011 ¶ 67, Fig. 6. In addition, Dr. Shamos testifies that "updating the cryptogram on a frequent basis (e.g., with each transaction) protects against the risk" of reuse of the payment credentials to conduct a fraudulent transaction. Ex. 1003 ¶ 459.

b) Reason to Combine Gill and Smith

Petitioner contends that a POSITA would have sought to improve the security of Gill's contactless mobile phone ATM transaction by requiring submission of payment credentials, including an MCA and a payment cryptogram, as taught by Smith. Pet. 13–16 (citing Ex. 1003 ¶¶ 423–426; Ex. 1010, 1:34–36, 4:35–55; Ex. 1011 ¶¶ 7, 29, 34, 40, 67, 70). Patent Owner argues that Gill teaches away from Petitioner's combination by distinguishing ATM transactions from POS transactions, that a POSITA would not add an additional layer of security to Gill's ATM transaction, and that there are no gaps in Gill that would cause a POSITA to look to Smith. Prelim. Resp. 18–22.

For purposes of institution, we find that Petitioner asserts a sufficient rationale for combining Gill and Smith, as summarized above, and that

Petitioner's rationale is sufficiently supported by the cited prior art and the Shamos Declaration.

On this record, we do not find that Gill teaches away from Petitioner's proposed combination. "A reference 'teaches away' when it 'suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.'" *Santarus, Inc. v. Par Pharm., Inc*., 694 F.3d 1344, 1354 (Fed. Cir. 2012) (quoting *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006); *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)). Gill states that "an ATM transaction is vastly different than a simple POS payment transaction." Ex. 1010, 4:56–58. In our preliminary view, however, Gill does not teach away from combining an ATM transaction with features of a POS transaction because that is exactly what Gill teaches. On this record, it appears that Gill's statements distinguishing ATM transactions from POS transactions would have been recognized as a description of the state of the art before Gill's system. It appears that Gill makes these distinctions as self-serving support for patentability of the disclosed system, which combines an ATM transaction with features of a POS transaction, namely contactless transmission from an external apparatus to the ATM. *See id.* at 4:35–38 ("As a general matter, automated teller machine (ATM) users have not enjoyed the benefits of contactless transactions, while numerous point-of-sale (POS) contactless payment terminals have been made available.").

Patent Owner argues that Petitioner "fails to explain why a POSITA would find Gill's security verification step insufficient such as to warrant combining it with Smith which would require a significantly a more complicated payment network." Prelim. Resp. 20. Similarly, Patent Owner argues that "Gill has no 'gap'; rather, Gill describes a complete set of

information needed to initiate an ATM transaction, and as such, there would have been no reason for a POSITA to look to a POS reference like Smith." *Id.* at 21–22. Patent Owner's arguments raise factual issues about whether a POSITA would have had a reason to make the combination proposed by Petitioner. *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1331 (Fed. Cir. 2019) ("Whether a skilled artisan would have been motivated to combine prior art references is . . . a question of fact.").

Patent Owner is correct insofar as Gill already addresses security by requiring the customer to enter a PIN in order to conduct an ATM transaction. Ex. 1010, 5:13–20, 13:47–51,14:9–13, Fig. 6 (block 614), Fig. 7 (block 715). Patent Owner also appears to be correct that Petitioner's combination would require a more complicated payment network than is disclosed by Gill in order to validate Smith's cryptogram. *See, e.g.,* Ex. 1011 ¶ 62 ("The service provider 110 may receive the MCA and perform cryptography to validate the MCA using methods apparent to persons having skill in the relevant art.").

Even if true, however, Patent Owner's asserted facts would not preclude a determination of obviousness. Petitioner is not required to show that its proposed combination of Gill and Smith would have been an "an 'improvement' in a categorical sense." *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380–81 (Fed. Cir. 2023) (holding that the Board improperly rejected *KSR*'s known-technique rationale when it reasoned that Kabemoto "already addresses" the prior art problem and that it "fail[ed] to see why" a POSITA would regard Bauman's technique as an obvious improvement to Kabemoto).

Although a more complicated payment network may be a drawback of Petitioner's proposed combination, "[t]he relevant inquiry is whether or not

a person having ordinary skill in the art would be motivated to combine references despite drawbacks that the combination might present." *Arctic Cat Inc. v. Polaris Indus., Inc.*, 795 F. App'x 827, 833 (Fed. Cir. 2019); *see also Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n. 8 (Fed. Cir. 2000) ("The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another."). At the trial stage, we "must weigh the benefits and drawbacks of the modification against each other, to determine whether there would be a motivation to combine." *Arctic Cat*, 795 F. App'x at 833; *Winner*, 202 F.3d at 1349 n.8; *see also Henny Penny*, 938 F.3d at 1332 (holding that a reasonable fact finder could have found that the "tradeoffs" of Petitioner's combination, including additional complexity, "yield an unappetizing combination," especially because the primary reference "already teaches a sensor that measures other indicia of oil quality").

