

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ASKELADDEN, L.L.C.,  
Petitioner,

v.

OHVA, INC.,  
Patent Owner.

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IPR2023-00921  
Patent 9,679,286 B2

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Before JOSIAH C. COCKS, AMEE A. SHAH, and JASON W. MELVIN,  
*Administrative Patent Judges.*

SHAH, *Administrative Patent Judge.*

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

## I. INTRODUCTION

Askeladden L.L.C. (“Petitioner”) filed a Petition per 35 U.S.C. §§ 311–319 for *inter partes* review of claims 1–4 (“the Challenged Claims” of U.S. Patent No. 9,679,286 B2 (Ex. 1001, “the ’286 patent”)). Paper 2 (“Pet.”). OHVA, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Pursuant to our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 8 (“Reply”)) and Patent Owner filed a Sur-reply (Paper 10 (“Sur-reply”)).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and any response thereto shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Considering the Petition, the Preliminary Response, the Reply, the Sur-reply, and the evidence of record, we determine that Petitioner does not show a reasonable likelihood that at least one of the challenged claims is unpatentable. Accordingly, we do not institute *inter partes* review.

## II. BACKGROUND

### A. RELATED MATTERS

The parties note that Patent Owner has asserted infringement of the ’286 patent in the following proceedings:

*OHVA, Inc. v. Helcim USA Inc.*, 1:18-cv-01945 (D.Del.);

*OHVA, Inc. v. CardFlight, Inc.*, 1:18-cv-01992 (D.Del.);

*OHVA, Inc., v. PayStand Inc.*, 1:19-cv-00083 (D.Del.);

*OHVA, Inc., v. Unified Payments, LLC*, 1:19-cv-00084 (D.Del.);

*OHVA, Inc. v. Payroc LLC*, 1:19-cv-03750 (N.D.Ill.);

*OHVA, Inc. v. Eventbrite, Inc.*, 3:19-cv-03342 (N.D.Cal.);

*OHVA, Inc. v. National Bankcard Inc.*, 1:19-cv-06114 (S.D.N.Y.);  
*OHVA, Inc. v. Blackbaud, Inc.*, 2:19-cv-00309 (E.D.Tex.);  
*OHVA, Inc. v. Shift4 Payments, LLC*, 1:19-cv-01857 (D.Del.);  
*OHVA, Inc. v. AffiniPay, LLC*, 1:20-cv-00065 (W.D.Tex.);  
*OHVA, Inc. v. AnywhereCommerce Services LLC*, 1:20-cv-00214  
(D.Del.);  
*OHVA Inc. v. eProcessing Network LLC*, 4:20-cv-01247 (S.D.Tex.);  
*OHVA Inc. v. Ace Merchant Processing LLC*, 4:20-cv-01244 (W.D.Tex.);  
*OHVA, Inc. v. AnywhereCommerce Inc.*, 6:20-cv-01191 (W.D.Tex.);  
*OHVA, Inc. v. Bbpos Corp.*, 1:22-cv-00468 (D.Del.);  
*OHVA, Inc. v. Fiserv, Inc.*, 6:22-cv-00366 (W.D.Tex.);  
*OHVA, Inc. v. Electronic Merchant Systems, LLC*, 6:22-cv-00935  
(W.D.Tex.);  
*OHVA, Inc. v. Feitian Technologies Co., Ltd.*, 6:22-cv-00936  
(W.D.Tex.);  
*OHVA, INC. v. MAGTEK, INC.*, 2:22-cv-03628 (E.D.Pa.);  
*OHVA, Inc. v. Payzer, LLC*, 1:22-cv-01199 (D.Del.);  
*OHVA, Inc. v. VeriFone, Inc.*, 1:22-cv-01204 (D.Del.); and  
*OHVA, Inc. v. Shopify, Inc.*, 6:22-cv-01270 (W.D.Tex.).

Pet. 1–3; Paper 4, 2. Petitioner indicates that all but two of the above-identified proceedings are terminated, the two remaining being *OHVA, Inc. v. Fiserv, Inc.* and *OHVA, Inc. v. Shopify, Inc.* Pet. 1–3. Patent Owner, however, indicates that all of the above-identified proceedings are terminated. Paper 4, 2.

B. REAL PARTIES-IN-INTEREST

Petitioner certifies that the real party in interest is “Askeladden L.L.C.” Pet. 1.

Patent Owner certifies that the real party in interest is “OHVA, Inc.” Paper 4, 1.

