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Paper 34
Entered: August 12, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., SAMSUNG RESEARCH AMERICA, INC.,
Petitioner,

v.

DYNAMICS, INC.,
Patent Owner.

Case IPR2020-00502
Patent 10,032,100 B2

Before TREVOR M. JEFFERSON, GEORGIANNA W. BRADEN, and JON M. JURGOVAN, *Administrative Patent Judges*.

JEFFERSON, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Research America, Inc., filed a Petition requesting *inter partes* review of claims 1–20 of U.S. Patent No. 10,032,100 B2 (Ex. 1001, the "'100 Patent"). Paper 1 ("Petition" or "Pet."). Patent Owner, Dynamics Inc., filed a Preliminary Response to the Petition. Paper 8 ("Prelim. Resp.").

Per our email authorization (Ex. 3001), Petitioner filed a Reply to Patent Owner's Preliminary Response. Paper 32 ("Pet. Reply"). Patent Owner filed a Sur-Reply to Petitioner's Reply. Paper 33 ("PO Sur-Reply").

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in a petition and the preliminary response "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." Upon consideration of the Petition and Preliminary Response, and accompanying exhibits and evidence, we determine Petitioner has established a reasonable likelihood that it would prevail with respect to at least one challenged claim in the *inter partes* review. Based on the discussion below, we grant institution of an *inter partes* review as to all of the challenged claims and grounds of the '100 Patent.

II. BACKGROUND

A. Related Proceedings

Petitioner informs us of one pending district court proceedings based on the '100 patent that involves Petitioner, *Dynamics Inc. v. Samsung Elecs. Co., Ltd. et al.*, Case No. 1:19-cv-6479 (S.D.N.Y.), filed July 12, 2019,

which was stayed on September 4, 2019. Pet. 71–72. Petitioner also informs us of one proceeding pending before the International Trade Commission ("ITC"), *In re Certain Mobile Devices With Multifunction Emulators*, Inv. No. 337-TA-1170 (U.S.I.T.C.), filed July 12, 2019. *Id.* According to Petitioner, an initial determination in the ITC case is expected on or around August 14, 2020. *Id.* Petitioner further informs us it is concurrently filing *inter partes* review petitions for three other patents asserted in the above-referenced District Court and ITC cases. *Id.*

Patent Owner informs us of the same pending proceedings listed above. Paper 6 (Patent Owner's Mandatory Notices), 2–3.

B. The '100 Patent

The '100 Patent was filed on April 25, 2016, issued on July 24, 2018, from a continuation filed July 25, 2012, and is titled "Cards and Devices with Multifunction Magnetic Emulators and Methods for Using Same." Ex. 1001, codes (22), (45), (54). The '100 patent relates to

> A payment card (e.g., credit and/or debit card) is provided with a magnetic emulator operable of communicating information to a magnetic stripe reader. Information used in validating a financial transaction is encrypted . . . . Such dynamic information may be communicated using such an emulator such that a card may be swiped through a magnetic stripe reader—yet communicate different information based on time. An emulator may receive information as well as communicate information to a variety of receivers (e.g., an RFID receiver).

Ex. 1001, Abstract. The '100 patent discloses "[a] card is provided, such as a credit card or security card, that may transmit information to a magnetic stripe reader via a magnetic emulator." *Id*. at 1:28–36.

The '100 Patent states that "[t]he magnetic emulator may be, for example, a circuit that emits electromagnetic fields operable to electrically couple with a read-head of a magnetic stripe reader such that data may be transmitted from the circuit to the magnetic stripe reader." *Id*. at 1:30–34. The '100 Patent further states that the magnetic emulator may also "be operated to electrically couple, and transmit data to, a device using a Radio Frequency Identification (RFID) protocol." *Id*. at 2:9–16. The '100 patent specification further states that the magnetic emulator may be swiped through a magnetic stripe reader to communicate data, "placed outside and within the proximity of (e.g., 0.25 inches) the read-head." *See id*. at 2:2–6, 4:29–33.

Figure 7 shows the electrical coupling between a card and a reader of the invention.

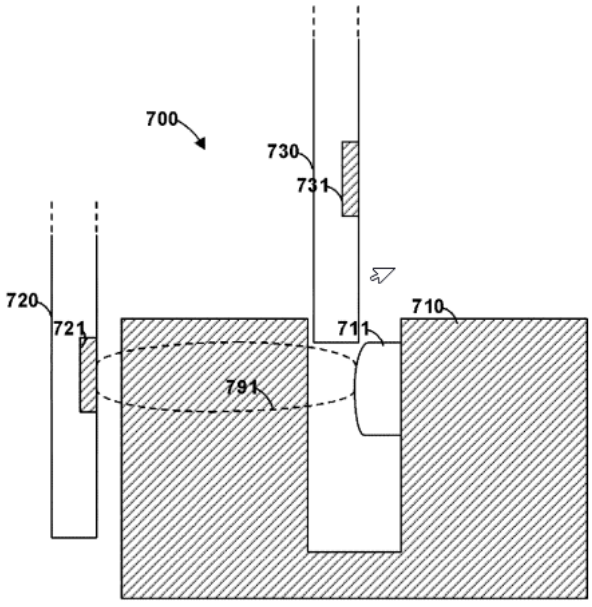

FIG. 7

Figure 7 depicts "cards 720 and 730 as well as magnetic stripe reader 710. Read-head housing 711 may be included on a wall of a trough of magnetic stripe reader 710." *Id*. at 8:24–27. Card 720 shows emulator 721 that provides electromagnetic field 791 capable of transmitting through the housing of the magnetic stripe reader 710, thus card 720 may be outside of the reader and operable to communicate through the outer wall of a thickness of a quarter inch or more. *Id*. at 8:29–39.

The '100 Patent describes that the invention could be implemented in devices other than cards, such as "a portable telephonic device, portable media player, or any type of electronic device." *Id*. at 2:48–51, 12:32–34. Figure 12 shows a personal electric device in accordance with the invention. *Id*. at 3:35–37.

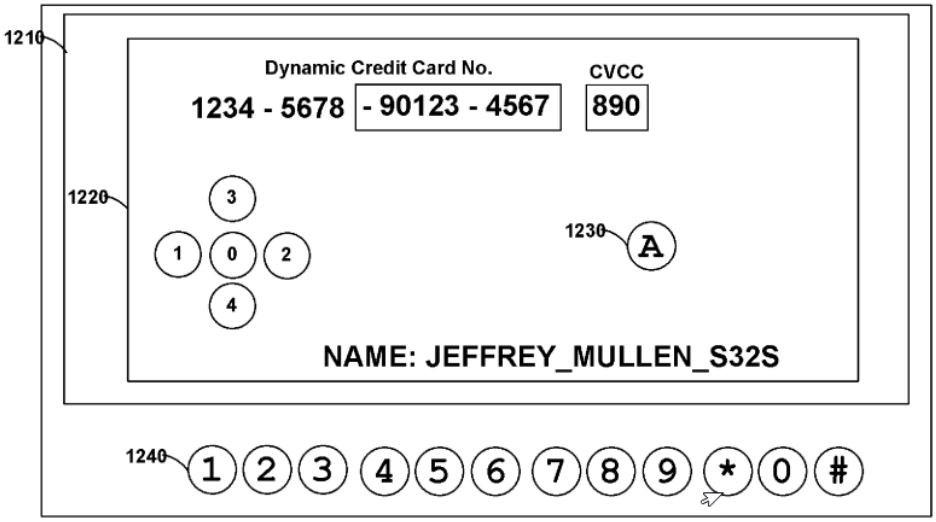

FIG. 12

Figure 12 shows personal electronic device 1200, with user inputs 1240, display 1210, and virtual card 1220. *Id*. at 12:37–40. "Personal electronic

device 1200 may communicate to a card reader such as . . . an RFID reader." *Id*. at 12:45–46.