At this juncture, we merely determine that Petitioner has articulated a sufficient rationale for combining the references, and it is reasonably likely that Petitioner's position will prevail.

c) Reason to Add Gomez to Gill, Smith, and Kay

Petitioner contends that a POSITA would have relied on Gomez to provide additional details about how to generate the payment cryptogram described by Smith. Pet. 51–53 (citing Ex. 1003 ¶¶ 474–477; Ex. 1005, 1:58–2:1, 2:14–17, 2:21–25, 5:43–47, 7:17–27, 8:42–9:11, 13:63–14:2). According to Petitioner,

> The cryptogram in the resulting combination with Gomez could be formed, for instance, by combining at least a portion of the mobile cloud account data stored on the mobile device (as taught

> in Smith) with a temporal signal (as taught in Gomez), hashing the combined data, and encoding the output of the hash function in a manner suitable for transmission in a contactless connection between the mobile device and the ATM. . . . A POSITA would have sought to use a dynamically changing temporal signal in calculation of the cryptogram (along with a cryptographic technique such as hashing) to ensure that the cryptogram produced in each transaction would vary from prior cryptograms in an unpredictable manner, thereby frustrating the ability of illicit actors to exploit an MCA and cryptograms from prior transactions to later consummate a fraudulent transaction.

Pet. 53–54 (citing Ex. 1003 ¶¶ 474, 478; Ex. 1005, 1:58–63, 2:21–25, 5:43–47, 13:63–14:2).

Patent Owner argues that a POSITA would not have been motivated to add a third layer of security by adding Gomez to the Gill-Smith-Kay combination, that Gomez, like Smith, is directed to a POS payment system that is vastly different from Gill's ATM payment system, and that Gomez is directed to a smart payment card in a traditional format, whereas the Gill, Smith, and Kay are all directed to mobile device payment systems. Prelim. Resp. 23–26.

For purposes of institution, we find that Petitioner asserts a sufficient rationale for adding Gomez to the combination of Gill, Smith, and Kay, as summarized above, and that Petitioner's rationale is sufficiently supported by the cited prior art and the Shamos Declaration.

On this record, Patent Owner's argument about adding a third layer of security (Prelim. Resp. 23) does not seem particularly pertinent to Petitioner's obviousness rationale, which relies on Gomez to provide details about how Smith's cryptogram would be generated. Pet. 51–54. For the reasons discussed above, we do not find that Gill teaches away from combining an ATM transaction with features of a POS transaction. *Cf.*

Prelim. Resp. 25 (arguing that Gill teaches away from the combination of Gill and Gomez). Patent Owner is correct that Gomez is directed to a payment card, rather than a smartphone, as in Gill, Smith, and Kay. Prelim. Resp. 25 (citing Ex. 1005, 5:32–34, 5:64–6:2). Gomez's payment card is not, however, a "traditional card," as argued by Patent Owner. *Id.* Gomez's payment card has a processor, and Petitioner relies upon functionality performed by the processor, namely computing a cryptogram based on a temporal signal. Ex. 1005, 2:59–64, 10:33–57; Pet. 52–53 (citing Ex. 1005, 1:58–2:1, 2:14–17, 2:21–25, 5:43–47, 7:17–27, 8:42–9:11, 13:63–14:2). On this record, there is sufficient support for Petitioner's contention that a POSITA would have implemented Gomez's cryptogram generation technique with a smartphone, as in Gill, Smith, and Kay. Pet. 51–55.

d) Remaining Issues

At this stage, Patent Owner does not dispute Petitioner's contention that a POSITA would have had a reason to combine Kay's GUI with a mobile device for conducting a contactless transaction at an ATM, as taught by the combination of Gill and Smith. Pet. 16–20 (citing Ex. 1003 ¶¶ 427–430; Ex. 1009 ¶¶ 38–52, Figs. 3, 4A–4F; Ex. 1010, 4:1–3, 5:14–16, 9:15–25, 10:42–46, 13:9–17, 14:31–36, 17:56–62, Figs. 5, 7). We determine that Petitioner's showing is sufficient for purposes of institution.

At this stage, Patent Owner does not dispute Petitioner's contention that the combination of Gill, Smith, and Kay teaches or suggests the preamble and elements [18a]–[18g] and [18i] of claim 18. Pet. 20–38, 41–42. Patent Owner also does not dispute Petitioner's contention that the combination of Gill, Smith, Kay, and Gomez teaches or suggests the

limitations of claim 18. Pet. 55–56. We determine that Petitioner's showing for independent claim 18 is sufficient for purposes of institution.

2. Dependent Claims 19–24

Claims 19–24 depend from claim 18. Petitioner contends that the additional limitations of dependent claims 19–21 and 24 are taught by the combination of Gill, Smith, and Kay, and the additional limitations of dependent claims 22 and 23 are taught by by the combination of Gill, Smith, Kay, and Gomez. Pet. 42–48, 56–60. Patent Owner does not present arguments for dependent claims 19–24 separate from its arguments for independent claim 18. *See* Prelim. Resp. 22, 26 (addressing dependent claims and relying on the arguments presented for claim 18).

IV. CONCLUSION

For the above reasons, we determine that Petitioner establishes a reasonable likelihood that it would prevail in showing that at least one of claims 18–24 of the '520 Patent is unpatentable. Accordingly, we institute an *inter partes* review of all challenged claims on all grounds asserted against those claims in the Petition. 37 C.F.R. §§ 42.107(e), 42.108(a); *see* Guidance on the Impact of SAS on AIA Trial Proceedings (April 26, 2018);[9] *see also SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

[9] Available at https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial.

V. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 18–24 of the '520 Patent is instituted commencing on the entry date of this Decision; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial.

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