C. OVERVIEW OF THE ’286 PATENT

The ’286 patent is titled “METHODS AND APPARATUS FOR ENABLING SECURE NETWORK-BASED TRANSACTION,” and issued on June 13, 2017, from U.S. Patent Application No. 14/636,674 (“the ’674 application”), filed Mar. 3, 2015. Ex. 1001, codes (21), (22), (45), (54). The ’286 patent, as indicated on its face,<sup>1</sup> is a continuation of U.S. Patent Application No. 14/524,842, filed Oct. 27, 2014, which is a continuation of U.S. Patent Application No. 11/533,030, filed Sept. 19, 2006, and refers back to Provisional Application No. 60/719,273, filed Sept. 20, 2005. *Id.* at codes (60), (63).

The apparatus includes:

a transaction card bearing data and having an output interface capable of transmitting the data, a card reader having an input interface enabled to accept the data from the output interface of the transaction card, conversion circuitry converting the card data to an analog modulated signal, and an output pin from the card reader adapted to engage in a microphone port of a computerized appliance, the output pin providing the analog

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<sup>1</sup> Petitioner contends that the identification of the ’674 application as being a continuation is incorrect and should instead be a continuation-in-part. Pet. 4–5.

modulated signal to the port, and thence to the computerized appliance.

*Id.* at code (57).

The '286 patent explains that, as background, “[i]ntegrated circuit cards, commonly referred to as smart cards, are widely used in stores to secure electronic payments.” *Id.* at 1:24–26. It also discusses that smart cards provide the best security but have not been adopted in the online market mainly because of the high cost and complexity for most people and the requirement of providing a card and reader “to the millions of potential end-users who comprise this market base.” *Id.* at 1:26–32.

The '286 patent describes an existing system for secure online transactions that includes “a smart card transmitting an identification sequence to a PC in the form of a modulated signal, a card reader plugged into the microphone input of the PC sound card, and a PC applet demodulating the identification sequence.” Ex. 1001, 1:33–38. Also known are “a method and [an] apparatus to secure online transactions over the phone.” *Id.* at 1:50–51. However, “[w]hat is clearly needed is improved and more secure client/server methods including transmission packaging of secure authentication over a network aided in some case by user-friendly peripherals and devices for performing secure transactions over a data-packet-network.” *Id.* at 1:57–61.

In the “BRIEF SUMMARY OF THE INVENTION” section, the '286 patent discloses that the computerized appliance of its apparatus “has sound conversion circuitry converting the analog modulated signal to digital data” and “comprise[s] a processor executing coded instructions from a non-transitory medium” in which a “coded instruction executed by the processor

cause[s] the data to be used in a communication on the network.” Ex. 1001, 2:8–15. According to the ’286 patent, the disclosed apparatus “may be used in a variety of ways using hardware and/or software to provide secure authentication over a network for users and user groups” via “a modulated sound consisting at least in part of an identification number and a session key.” *Id.* at 3:54–61.

Figure 2, reproduced below, shows “an architectural overview of interaction between a user and an authentication server” in accordance with one embodiment of the ’286 patent. Ex. 1001, 3:7–9, 5:32–34.