C. Illustrative Claims

Claims 1 and 12 are independent and illustrative.

> 1. A device comprising:
>
> a circuit operable to emit an electromagnetic field and to electrically couple to, and transmit data to, a read-head located on a magnetic stripe reader; and
>
> a processor for controlling the circuit,
>
> wherein the circuit is operable to communicate the data to the read-head while located outside of the magnetic stripe reader at a distance of at least a quarter of an inch from the read-head.
>
> 12. A portable telephonic device comprising:
>
> a circuit operable to emit an electromagnetic field and to electrically couple to, and transmit data to, a read-head located on a magnetic stripe reader; and
>
> a processor for controlling the circuit,
>
> wherein the circuit is operable to communicate the data to the read-head while located outside of the magnetic stripe reader.

Ex. 1001, 14:45–53, 15:8–14.

D. Asserted Grounds of Unpatentability

The information presented in the Petition sets forth the following proposed grounds of unpatentability for the challenged claims of the '100 Patent (Pet. 9):

Reference(s)/Basis	35 U.S.C. §[1]	Claim(s) Challenged
Moullette[2]	103	1–3, 8, 10
Moullette, Poidomani[3]	103	9, 11
Zellner, [4] Moullette	103	1, 4–7, 12–18, 20
Zellner, Moullette, Poidomani	103	19
Doughty[5]	103	1–3, 8, 10
Doughty, Poidomani	103	9, 11
Doughty, Zellner	103	4–7, 12–18, 20
Doughty, Zellner, Poidomani	103	19

Petitioner supports its challenges with the Declaration of Stephen G. Halliday, Ph.D. ("Mr. Halliday") (Ex. 1002).

III. PRELIMINARY MATTERS

A. Analysis of Discretionary Denial Under 35 U.S.C. § 314(a)

Patent Owner states that the '100 Patent is the subject of a pending ITC proceeding and a stayed district court litigation. Prelim. Resp. 7–8.

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[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (September 16, 2011) ("AIA"), included revisions to 35 U.S.C. §103 that became effective on March 16, 2013. Because the '100 patent issued from an application filed before March 16, 2013, we apply the pre-AIA version of the statutory basis for unpatentability.

[2] U.S. Patent No. 7,114,652 B2, issued Oct. 3, 2006 (Ex. 1007, "Moullette").

[3] U.S. Patent Application Publication No. 2007/0034700 A1, Published Feb. 15, 2007 (Ex. 1009, "Poidomani").

[4] U.S. Patent No. 7,097,108 B2, issued Aug. 29, 2006 (Ex. 1008, "Zellner").

[5] U.S. Patent Application Publication No. 2006/0161789 Al, Published Jul. 20, 2006 (Ex. 1012, "Doughty").

Patent Owner argues we should exercise discretion under 35 U.S.C. § 314(a) and deny institution based on the ITC proceeding because it involves the same parties, independent claim and prior art, and is at an advanced stage. Prelim. Resp. 3–11; PO Sur-Reply 1–10; *see Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB March 20, 2020) (precedential) (Order). To the contrary, Petitioner argues that evaluation of the *Apple v. Fintiv* factors demonstrates we should *not* exercise discretion to deny institution of *inter partes* review. Pet. Reply 1–10. Having considered Petitioner and Patent Owner's arguments, *see* Prelim. Resp. 3–11; Pet. Reply 1–10; PO Sur-Reply 1–10, and for the reasons stated below, we are not persuaded to exercise discretion to deny institution.

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances); 37 C.F.R. § 42.108(a) ("[T]he Board may authorize the review to proceed"). *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1351 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review . . . ." (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.").

In the *NHK* case, the Board denied institution relying, in part, on § 314(a), because a parallel district court proceeding was scheduled to finish before the Board reached a final decision. *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential).

"Thus, *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." *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, 3 (PTAB March 20, 2020) (precedential) (Order). When determining whether to exercise discretion to deny institution due to an earlier trial date in a parallel proceeding, we consider the following factors ("*Fintiv* factors"):

> 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 6. "These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding." *Id.* In evaluating these factors, we take "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* (citing Patent Trial and Appeal Board Consolidated Trial Practice Guide 58 (November 2019), https://www.uspto.gov/TrialPracticeGuideConsolidated). We address the

Fintiv factors *in seriatim* and discuss in detail our reasons for not exercising discretion to deny institution based on § 314(a).

1. Whether a Stay Exists or Is Likely to Be Granted if a Proceeding Is Instituted

The district court has stayed its proceeding since September 4, 2019, pending an outcome of the ITC proceeding. PO Sur-Reply 2 (citing Ex. 2026). This factor weighs against exercising discretion to deny institution. The stay of the proceeding allays concerns about inefficiency and duplication of efforts as it relates to this proceeding. *See Fintiv*, Paper 11 at 6. In the event that there may be duplicative efforts with the ITC proceeding, we continue our analysis and inquire further as to whether the ITC would render a decision before this proceeding as examined below under *Fintiv* factor 2, and the degree of overlap of the proceedings under *Fintiv* factor 4. *Fintiv* at 6 (explaining that there is some overlap among the factors).

2. Proximity of the Court's Trial Date to the Board's Projected Statutory Deadline

In the ITC proceeding, trial was set to be held on June 22–26, 2020 but was adjourned until further notice due to COVID-19 concerns. Prelim. Resp. 9 (citing Ex. 2001; Ex. 2002; Ex. 2025). Additionally, the ITC issued a new document timeline on June 29, 2020, that includes a witness statement deadline of August 14, 2020, and an objection deadline of August 21, 2020. *See* Ex. 3002, *In re Certain Mobile Devices with Multifunction Emulators*, Inv. No. 337-TA-1170, Order No. 21 at 2 (June 29, 2020). The Board's Institution Decision is due by August 14, 2020, which is ***before*** the ITC's initial determination (ID) that has been postponed indefinitely. Pet. Reply 2

(citing Ex. 2002, 4; Ex. 2025, 2); *see* Ex. 3002. Yet, even given the uncertainties involved with COVID-19, it is unlikely that a trial will be postponed by 14 months such that our final written decision will issue prior to the ITC trial. Accordingly, we weigh this factor in favor of discretionary denial.

3. Investment in the Parallel Proceeding by the Court and Parties

The parties have significant investments in both this proceeding and the ITC proceeding. Specifically, in the ITC proceeding, a *Markman* hearing was held November 26, 2019; an order construing only some of the claims issued on January 31, 2020; fact discovery was completed January 17, 2020; expert reports were exchanged and experts deposed; and motions for summary determination were filed on March 11, 2020. Prelim. Resp. 9.

In this proceeding, the parties have submitted a Petition (Paper 1), an Expert Declaration (Exhibit 1002), a Preliminary Response (Paper 8), a Reply (Paper 32), and a Sur-Reply (Paper 33) in addition to other papers and exhibits. We note the instant proceeding here is further along than those in either the *Fintiv* case or the *Sand Revolution* case, where the parties in both cases had filed only one substantive paper each (i.e., the Petition and the Preliminary Response). *See Fintiv*, at 6; *Sand Revolution II LLC v. Continental Intermodal Group*, IPR 2019-01393, Paper 24, 10-11 (PTAB June 16, 2020) (informative, designated July 13, 2020). Thus, these case are distinguishable.

It is evident that the parties' investments in both proceedings are substantial. Thus, we find this factor is neutral in our analysis regarding institution.