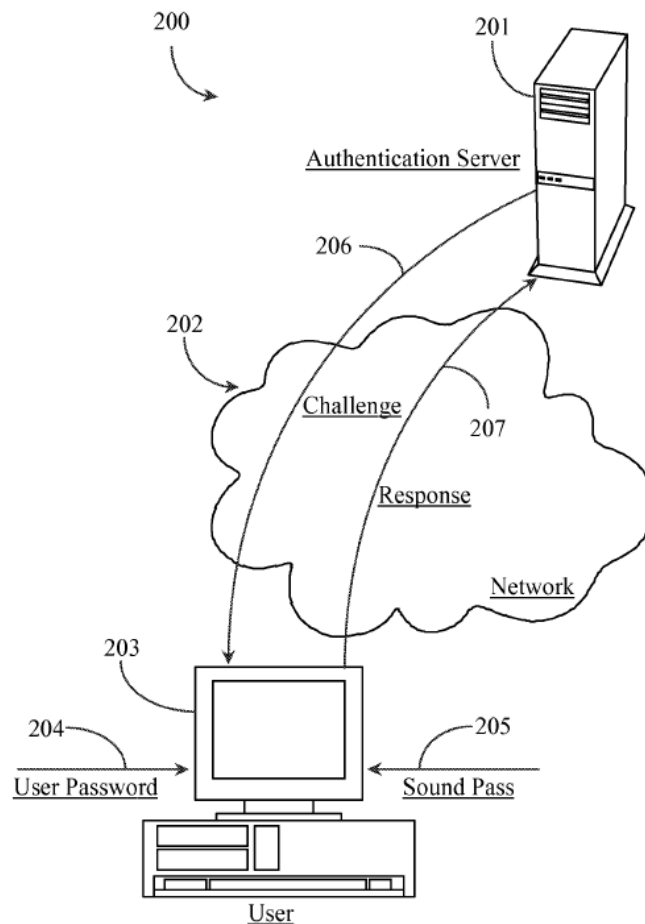


**Fig. 2**

Figure 2 illustrates an architectural overview 200 of interaction between user 203 and authentication server 201 that is adapted to authenticate user 203 for access to a secure resource, in which authentication server 201 may “includ[e] a transaction portal authenticating transaction for a group of web merchants or banks” and is “adapted to handle secure transactions for individuals.” Ex. 1001, 5:34–40. User 203 operates a PC, i.e., a “client-operated personal computing appliance,” having a network connection to authentication server 201 over network 202 using password 204 and a token that generates a session key. *Id.* at 4:51–52, 5:47–55. Network 202 may be an Internet, Intranet, or wireless telephone network. *Id.* at 5:49–51. User 203 first receives an applet from authentication server 201 which contains a modem and a session key and the “modem demodulates and decodes the signal and includes an encryption algorithm for handling the challenge/response interaction between the user and server.” *Id.* at 5:56–61. User 203 then “enters a password or pin code locally and inserts the sound token, which generates the modulated sound into an audio input on the PC.” *Id.* at 5:61–64. “The session key automatically encrypts the password or PIN ensuring a permanent password encryption state meaning that the password or PIN is never transmitted over the network to the server in a clear or unencrypted state.” *Id.* at 5:64–67. The ’286 patent discloses that sound pass 205 is a sound signal that “may be provided in at least three system compatible forms” and that “any hardware device capable of playing a sound may be incorporated as a sound pass token.” *Id.* at 6:50–55.

One such device “that may serve as a sound pass token is a smart card used in conjunction with a card reader.” Ex. 1001, 6:56–59. Figure 6,

reproduced below, “illustrat[es] basic electronics of a smart card signal generator coupled to a card reader.” *Id.* at 3:19–20.

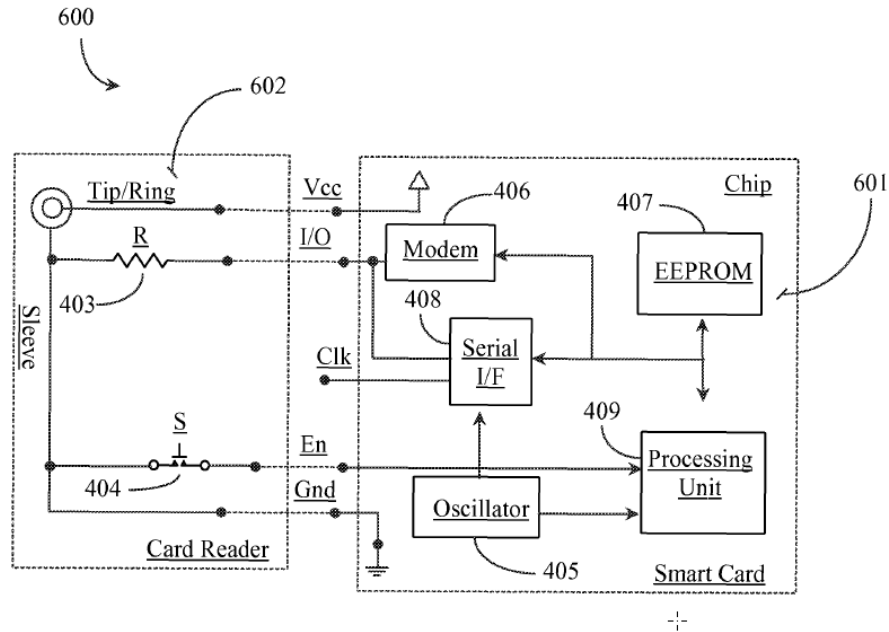


**Fig. 6**

Figure 6 depicts the electronics of smart card signal generator 601 that has a sound pass chip embedded therein coupled to card reader 602. Ex. 1001, 8:27–30. Card 601 plugs into card reader 602, “which in turn is plugged into the microphone input of the host commuting appliance or other line input capable of carrying sound and directly or indirectly connected to the sound card on the computing appliance such as a PC.” *Id.* at 8:30–35. Reader 602 has no processing components; microprocessor 409 is part of the embedded chip in card 601. *Id.* at 8:39–44. The ’286 patent discloses a smart card signal generator 601 can be coupled to a card reader 602. *Id.* at 8:26–28, Fig. 6.