4. Overlap Between Issues Raised in the Petition and in the Parallel Proceeding

The ITC proceeding involves only claims 1, 4, 6, 8, 12, and 18 of the '100 Patent whereas Petitioner's challenges here involve claims 1–20 of the '100 Patent. Therefore, resolution of the ITC proceeding would not resolve the parties' dispute concerning patentability of claims 2, 3, 5, 7, 9–11, 13–17, 19, and 20 of the '100 Patent.[6]

Looking at the challenges before us, the dependent claims at issue in Petitioner's challenge to the '100 Patent addresses limitations not present in the ITC proceeding. In particular, the claims address classes of communication devices (claim 2), a device with touch-sensitive display for displaying a virtual card (claim 7), and circuits emitting a second electromagnetic field in parallel (claims 9 and 19) (*see* Ex. 1001, 14:45–16:16.) that are not challenged in the ITC proceeding that does not reach these issues. These limitations are at issue in Petitioner's challenges before the Board, but are not at issue in the ITC proceeding.

Although there is overlap between the grounds asserted before the Board and the ITC proceeding (PO Sur-Reply 3), the challenge of claims that do not overlap combined with the lack of definitive resolution of these claims before the stayed district court, in balance, weigh in favor of institution.

[6] We further note that the ITC does not have authority to invalidate patent claims in a manner that is binding upon the Board or district courts. *See Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558 (Fed. Cir. 1996).

5. Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party

The parties in the ITC proceeding, the district court proceeding, and this proceeding are the same. Prelim. Resp. 9. Petitioner does not dispute this fact. Pet. Reply 9. This factor weighs against institution.

6. Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits

We find the merits of this case weigh in favor of Petitioner on the evidence presented thus far. For example, Petitioner presents evidence and argument regarding claim 9 and 11, that are not at issue in the ITC proceeding. Pet. 25–29. Claims 9 and 11 address a second electromagnetic field that is emitted in parallel with the electromagnetic field of claim 1. Ex. 1001, 15:1–3, 15:6–7. On the present record, Petitioner asserts that Poidomani teaches that emission of two electromagnetic fields emitted in parallel that would operate in combination with Moullette's device. Pet. 25–28; Ex. 1002 ¶¶ 77–78. Petitioner presents a persuasive rationale to combine Moullette and Poidomani, based on the present record, with a reasonable expectation of success to teach the limitations of claims 9 and 11. Pet. 25–27; Ex. 1002 ¶¶ 77–78. On the present record, we find Petitioner's arguments and evidence on the merits persuasive.

Accordingly, this factor weighs in favor of institution.

7. Balancing the Fintiv Factors

The only case that Patent Owner relies upon that involves denial of institution of *inter partes* review based on a parallel ITC proceeding is *Bio-Rad Labs., Inc. v. 10X Genomics, Inc.*, IPR2019-00568, Paper 22 at 2 (PTAB Aug. 8, 2019). *See, e.g.*, PO Sur-Reply 3. In *Bio-Rad*, the Board

denied institution based on the ITC's initial determination (ID) that the challenged patent claims were not invalid. *Bio-Rad*, Paper 22 at 22–24. The ITC ID issued before the Board rendered its institution decision. *Id.* In this case, our institution decision will precede the ITC's ID, so *Bio-Rad*'s holding is inapposite to the facts of this case.

We have considered the circumstances and facts before us in view of the *Apple v. Fintiv* factors. Because our analysis is fact driven, no single factor is determinative of whether we exercise our discretion to deny institution under § 314(a). Evaluating the *Apple v. Fintiv* factors with a holistic view of whether the efficiency and integrity of the system are best served by denying or instituting review, we determine that the specific facts of this case weigh against exercising discretion under § 314(a) to deny institution of *inter partes* review.

IV. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider 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 importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). Factors pertinent to a determination of the level of ordinary skill in the art include "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6)

educational level of active workers in the field." *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). "Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case." *Id.*

Petitioner argues that a person having ordinary skill in the art at the time of the alleged invention "would have had at least a Bachelor's degree in Electrical Engineering, or an equivalent technical degree or equivalent work experience, and knowledge regarding the use of magnetic fields to transmit or otherwise convey information." Pet. 15 (citing Ex. 1002 ¶¶ 33). Petitioner further argues that "[a]dditional education might supplement practice experience and vice-versa." *Id.*

Patent Owner argues that a person having ordinary skill in the art at the time of the alleged invention would have had "an undergraduate degree in computer science, electrical engineering, or the equivalent (including computer engineering) and at least three years of experience with point of sale systems and the use of magnetic fields to convey information." Prelim. Resp. 26.

Based on our review of the '100 Patent, the types of problems and solutions described in the '100 Patent and cited prior art, and the testimony of Mr. Halliday, for purposes of this Decision, we adopt and apply Petitioner's proposed level of ordinary skill in the art. Specifically, we find that a person of ordinary skill in the art at the time of the claimed invention "would have had at least a Bachelor's degree in Electrical Engineering, or an equivalent technical degree or equivalent work experience, and knowledge

regarding the use of wireless electromagnetic signals to transmit or otherwise convey information."

B. Claim Interpretation

In an *inter partes* review for a petition filed on or after November 13, 2018, a claim "shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019); *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 November 13, 2018). In applying this claim construction standard, we are guided by the principle that the words of a claim "are generally given their ordinary and customary meaning," as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (*en banc*) (citation omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a "heavy presumption," however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted).

Petitioner states that it does not believe any terms need be construed to resolve the prior art issues presented in this Petition. Pet. 15. Petitioner

notes there were claim constructions proposed by the parties in the ITC proceeding. *Id.* at 15–16 (citing Ex. 1016, 6). Petitioner further states these terms need not be construed because they are disclosed by the prior art under either party's proposed construction. *Id*. at 16. Patent Owner identifies the constructions raised by the parties, but is silent on whether any terms require construction to resolve the Petition's challenges. Prelim. Resp. 23–24.

We agree with Petitioner that no express construction is needed to resolve any dispute in this proceeding and do not construe the identified claim limitations. *See, e.g.*, *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy."). A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner's Response, Petitioner's Reply, or otherwise during trial, as permitted by our rules.

C. Principles of Law

A patent 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) objective evidence of nonobviousness, i.e., secondary considerations.[7] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Supreme Court has made clear that we apply "an expansive and flexible approach" to the question of obviousness. *KSR,* 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *KSR*, 550 U.S. at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id*.

"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

[7] Patent Owner presents arguments regarding secondary considerations applicable to each of Petitioner's grounds (Prelim. Resp. 57–62) and we address this Graham factor below.

grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (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).

Thus, to prevail in an *inter partes* review, Petitioner must explain how the proposed prior art or combinations of prior art would have rendered the challenged claims unpatentable. At this preliminary stage, we determine whether the information presented in the Petition shows there is a reasonable likelihood that Petitioner would prevail in establishing that one of the challenged claims is unpatentable. Additionally, the Supreme Court held that a decision to institute under 35 U.S.C. § 314(b) may not institute review on less than all claims challenged in the petition. *SAS*, 138 S. Ct. at 1355–56. Moreover, in accordance with USPTO Guidance, "if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition." *Guidance on the Impact of SAS on AIA Trial Proceedings* (April 26, 2018) (available at https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial) ("USPTO Guidance").

D. Objective Indicia of Nonobviousness

Patent Owner raises secondary considerations of non-obviousness applicable to each of the grounds Petitioner asserts. Prelim. Resp. 57–62. We address Patent Owner's contentions below.

For objective indicia of nonobviousness to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). "[T]here is no nexus unless the evidence presented is 'reasonably commensurate with the scope of the claims.'" *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). A patentee is entitled to a presumption of nexus "when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'embodies the claimed features, and is coextensive with them.'" *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000))). "[T]he purpose of the coextensiveness requirement is to ensure that nexus is only presumed when the product tied to the evidence of secondary considerations '*is* the invention disclosed and claimed.'" *Id.* at 1374 (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). "[T]he degree of correspondence between a product and the patent claim falls along a spectrum. At one end of the spectrum lies perfect or near perfect correspondence. At the other end lies no or very little correspondence." *Id.* "A patent claim is not coextensive with a product that includes a 'critical' unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality." *Id.* at 1375.

At this stage of the proceeding and based on the current record, Patent Owner does not provide an analysis demonstrating that any of its products are coextensive (or nearly coextensive) with the challenged claims. *See*

Prelim. Resp. 58–59. Nor has it received a finding of infringement of the challenged claims from either a district court of the ITC. *See id.* (alleging infringing products). We, therefore, preliminarily find that a presumption of nexus is inappropriate at this time.

"A finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations," however. *Fox Factory*, 944 F.3d at 1375. "To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the 'direct result of the unique characteristics of the claimed invention.'" *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). "Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention," meaning that "there must be a nexus to some aspect of the claim not already in the prior art." *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011) (emphasis in original). On the other hand, there is no requirement that "objective evidence must be tied exclusively to claim elements that are not disclosed in a particular prior art reference in order for that evidence to carry substantial weight." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016). A patent owner may show, for example, "that it is the claimed combination as a whole that serves as a nexus for the objective evidence; proof of nexus is not limited to only when objective evidence is tied to the supposedly 'new' feature(s)." *Id.* Ultimately, the fact finder must weigh the secondary considerations evidence presented in the context of whether the claimed invention as a whole would have been obvious to a skilled artisan. *Id.* at 1331–32.

As objective evidence of nonobviousness, Patent Owner submits Licensing

Agreement between Patent Owner and LG as well as product manuals for Petitioner's products, articles regarding Petitioner's products. Prelim. Resp. 58 (citing Exs. 2013–2015). Patent Owner also submits (1) evidence of failure of other commercial entities (*id.* at 60 (citing Exs. 2016–2019)), (2) awards for its technology (*id.* at 42), (3) teaching away by others (*id.* at 61 (citing Ex. 2020)), and (4) copying of the invention by competitors (*id.* at 62).

We are not persuaded at this stage of the proceeding that Patent Owner has demonstrated sufficiently that a nexus exists between the evidence presented and the merits of the claimed invention because the evidence fails to demonstrate sufficiently that any of the products or awards are coextensive (or nearly coextensive) with the challenged claims. *See Kao*, 639 F.3d at 1068–69. In fact, Patent Owner fails to even argue that its evidence demonstrates a nexus or that any of the evidence shows the limitations of the challenged claims. We do not discount the importance of commercial success of infringing product, receiving awards, or copying by competitors; however, our analysis requires determining whether a nexus exists between the evidence and the claimed invention. *ClassCo*, 838 F.3d at 1220. The evidence presented at this stage of the proceeding provides insufficient information to suggest the awards, alleged infringement, or copying were based upon the claimed limitation. Accordingly, we are not persuaded at this time by Patent Owner's evidence of objective indicia of nonobviousness as it applies to each of the grounds discussed below.

E. Obviousness of Claims 1–3, 8, and 10: Moullette

Petitioner provides argument that Moullette renders claims 1–3, 8, and 10 obvious. Pet. 17–25; Ex. 1002 ¶¶ 64–74.

1. Overview of Moullette (Ex. 1007)

Moullette is a patent titled "External Adaptor for Magnetic Stripe Card Reader." Ex. 1007, code (54). Moullette discloses an adapter for use with a conventional magnetic stripe card point of sale reader that receives information from a contact or wireless source. *Id.* at Abstract.

Figure 1, below, illustrates "a simplified schematic view of an adaptor system in accordance with one embodiment" that allows for magnetic emulation outside of the reader. *Id.* at 3:66–4:1.

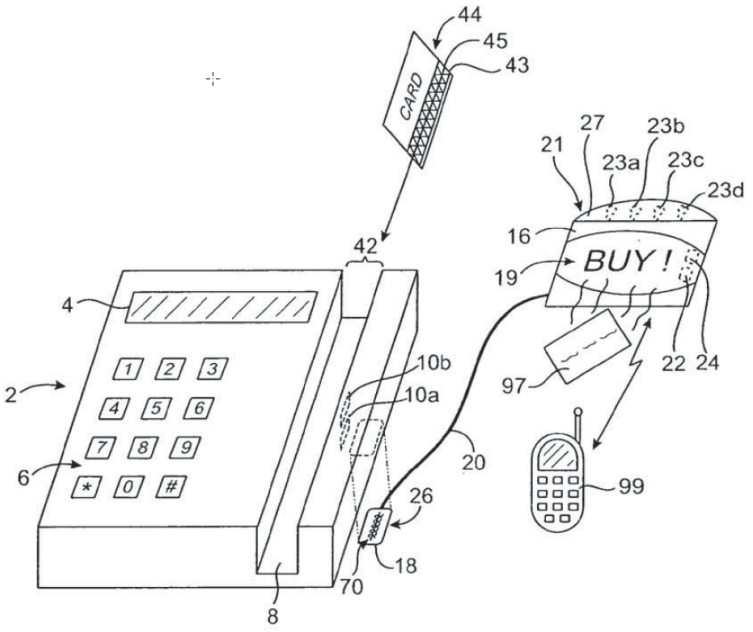

FIG. 1

Moullette describes an adaptor that "allows a conventional magnetic stripe card POS reader to receive information from contact-based or wireless sources." *Id.* at 2:51–55. Figure 1 shows conventional point-of-sale (POS)

magnetic stripe card reader 2, with display 4, keypad 6, and magnetic card swipe slot 8. *Id.* at 4:1–3. Magneto-inductive readers 10a and 10b receive signals from Track One 43 or Track Two 45 of magnetic stripe card 44. *Id.* at 4:3–7. Figure 1 shows consumer pod portion 16 in electrical communication with merchant pod portion 18 through cable 20, where the consumer interacts bringing an RF proximity chip card 97, mobile personal device, or other RF or IR transceiver device in proximity to a wireless transceiver 22 to communicate information. *Id.* at 4:8–15. Consumer pod portion 16 is positioned at a location convenient for a customer, who may interact with adaptor 14 using personal trusted device (PTD) 99 (shown as a wireless telephone in Figure 1) by bringing PTD 99 in proximity to wireless transceiver 22 of adaptor 14. *Id.* at 4:10–15, 4:46–49. Merchant pod portion 18 is affixed beneath the external housing of reader device 2 and communicates with its reader heads 10a, 10b. *Id.* at 5:21–31.

2. Claim 1

a. Preamble and "a circuit operable to emit an electromagnetic field and to electrically couple to, and transmit data to, a read-head located on a magnetic stripe reader" and "a processor for controlling the circuit"

Petitioner argues that Moullette teaches the claim 1 preamble for "a device comprising" via the adaptor that allows the consumer pod to communicate with the magnetic stripe card POS reader. Ex. 1007, Abstract, 4:8–10; Ex. 1002 ¶ 64.

Petitioner further asserts that that Moullette discloses the "circuit operable to emit an electromagnetic field and to electrically couple" limitation describing that current flows to generate a magnetic field, that activates the card, and communicates to the magnetic track readers. Pet. 18–

19; Ex. 1007, 6:49–56, 6:60–66; Ex. 1002 ¶¶ 65, 66. Petitioner argues that Figure 1 of Moullette discloses transceivers 22 shown in communication with interface processor 24. Pet. 19–20; Ex. 1002 ¶ 67.

b. "wherein the circuit is operable to communicate the data to the read-head while located outside of the magnetic stripe reader at a distance of at least a quarter of an inch from the read-head."