Figure 7, reproduced below, shows “an architectural overview of interaction using the system of the invention including authentication server

and a mobile device for signal generation” according to another embodiment of the ’286 patent. Ex. 1001, 3:7–9, 5:32–34.

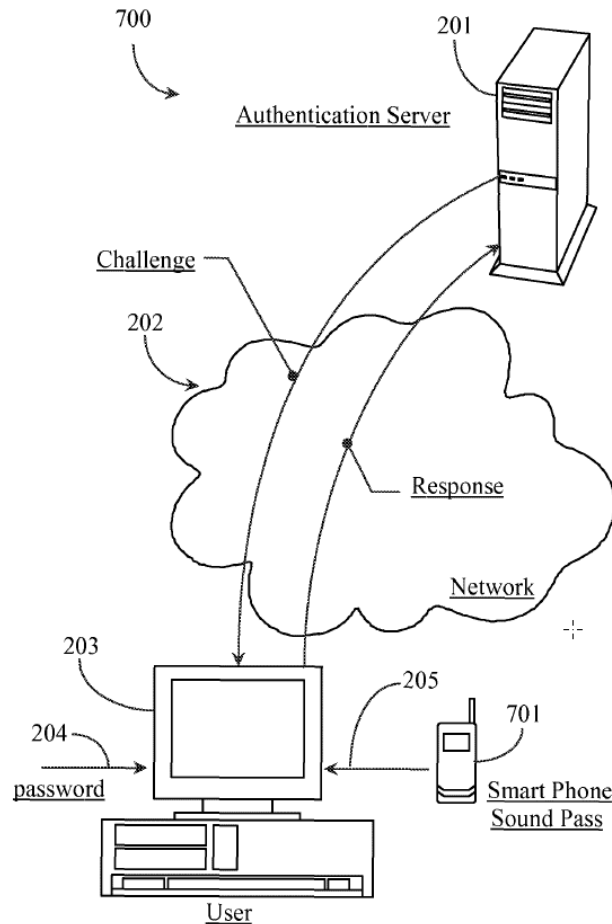


**Fig. 7**

Figure 7 illustrates an architectural overview of an embodiment using the invention's system including authentication server 201 and mobile device 701 for signal generation. Ex. 1001, 9:38–41. In this embodiment, mobile device such as smart phone 701 can be used for signal generation of sound pass 205 such that “a sound file may serve as the token that includes the user ID number.” *Id.* at 9:38–44. For example, “a modulated audio signal is generated by a sound-generating applet installed on and executable

from mobile device 701, which is a smartphone” but “may instead be a PDA or a hand-held music player such as an Ipod™.” *Id.* at 9:45–49. “The output speaker system of mobile device 701 may be leveraged to play the modulated sound pass into a microphone plugged into PC 203” in which “[t]he server challenge is a hash of the user password and the PC response is the modulated sound pass sent to the PC from mobile device 701 acoustically.” *Id.* at 9:51–57.

The '286 patent also discloses user authentication using a card verification value (CVV) code, as illustrated in Figure 11, reproduced below.