Petitioner argues that Moullette teaches this limitation in describing "an adaptor with 'an inductor capable of ***generating a magnetic field of sufficient power to couple*** with a head of a magnetic stripe card reader ***through the housing*** of the reader device" such that "the adaptor can be positioned ***external*** to the reader device." Pet. 20–21 (quoting Ex. 1007, Abstract); *see* Ex. 1002 ¶¶ 67, 69. Petitioner avers that Moullette discloses generating a magnetic field sufficient to communicate the continuous data to the read heads from the outside of the housing. Pet. 21; Ex. 1007, 5:54–57, 6:1–5, 6:25–29, Fig. 3B (items 27, 10a, 10b); Ex. 1002 ¶ 68. Petitioner argues that a person of ordinary skill in the art would have understood from "the dimensions of Moullette's device and magnetic card readers at the time of the alleged invention, that the distance between Moullette's inductor element 72 and the read-head of the magnetic stripe reader would have been at least a quarter of an inch." Ex. 1002 ¶ 69. For example, Petitioner argues that

> Moullette describes that "core 72" has "a thickness of about 1/8"," and is contained within the M-Pod module 26, which is larger in size than core 72. Ex. 1007, 5:41–44, Fig. 3B. A POSITA would also have understood that the card reader housing (such as element 2 in Figure 3B above) would have had a thickness of at least a quarter of an inch. Ex. 1002 ¶ 69. Thus, the circuit of Moullette's adaptor communicates with the read-

> head of the magnetic card reader while outside the card reader and at least a quarter of an inch from the read-head. *Id*.

Pet. 22.

c. Claim 1

Patent Owner argues that Moullette does not disclose a standalone device, but instead discloses a system where the inductive component is affixed to the reader and becomes a part of the device. Prelim. Resp. 28 (citing Ex. 1007, Figs. 3A, 4A). Because this structure is affixed to the reader and is integral to the non-portable device of Moullette, it cannot disclose the communication and distance limitation. Prelim. Resp. 28–29.

We are persuaded by Petitioner's evidence and arguments that Moullette teaches the limitations of claim 1. Patent Owner's arguments regarding structure of the device shown in Figures 3A and 3B of Moullette does not address persuasively Petitioner's evidence and argument. In addition, Patent Owner's assertion that Moullette fails to teach a portable device is not commensurate with the scope of claim 1. *See In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011).

At this stage of the proceeding in light of the current record, we are persuaded that Petitioner has shown that Moullette teaches the limitations of claim 1. We find the testimony of Mr. Halliday and citations to the record supports a finding of a reasonable likelihood that Petitioner would prevail in showing that challenged independent claim 1 would have been obvious in view of Moullette. Pet. 17–22; Ex. 1002 ¶¶ 64–69.

3. Claims 2, 3, 8, and 10

Petitioner provides argument and evidence citing to Moullette and Mr. Halliday that Moullette teaches the limitations of dependent claims 2, 3, 8,

and 10. Pet. 23–28; Ex. 1002 ¶¶ 69–74. We credit Petitioner's evidence at this stage and do not find Patent Owner's summary argument regarding claim 2, 3, 8, and 10 persuasive. Prelim. Resp. 29–30. Based on the record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claims 2, 3, 8, and 10 would have been obvious in view of Moullette.

At this stage of the proceeding in light of the current record, we are persuaded that Petitioner has shown a reasonable likelihood that Petitioner would prevail in showing that claim 2, 3, 8, and 10 would have been obvious in view of Moullette.

F. Obviousness of Claims 9 and 11: Moullette and Poidomani

Petitioner argues that Moullette and Poidomani would have rendered claims 9 and 11 obvious to a person of ordinary skill in the art under 35 U.S.C. § 103. Pet. 25–29; *see* Ex. 1002 ¶¶ 75–81.

1. Overview of Poidomani (Ex. 1009)

Poidomani is published U.S. patent titled "Electronic Cards and Methods for Making Same" published Feb. 15, 2007. Ex. 1009, code (54). The device disclosed in Poidomani "includes a digital processor, an electrochemical battery and a communications port." *Id*. at Abstract, ¶¶ 78, 86. Poidomani describes a device with "a swipe emulating broadcaster system" that includes a coil, where "the coil provides a dynamic magnetic field which emulates the swiping of a magnetic stripe transaction card." Ex. 1009 ¶ 35. Poidomani discloses that "[t]he non-contact communications port [is] included as an alternative to or in addition to" the magnetic stripe emulator. *Id*. ¶ 86. Poidomani discloses that the magnetic stripe emulator of

Poidomani includes a broadcaster which is "one or more inductive coils" that operates upon "activation" of "one or more sensors . . . used to signal to general process that the physical act of swiping the card body through a legacy reader has commenced." *Id.* ¶¶ 81, 98.

2. Motivation to Combine

Petitioner asserts that Moullette's two inductors that generate independent electromagnetic fields would have motivated a person of skill in the art to combine such fields with Poidomani's teachings regarding multiple inductive coils emitting electromagnetic fields in parallel and using cancellation to avoid interference. Ex. 1002 ¶ 76; *see* Ex. 1009 ¶¶ 35, 100; Ex. 1007, 2:51–55, 3:15–25. Thus, "[a] POSITA would have been motivated to incorporate Poidomani's teaching of emitting at least two electromagnetic fields in parallel into Moullette's device such that Moullette's two electromagnetic fields are emitted in parallel." Pet. 26; Ex. 1002 ¶ 77.

Having considered the parties' arguments and supporting evidence regarding the rationale for combining the teachings of Moullette and Poidomani, at this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings from the cited prior art to arrive at the inventions recited in the challenged claims. *See ZUP, LLC v. Nash Mfg., Inc.*, 896 F.3d 1365, 1371 (Fed. Cir. 2018).

3. Claim 9: "device of claim 1, wherein the circuit is operable to emit a second electromagnetic field in parallel with the electromagnetic field."

Petitioner argues that Moullette as discussed above teaches the limitations of claim 1 and the first and second magnetic fields. Pet. 27; Ex. 1002 ¶¶ 78, 79. In combination, Petitioner cites Poidomani's teachings of a

> "broadcaster 68" that includes "[f]our exemplary coils . . . a 'track one' coil 128, a 'track two' coil 130, a 'track one cancellation' coil 132 and a 'track two cancellation coil 134.'" Ex. 1009, [0099], Fig. 5. Each "coil provides a dynamic magnetic field which emulates the swiping of a magnetic stripe transaction card past a read head of a card reader." *Id.*, [0035].

Pet. 27. Petitioner asserts that Poidomani teaches that the cancellation coil is used to cancel cross talk as the electromagnetic fields are emitted together. Pet. 28.

4. Claim 11: "wherein the circuit is operable to transmit the data in a parallel operation."

Petitioner argues that a person of skill in the art would know that Moullette teaches a device with two magnetic fields and that in combination with Poidomani teaches a device capable of transmitting data in parallel. Pet. 28–29; Ex. 1002 ¶¶ 80–82. Based on the emulation of swiping a card past a card reader, a person of skill in the art would understand that the first and second coils in Poidomani are simultaneously transmitting the data to the stripe reader. *Id.*

5. Claims 9 and 11

We are persuaded by Petitioner's argument and evidence at this stage of the proceeding. Patent Owner's arguments directed to other non-contact communication technologies in Poidomani (Prelim. Resp. 30–31) do not

negate the teachings Petitioner cites regarding the electromagnetic coils in Poidomani, or the combination of modifying Moullette to perform the simultaneous electromagnetic field transmission, as taught in Poidomani. Pet. 26–29; Ex. 1002 ¶ 77.

At this stage of the proceeding in light of the current record, we are persuaded that Petitioner has shown that Moullette and Poidomani teach the limitations of claims 9 and 11. We find the testimony of Mr. Halliday and citations to the record supports a finding of a reasonable likelihood that Petitioner would prevail in showing that claim 9 and 11 would have been obvious in view of Moullette and Poidomani.