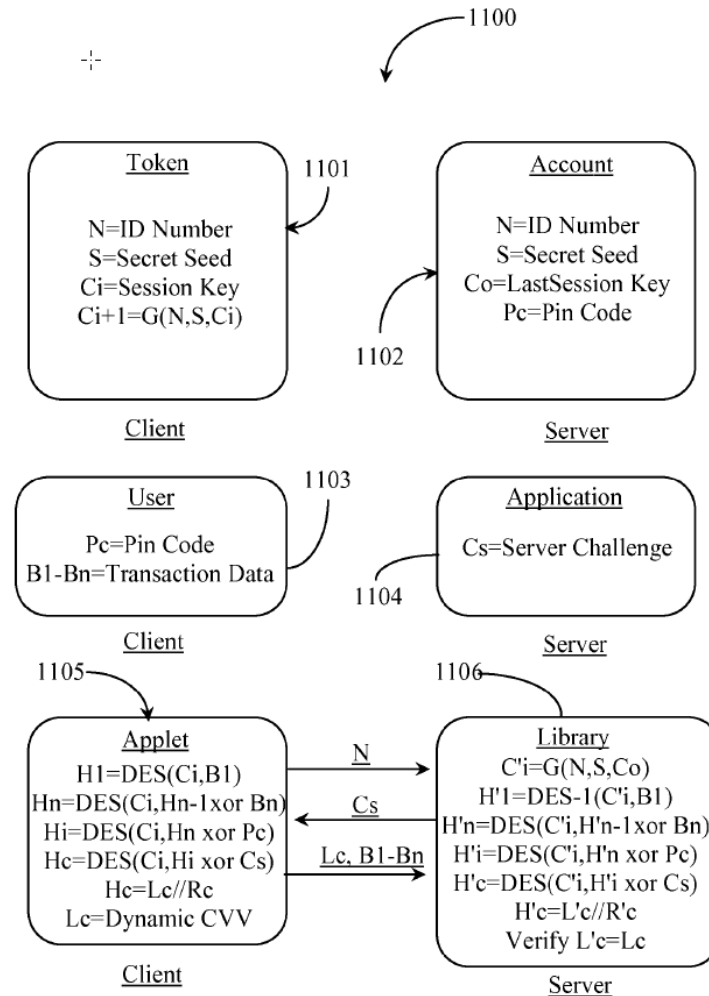


Fig. 11

Figure 11 “is a block diagram illustrating user authentication using a card verification value (CVV) code.” Ex. 1001, 3:36–37. In this example, financial institutions deploy secure smart card in on which the sound pass token chip is embedded. *Id.* at 12:15–18. The cards are used with a card reader plugged into a microphone jack on the user personal computer as described above. *Id.* at 12:18–21. The bank card, i.e., token 1101, includes token parameters an ID number N, a secret seed S, a current session key  $C_i$ , and a generated new session key  $C_{i+1}$ . *Id.* at 12:22–28, 32–33. The client account information includes ID number N, secret seed S, last session key  $C_o$ , and client PIN code  $P_c$ . *Id.* at 12:28–31. The user enters a PIN code  $P_c$  and performs “a series of banking transactions by submitting transaction data  $B_1$ - $B_n$ . For each transaction, a new hash code ( $H_c$ ) is generated by applet 1205 on the client PC,” and “[t]he final  $H_c$  is a dynamic card verification value (CVV) [ $L_c$ ] based on the session key, the transaction data ( $b_1$ - $B_n$ ) for the instant transaction, and the  $P_c$ ,” the final  $H_c+L_c$  then sent to the server for verification. *Id.* at 12:34–42. The server generates its own hash after the user has entered their PIN and the transaction data for that session to generate its  $L'_c$ , compares that to the received  $H_c L_c$  for each transaction, and the transaction is authenticated when the compared hash codes are identical. *Id.* at 12:43–50.

#### D. ILLUSTRATIVE CLAIM

Of the challenged claims, claims 1 and 3 are independent. Claim 2 depends from independent claim 1, and claim 4 depends from independent claim 3.

Claim 1 is reproduced below with certain reformatting:<sup>2</sup>

1. [[1.0]] An apparatus comprising:

[[1.1.1]] a card reader having an input interface configured to accept transaction data from an output interface of a transaction card,

[[1.1.2]] and an output pin, as a part of the card reader, configured to directly connect the card reader to a microphone port of a smart telephone,

[[1.1.3]] the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

[[1.2]] coded instructions stored in a non-transitory medium of a first Internet-connected server, and accessible by a user of the card reader;

[[1.3.1]] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,

[[1.3.2]] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

Ex. 1001, 16:16–38.

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<sup>2</sup> We apply the same identifiers Petitioner uses for the different portions of claim 1. Pet. 39–58.

E. ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner challenges the patentability of claims 1–4 of the '286 patent on the following grounds (Pet. 6):

| <b>Claims Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)</b>                                          |
|--------------------------|--------------------|--------------------------------------------------------------|
| 1                        | 103                | Cho, <sup>3</sup> Aaron, <sup>4</sup> Carpenter <sup>5</sup> |
| 2                        | 103                | Cho, Aaron, Carpenter, de Geer <sup>6</sup>                  |
| 3                        | 103                | Cho, Aaron                                                   |
| 4                        | 103                | Cho, Aaron, de Geer                                          |

In support of its unpatentability contentions, Petitioner also relies on the Declaration of Bruce McNair. Ex. 1003 (“McNair Declaration”). Petitioner further relies on the Declaration of Glenn J. Perry (Ex. 1009, “Perry Declaration”) in support of its contention that only Askeladden L.L.C. is the real party-in-interest. Pet 1. Patent Owner relies on the Declaration of Donald R. Boys (Ex. 2001, “Boys Declaration”) in support of its contentions relative to the issues concerning the priority date of the '286 patent. Prelim. Resp. 3.