G. Obviousness of Claims 1, 4–7, 12–18, and 20: Zellner and Moullette

Petitioner asserts that claims 1, 4–7, 12–18, and 20 would have been rendered obvious by Moullette and Zellner. Pet. 29–43; Ex. 1002 ¶¶ 83–109.

1. Overview of Zellner (Ex. 1008)

Zellner is a U.S. patent titled "Multiple Function Electronic Cards." Ex. 1008, code (54). Zellner's electronic card includes first and second opposing faces, and is similar in dimensions to a standard credit card. *Id.*, code (57). A flat panel display extends over the first face of the card, and a dynamic magnetic encoder is provided on the second face of the card. *Id.* The dynamic magnetic encoder provides magnetic stripe information for a selected credit card. *Id.*

Zellner's Figure 6 is shown below.

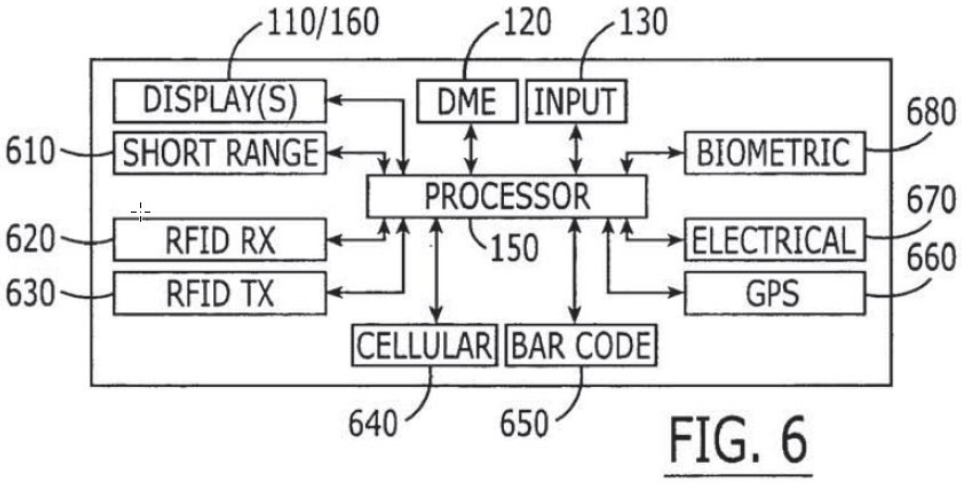

FIG. 6

Zellner's Figure 6 shows an electronic card including display(s) 110/160, dynamic magnetic encoder (DME) 120, input device 130, and processor 150. *Id.* at 7:42–46. The electronic card further includes short range wireless transceiver 610 for Bluetooth, WiFi or other communications. *Id.* at 7:46–50. The electronic card also includes Radio Frequency ID (RFID) receiver 620, RFID transmitter 630, and cellular transceiver 640. *Id.* at 7:50–53. Zellner further discloses a PDA, cell phone or other portable electronic device, which "may be combined with any or all of the embodiments" described earlier in the reference. *Id.* at 11:6–8.

2. Motivation to Combine

Petitioner provides articulated rationale and reasoning to incorporate Moullette into Zellner's device so personal communication devices, such as cell phones, can communicate with payment terminals via a device that emulates magnetic fields generated by traditional magnetic stripe payment cards. Pet. 29–31; Ex. 1002 ¶¶ 83–87; Ex. 1007, 2:42–47, 2:51–65; Ex. 1008, 1:6–9, 5:34–39. Petitioner cites Zellner's portable electronic

device with processor, display, RF, RFID, and cellular systems, and dynamic magnetic encoder capable of displaying credit card images and emulating a credit card's magnetic stripe information to existing card readers via magnetic or radio interface. Pet. 30–31; Ex. 1008, Abstract, 5:34–39, 9:51, 11:50–55. Moullette similarly teaches inductors that generate a first and second magnetic field capable of coupling with a magnetic stripe reader from the outside of a reader device. Pet. 31; Ex. 1007, Abstract, 3:15–25. Petitioner argues that it would have been obvious to an ordinarily skilled artisan "to modify Zellner's dynamic magnetic encoder (to the extent necessary) to include Moullette's inductors to ensure that Zellner's device could communicate with payment terminals using both radio frequency interaction, such as RFID, and magnetic stripe emulation using magnetic fields." Pet. 31 (citing Ex. 1002 ¶ 86).

Having considered the parties' arguments and supporting evidence regarding the rationale for combining the teachings of Moullette and Zellner, at this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings from the cited prior art to arrive at the inventions recited in the challenged claims.

3. Claims 1 and 12

a. Claim 1: Preamble and "a circuit operable to emit an electromagnetic field and to electrically couple to, and transmit data to, a read-head located on a magnetic stripe reader" and "a processor for controlling the circuit"

Petitioner argues Zellner discloses a portable package device. Pet. 32–33; Ex. 1008, 10:63–11:13, Fig. 12. Furthermore, Zellner's dynamic magnetic encoder emulates credit card strip information in

combination with Moullette's inductors allowing communication with legacy card reader terminals. Pet. 33–34; Ex. 1002 ¶¶ 88, 89. Finally, Zellner discloses a processor 150 configured to control the dynamic magnetic encoder that provides magnetic stripe information. Pet. 34–35; Ex. 1008, Fig. 1C, 5:54–61; Ex. 1002 ¶ 90.

b. Claim 1: "wherein the circuit is operable to communicate the data to the read-head while located outside of the magnetic stripe reader at a distance of at least a quarter of an inch from the read-head."

Petitioner argues that Zellner and Moullette teach this limitation, as Zellner teaches sharing credit card information with a requesting purchase system through a radio or magnetic interface while at a distance (Ex. 1008, 3:22–26; Ex. 1002 ¶ 91) and together Moullette and Zellner teach "the dimensions of personal communication devices, such as a cell phone, and magnetic card readers at the time of the alleged invention [such] that the distance between Zellner's dynamic magnetic encoder circuit and the read-head of the magnetic stripe reader" would have been within the scope of the claim. Pet. 36; Ex. 1002 ¶ 92.

c. Claim 12

Petitioner argues that Zellner and Moullette teach the limitations of claim 12 for the reasons discussed above with respect to claim 1. Pet. 40–41; *see* Pet. 6 (comparing claims 1 and 12).

d. Patent Owner Contentions

Patent Owner argues that Zellner only describes using a card that is swiped through a reader and lacks teachings about the magnetic encoder, and features. Prelim. Resp. 32–33; Ex. 1008, 1:64–2:2. We disagree. Zellner is not limited to physical magnetic stripe reading or contact by actual

swiping, but indicates that proximity to the reader allows for a reader to receive credit card information through a radio, magnetic, or other interface. Ex. 1008, 3:22–26; Ex. 1002 ¶ 91. We agree with Petitioner's evidence that both Zellner and Moullette teach communicating via magnetic stripe reads. Pet. 35–36; Ex. 1002 ¶ 92.

e. Conclusion

We find that Petitioner presents sufficient and persuasive evidence at this stage of the proceeding that Zellner teaches a dynamic magnetic encoder that provides magnetic stripe information to a reader. Pet. 32–36; Ex. 1002 ¶¶ 88–92.

4. Claims 4–7, 13–18, and 20

Petitioner provides argument and evidence citing to Zellner, Moullette, and Mr. Halliday that the asserted references teach the limitations of dependent claims 4–7, 13–18, and 20. Pet. 36–40, 41–43; Ex. 1002 ¶¶ 93–99, 104–109. We credit Petitioner's evidence at this stage and do not find Patent Owner's summary argument regarding claim 2, 3, 8, and 10 persuasive. Prelim. Resp. 29–30. We are not persuaded by Patent Owner's arguments which address Zellner's and Moullette's teachings separately and not the Zellner and Moullette combination Petitioner asserts. Prelim. Resp. 33–35.