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<sup>3</sup> Cho et al., U.S. Patent No. 9,330,385 B2, issued May 3, 2016 (Ex. 1005, “Cho”).

<sup>4</sup> Aaron et al., U.S. Patent Application Publication No. 2013/0185208 A1, published July 18, 2013 (Ex. 1006, “Aaron”).

<sup>5</sup> Carpenter et al., U.S. Patent Application Publication No. 2013/0124606 A1, published May 16, 2013 (Ex. 1008, “Carpenter”).

<sup>6</sup> de Geer et al., U.S. Patent Application Publication No. 2014/0008432 A1, published Jan. 9, 2014 (Ex. 1007, “de Geer”).

### III. ANALYSIS

#### A. LEGAL STANDARDS

In an *inter partes* review, the petitioner has the burden of showing there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition. 35 U.S.C. § 314. That burden never shifts to the patentee. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

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 legal 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 ordinary skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness.<sup>7</sup> *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinning to combine teachings. *See KSR*, 550 U.S. at 418.

To show obviousness, it is not enough to merely show that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360

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<sup>7</sup> The record at this time does not include allegations or evidence of objective indicia of obviousness or nonobviousness.

(Fed. Cir. 2011). “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418–419.

On the other hand, an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). However, a 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). Instead, a petitioner must articulate a reason why a person of ordinary skill in the art would have combined or modified the prior art references. *In re NuVasive, Inc.*, 842 F.3d 1376, 1382 (Fed. Cir. 2016); *see also Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1366 (Fed. Cir. 2017) (“In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason why a person of skill in the art would have made the combination.”); *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014)).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. LEVEL OF ORDINARY SKILL

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted).

Petitioner contends that a person of ordinary skill in the art at the time of the invention (“POSITA,” “PHOSITA,” or “skilled artisan”) “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related subject, and one to two years of work experience in mobile payment transactions or a related field” and that “[l]ess experience is necessary with additional education (e.g., a Master’s degree), and likewise, less education is necessary with additional work experience (e.g., 5–6 years).” Pet. 7 (citing Ex. 1003 ¶¶ 57–60).

At this stage, Patent Owner states that it “does not materially dispute Petitioner’s definition of a POSITA.” Prelim. Resp. 11.

For purposes of this Decision, we find that the ’286 patent and the cited prior art references reflect the appropriate level of skill at the time of the claimed invention and that the level of appropriate skill reflected in these references and in the ’286 patent is consistent with the level of skill proposed by Petitioner. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Accordingly, for purposes of this Decision, we adopt Petitioner’s proposed definition for a person of ordinary skill in the art.

C. CLAIM CONSTRUCTION

In this *inter partes* review, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). In applying this standard, we generally give claim terms their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

Petitioner contends that “no claim term requires construction beyond its ordinary and customary meaning.” Pet. 28.

Patent Owner contends that “[t]he Board can deny the Petition without engaging in claim construction because the Petition is deficient under any construction.” Prelim. Resp. 11.

To the extent necessary, we discuss the meaning of a claim term (“transaction data”) in our analysis below. We, however, need not construe explicitly any of the claim terms proposed by Petitioner to reach our decision about institution. *See Realtime Data*, 912 F.3d at 1375 (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

At this stage, neither party has identified any indication that the ’286 patent uses any term differently than it would ordinarily be used or any indication in the prosecution history that “compel[s] a limitation of the claim language different from its plain meaning” as alternatives. *Schumer v. Lab. Comput. Sys., Inc.*, 308 F.3d 1304, 1311, 1314 (Fed. Cir. 2002).

D. EARLIEST EFFECTIVE FILING DATE OF CHALLENGED CLAIMS

The '286 patent claims priority as a continuation of application 14/524,842, filed on July 31, 2007 (“the '842 application,” issued as U.S. Patent No. 9,003,508), which claims priority as a continuation of application 11/533,030, filed on September 19, 2006 (the ‘030 application,” abandoned). Ex. 1001, code (63). The '286 patent also lists as “Related U.S. Application Data” provisional application 60/719,273 (“the '273 provisional”) filed on September 20, 2005. *Id.* at code (60). Petitioner contends the earliest possible effective filing date for claims 1–4 of the '286 patent is March, 3, 2015, i.e., the filing date of the '674 application. Pet. 12; Reply 1–5. Conversely, Patent Owner asserts that claims 1–4 of the '286 patent are entitled to a priority date of September 19, 2006, the filing date of the '030 application. Prelim. Resp. 13, Sur-Reply 1–5.

As explained in this Decision, we decline to institute review based on the *merits* of Petitioner’s challenges. Accordingly, we need not and do not determine the effective filing date.

E. FAILURE TO IDENTIFY ALL PARTIES IN INTEREST UNDER  
35 U.S.C. § 312(A)

Patent Owner argues that “the Petition should be denied for Petitioner’s failure to identify all real parties in interest, as required by 35 U.S.C. § 312(a)(2).” Prelim. Resp. 5–6. Specifically, Patent Owner alleges that Askeladdan, LLC is not the only party in interest. *Id.* at 6. Rather, according to Patent Owner, “The Clearing House Payments Company, L.L.C. (‘TCH’),” which “is a ‘banking association and payments company that is owned by the largest commercial banks,” “owns the Petitioner, is its

sole member, and Petitioner is a ‘product of thought leadership provided by’ TCH.” *Id.*

Patent Owner argues that “[t]he practical reality is that TCH’s member banks may potentially infringe the ’286 Patent, and that they—along with TCH itself—are real parties in interest just as much as Petitioner.” Prelim. Resp. 6. Further, Patent Owner assert that “the Board has repeatedly found TCH to be a real party in interest due to TCH’s ownership, control, and funding of Petitioner.” *Id.* (citing cases).

As explained in this Decision, we decline to institute review based on the *merits* of Petitioner’s challenges. Accordingly, we need not and do not determine whether it would be appropriate to deny institution under 35 U.S.C. § 312(a).

#### F. REQUEST FOR DISCRETIONARY DENIAL

Patent Owner argues that we should exercise discretion under 35 U.S.C. § 314(a)<sup>8</sup> and deny institution under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). Prelim. Resp. 23–29.

As explained in this Decision, we decline to institute review based on the *merits* of Petitioner’s challenges. Accordingly, we need not and do not determine whether it would be appropriate to discretionarily deny institution under § 314(a) or § 325(d).

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<sup>8</sup> Although Patent Owner styles it’s request as being based on 35 U.S.C. § 325(d), the request is more relevant to 35 U.S.C. § 314(a).

G. OVERVIEW OF CITED ART AND EVIDENCE

1. *Overview of Cho – Exhibit 1005*

Cho is titled “CARD PAYMENT SYSTEM” and was issued on May 3, 2016, from U.S. Patent Application No. 14/013,107, filed Aug. 29, 2013. Ex. 1005, codes (21), (22), (45), (54). The card payment system includes:

a card payment apparatus, having an audio jack, configured to: read account information stored on a payment card, transmit the account information via a microphone contact of an audio jack, and receive an acoustic signal via at least one earphone contact of the audio jack; and a client device, having an audio jack socket to receive the audio jack, configured to: receive, from the card payment apparatus, the account information via a receptor for the microphone contact of the audio jack, and transmit, to the card payment apparatus, the acoustic signal via the at least one earphone contact.

*Id.* at code (57).

Figure 1, reproduced below, shows a “system configuration” implementing “a card payment apparatus” of Cho. *Id.* at 2:1–3, 3:3–5.

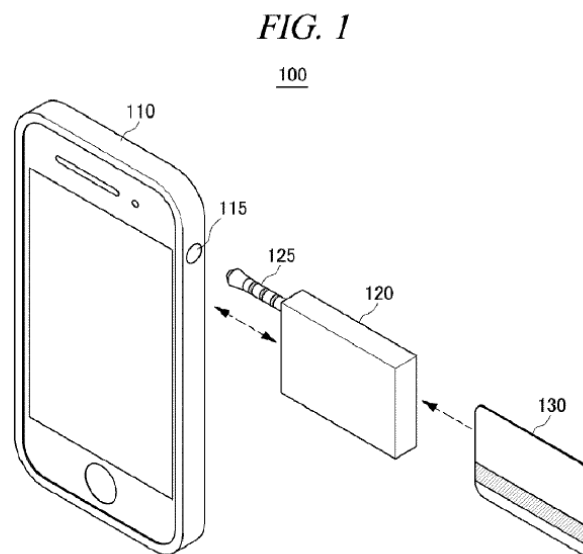


Figure 1 illustrates system configuration 100 that includes client device 110 and card payment apparatus 120. Ex. 1005, 3:5–7. Client device 110 includes audio jack socket 115, such as that of a mobile phone, and card payment apparatus 120 includes audio jack 125. *Id.* at 3:7–9, 3:18–19. Client device 110 and card payment apparatus 120 may be connected when audio jack socket 115 receives audio jack 125. “In some embodiments, audio jack 125 may include at least one earphone contact, a ground contact and a microphone contact.” *Id.* at 4:58–60.