We also disagree with Patent Owner that a person of skill in the art would not be motivated to combine the merchant device of Moullette with the merchant-based and tethered device of Moullette. Prelim. Resp. 36–37. As Petitioner argues, Zellner teaches that magnetic emulation of conventional magnetic stripe cards was "well known to those having skill in the art." Pet. 31 (quoting Ex. 1008, 5:35–39). We are persuaded on this

record that Zellner teaches the emulation of magnetic stripe cards that is a skilled artisan would know are applicable to the techniques applied in Moullette. Pet. 31; Ex. 1007, Abstract, 6:49–7:2. On this record, Petitioner provides sufficient argument and evidence that a person of ordinary skill in the art would be motivated to combine Zellner and Moullette. Pet. 31–32.

Based on the record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claims 4–7, 13–18, and 20 would have been obvious in view of Zellner and Moullette.

H. Obviousness of Claim 19: Zellner, Moullette, and Poidomani

Petitioner argues that Zellner, Moullette, and Poidomani would have rendered claim 19 obvious to a person of ordinary skill in the art under 35 U.S.C. § 103. Pet. 44–45; *see* Ex. 1002 ¶¶ 111–112.

Petitioner provides sufficient and persuasive rationale to combine Zellner and Moullette, as discussed above, and argues that a person of ordinary skill in the art would have been motivated to incorporate the teachings of Moullette as modified by Poidomani into Zellner's device. Pet. 44; Ex. 1002 ¶¶ 111–112. Petitioner notes that Zellner describes the dynamic magnetic encoder is a known technique with the skills of an ordinarily skilled artisan and that Moullette and Poidomani provide such teachings. *Id*.

Petitioner also asserts that the combination of Zellner, Moullette, and Poidomani teach the simultaneous electromagnetic fields that provide magnetic stripe data in dependent claim 19 for the same reasons described above for claims 9 and 11. Pet. 45; Ex. 1002 ¶ 113. Patent Owner's arguments regarding independent claim 12 from which claim 19 depends

address the references separately and fail to address Petitioner's combination.

Based on the record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claim 19 would have been obvious in view of Zellner, Moullette, and Poidomani.

I. Obviousness of Claims 1–3, 8, and 10: Doughty

Petitioner provides argument the Doughty renders claims 1–3, 8, and 10 obvious. Pet. 45–51; Ex. 1002 ¶¶ 114–123.

1. Overview of Doughty (Ex. 1012)

Doughty describes "a system, method and apparatus that includes a user device having a magnetic field generator" and a processor disposed within a substrate. Ex. 1012, Abstract, ¶ 77, claim 1. Doughty discloses creating a magnetic signal using one or more induction coils, where "the magnetic field generator emulates a programmable magnetic stripe." *Id.* Doughty states that the substrate "may be integrated into a personal communication device, such as . . . a telecommunications device." *Id.* ¶ 48. Figure 3 of Doughty, shown below, illustrates a block diagram of the invention. *Id.* ¶ 17.

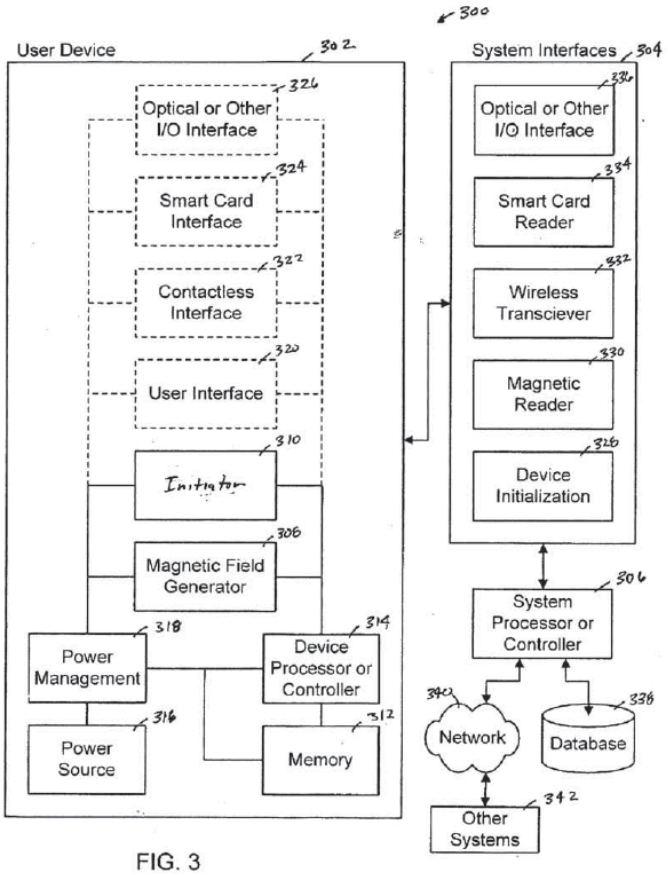

FIG. 3

In Figure 3, Doughty depicts a system 300 with user device 302 and system interface 304 used for security and/or commercial transactions. *Id.* ¶¶ 8, 41. User device 302 includes memory 312, processor 314, magnetic field generator 306, user interface 320, contactless interface 322, smart card interface 324, and optical or other I/O interface 326. *Id.* Magnetic field generator 306 is coupled to device processor 314 and emulates a programmable magnetic stripe using inductive coils. *Id.* ¶¶ 10, 43. The contactless interface 322 is coupled to the device processor 314 and includes an antenna for wireless communication. *Id.* ¶ 47. Smartcard interface 324 is coupled to device processor 314. *Id.* The components of user device 302 are disposed within or mounted on a substrate, and may be integrated into a

personal communication device such as a telecommunications device. *Id.* ¶¶ 47–48. The interfaces of user device 302 communicate with respective magnetic reader 330, wireless transceiver 332, smart card reader 334, and I/O interface 336 of system interface 304. *Id.* ¶ 49

2. Claim 1

Petitioner provides citations to Doughty and the testimony of Mr. Halliday to support that Doughty teaches the claim 1 limitations for a device, circuitry operable to emit electromagnetic fields and couple to a magnetic stripe reader, and a processor. Pet. 45–47. Petitioner also asserts that Doughty teaches the components that can be mounted on a substrate that is part of the personal communication device includes a programmable magnetic stripe that can be used in physical proximity to a card reader. Ex. 1012 ¶ 53; Ex. 1002 ¶¶ 118–119. Petitioner provides sufficient testimony and argument at this stage of the proceeding to support that an ordinarily skilled artisan would have understood Doughty's device and magnetic card readers such that the distance between the device and the reader would have been within the bounds of claim 1's distance limitation. Pet. 47–48; Ex. 1002 ¶ 119.

Patent Owner contends that Doughty teaches embodiments that require a card generating magnetic signals to be put through the slot of a credit card reader or placed within a reader. Prelim. Resp. 41–42; Ex. 1012 Figs. 4A, 4B, 5A, 5B, 6. Patent Owner argues that this is reinforced by the substrate in Doughty being described as within credit cards or similar structures. Ex. 1012 ¶ 48. Because Doughty describes the inductive coils providing data to the heads while being in physical contact with reader, Patent Owner argues that Doughty does not suggest that invention could be

used outside of the conventional card reader. Prelim. Resp. 43. Although Patent Owner's arguments describe certain embodiments of Doughty, at this stage of the proceeding we credit Petitioner's evidence and testimony supporting that Doughty teaches that proximity to the reader allows the transmission of data via the magnetic field. Indeed, Patent Owner notes that Doughty mentions that the substrate identified may be integrated into communication devices that would not able to physically contact the card reader. Prelim. Resp. 43–44; Ex. 1012 ¶ 48. We are not persuaded by Patent Owner's arguments that a person of ordinary skill in the art would not know how to integrate the substrate into the portable devices Doughty suggests. Prelim. Resp. 44; Ex. 1012 ¶ 48. Accordingly, we agree with Petitioner on the present record that Petitioner has shown sufficiently that the Doughty device could be used to generate magnetic data within proximity of the reader in a device. Pet. 45–48.

At this stage of the proceeding in light of the current record, we are persuaded that Petitioner has shown that Doughty teaches the limitations of claim 1. We find the testimony of Mr. Halliday and citations to the record supports a finding of a reasonable likelihood that Petitioner would prevail in showing that challenged independent claim 1 would have been obvious in view of Doughty.

3. Claims 2, 3, 8, and 10

Petitioner provides argument and evidence citing to Doughty and Mr. Halliday that Moullette teaches the limitations of dependent claims 2, 3, 8, and 10. Pet. 49–51; Ex. 1002 ¶¶ 120–123. We credit Petitioner's evidence at this stage and do not find Patent Owner's summary argument regarding claim 2, 3, 8, and 10 persuasive. Prelim. Resp. 45. Based on the

record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claims 2, 3, 8, and 10 would have been obvious in view of Doughty.

J. Obviousness of Claims 9 and 11: Doughty and Poidomani

Petitioner argues that Doughty and Poidomani would have rendered claims 9 and 11 obvious. Pet. 51–54; Ex. 1002 ¶¶ 124–128.

1. Motivation to Combine

Petitioner asserts that "[a person of ordinary skill in the art] would have been motivated to modify Doughty in view of Poidomani to ensure Doughty's device could emit multiple electromagnetic fields in parallel, to the extent not already disclosed." Pet. 51 (citing Ex. 1002 ¶¶ 124–127). With respect to claims 9 and 11, that recite operating electromagnetic fields in parallel, Petitioner cites Doughty's disclosure of a device with one or more induction coils (Ex. 1012 ¶¶ 10, 35) and Poidomani's disclosure of multiple coils that avoid interference or cross talk by using two coils and two cancellation coils (Ex. 1009 ¶¶ 35, 100) as teaching the limitations of claim 9 and 11. Pet. 52; Ex. 1002 ¶ 126.

We are not persuaded by Patent Owner's summary arguments, and instead credit Petitioner's evidence and argument that a person of skill in the art would have understood that the first and second electromagnetic fields could be sent in parallel. Ex. 1009 ¶ 100; Ex. 1002 ¶ 128; Pet 53–54. We find the testimony of Mr. Halliday and citations to the record supports a finding of a reasonable likelihood that Petitioner would prevail in showing that claim 9 and 11 would have been obvious in view of Doughty and Poidomani.

Having considered the parties' arguments and supporting evidence regarding the rationale for combining the teachings of Doughty and Poidomani, at this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings from the cited prior art to arrive at the inventions recited in the challenged claims.

K. Obviousness of Claims 4–7, 12–18, and 20: Doughty and Zellner

Petitioner provides argument and evidence in support of its contention that Doughty and Zellner teach the limitations of claims 4–7, 12–17, and 20. Pet. 54–65. Specifically, Petitioner provides a motivation to combine Doughty and Zellner, arguing that Doughty expressly contemplates a portable device with a magnetic field generator to emulate programmable stripe data (Ex. 1012 ¶ 10) and that such a device is a telecommunication device (*id.* ¶ 62). Petitioner states that Zellner describes a similar emulation device and expressly describes a portable communication device. Ex. 1008, 1:60–64, 7:42–58; 9:51, 10:63–11:13. Petitioner argues that "[b]ecause Doughty itself states that its device can be a telecommunications device, a POSITA would have been motivated to modify Doughty (to the extent necessary) to use a cell phone with a cellular transceiver as described by Zellner, and would have had a reasonable expectation of success in doing so." Pet. 56 (citing Ex. 1002 ¶ 134).

Having considered the parties' arguments and supporting evidence regarding the rationale for combining the teachings of Moullette and Zellner, at this stage of the proceeding, we find Petitioner provides an adequate reason that a person of skill in the art would have combined the teachings

from the cited prior art to arrive at the inventions recited in the challenged claims.

Petitioner provides sufficient citations to Doughty, Zellner, and Mr. Halliday to support that the asserted references teach the limitations of claims 4–7, 12–18, and 20. Pet. 54–65; Ex. 1002 ¶¶ 131–159. We are not persuaded by Patent Owner's arguments that Doughty fails to teach a person of ordinary skill in the art to enable the incorporation of the substrate used to generate the electromagnetic field into the portable devices. Prelim. Resp. 46–48. Petitioner provides sufficient argument at this stage that the combination of known electromagnetic field techniques is within the level of skill of the ordinary artisan. *See* Pet. 56; Ex. 1002 ¶ 134; *see also* Pet. 1–3 (discussing technology background). Thus, we do not agree that Doughty and Zellner fail to disclose the portable telephonic device recited in claims 4 and 12.

With respect to claims 5–7, 13–18, and 20, we credit Petitioner's argument and evidence and do not find Patent Owner's arguments that the display, touch sensitive display, virtual card, and graphical user interface (Prelim. Resp. 49–56) persuasive on the present record. At this stage Petitioner presents sufficient evidence that the interfaces taught by Zellner and Doughty along with the knowledge of a person of ordinary skill in the art teaches the limitations of claims 5–7, 13–18, and 20. Pet. 58–65.

Based on the record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claims 5–7, 13–18, and 20 would have been obvious in view of Doughty and Zellner.

L. Obviousness of Claims 19: Doughty, Zellner, Poidomani

Petitioner argues that Doughty, Zellner, and Poidomani would have rendered claim 19 obvious to a person of ordinary skill in the art. Pet. 65–67; *see* Ex. 1002 ¶¶ 161–164.

Petitioner provides sufficient and persuasive rationale to combine Doughty, Zellner and Moullette, as discussed above, and argues that a person of ordinary skill would have been motivated to modify Doughty in view of either Zellner or Poidomani, and also would have been motivated to modify Doughty in view of both Zellner and Poidomani. Pet. 65–66; Ex. 1002 ¶¶ 161–162. As discussed above with respect to claims 9 and 11. Petitioner asserts that the combination of Doughty, Zellner, and Poidomani teach the simultaneous electromagnetic fields that provide magnetic stripe data in dependent claim 19 for the same reasons described above for claims 9 and 11. Pet. 66–67. We are not persuaded by Patent Owner's arguments regarding independent claim 12 from which claim 19 depends that address the references separately and fail to address Petitioner's combination.

Based on the record before us, we find that Petitioner demonstrates a reasonable likelihood of showing that challenged dependent claim 19 would have been obvious in view of Doughty, Zellner, and Poidomani.

V. CONCLUSION

For the foregoing reasons, we determine Petitioner has demonstrated there is a reasonable likelihood it would prevail in establishing the unpatentability of (1) claims 1–3, 8, and 10 over Moullette; (2) claims 9 and 11 over Moullette and Poidomani; (3) claims 1, 4–7, 12–18, and 20 over Moullette and Zellner; (4) claim 19 over Zellner, Moullette, and Poidomani;

(5) claims 1–3, 8, and 10 over Doughty; (6) claims 9 and 11 over Doughty and Poidomani; (7) claims 4–7, 12–18, and 20 over Doughty and Zellner; and (8) claim 19 over Doughty, Zellner, and Poidomani. We also decline to exercise our discretion under 35 U.S.C. § 314(a) to deny either of the proposed challenges to patentability.

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. At this preliminary stage, we have not made a final determination with respect to the patentability of the challenged claims or *any* underlying factual and legal issues. Our final decision will be based on the record as fully developed during trial. For the foregoing reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that at least one claim of the '100 patent is unpatentable.

VI. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–20 of U.S. Patent No. 10,032,100 B2 is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of U.S. Patent No. 10,032,100 B2 shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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