Client device 110 is “configured to receive, from card payment apparatus 120 via audio jack 125, a first analog signal to which a first digital signal is converted.” Ex. 1005, 3:20–22. That digital signal includes account information read from card 130. “[T]he account information may include at least one of an account number, a card expiration date, etc.” *Id.* at 3:24–27. Client device 110 “may be configured to execute a card payment based at least in part on the account information through a card payment server.” Ex. 1005, 3:52–55.

Card payment apparatus 120 is also configured to read account information into the first analog signal “using any well-known digital-analog converting scheme.” *Id.* at 3:27–30. Card payment apparatus 120 includes card reader 230 that may be a magnetic strip reader 230 configured to read account information from a magnetic strip of card 130 or may be an integrated circuit chip reader configured to read account information from an integrated circuit chip of card 130. *Id.* at 4:27–32. 5:54–55, Fig. 2. “Card reader 230 may be configured to read the first digital signal that includes the account information of card 130.” *Id.* at 10:6–7. [T]he account information

may include at least one of an account number, a card expiration date, etc.”  
*Id.* at 5:55–58; 10:7–10.

Cho also discloses that its card device 110, as shown in Figure 10, may include card payment executor 1030 configured to convert a first analog signal into a first digital signal “that includes the account information by using any well-known analog-digital converting scheme” in which “the first digital signal is encrypted [and] card payment executor 1030 [is] configured to decrypt the encrypted first digital signal.” *Id.* at 2:39–41, 10:46–48, 11:35–40, Fig. 10. Card payment 1030 may also execute a card payment based on the account information. *Id.* at 11:40–44.

## 2. *Overview of Aaron – Exhibit 1006*

Aaron is titled “HANDLING TRANSACTION AND TRIP DATA” and was published on July 18, 2013, from U.S. Patent Application No. 13/353,133, filed Jan. 18, 2012. Ex. 1006, codes (21), (22), (43), (54). Aaron “relates to mobile card processing using multiple wireless devices, to acquisition of card information to enhance user experience, and to secure communications between devices.” *Id.* ¶ 1. Aaron discloses that “[a] customer can conduct a point-of-sale electronic payment transaction with a merchant without giving the merchant a card” by swiping a card on a mobile device that is wirelessly connected to other devices, such as a smart phone, to enable the customer to pay at physical locations. *Id.* ¶¶ 9, 58.

“Before a transaction between the user and the merchant can be performed using the wireless payment system 702, the merchant must create a merchant account with the payment service system 708.” Ex. 1006 ¶ 71. This is performed by the merchant signing up using a mobile application or an online website and by using a device within the wireless payment

system 708 or another computing device such as a home computer. *Id.* “At some point prior to the transaction, one or more applications are downloaded to the devices within the wireless payment system 702, e.g., a merchant facing device and a customer facing device.” *Id.* The devices “may run the same application or customized applications to each device (e.g. a merchant application and a customer application).” *Id.* The applications can be downloaded through an application store. *Id.* Data associated with the merchant account is stored in a database at secure server 712. *Id.*

The customer facing device “can include or be attached a credit card reader” and the credit card reader “can be attached to an input, e.g., an audio jack,” of the customer facing device. *Id.* ¶ 59. In some implementations, “the customer facing device 122 receives the amount for a transaction from the merchant facing device 126, and receives card information from the card reader 720 when the customer swipes the card.” *Id.* ¶ 68, Fig. 7. After the customer facing device submits request for authorization of the transaction to a payment service system including a secure server, the secure server processes the transactions from the wireless payment system. *Id.* ¶¶ 68, 69. The secure server “handles secure information such as credit card numbers, debit card numbers, bank accounts, user accounts, user identifying information or other sensitive information.” *Id.* ¶ 69. The payment service system communicates electronically with a card payment network such as “Visa, Mastercard, and the like.” *Id.* ¶ 70.

### 3. *Overview of Carpenter – Exhibit 1008*

Carpenter is titled “AUTOMATIC PERSONALIZATION OF DOWNLOADABLE MOBILE APPS” and was published on May 16, 2013, from U.S. Patent Application No. 13/295,748, filed Nov. 14, 2011. Ex.

1008, codes (21), (22), (43), (54). Carpenter’s invention “greatly simplifies the process of downloading and personalizing a mobile app by employing a unique code or ‘User ID’ that associates the user with the mobile app.” *Id.* code (57). Figure 1, reproduced below, shows “a block diagram illustrating . . . an architecture . . . in which mobile apps can be downloaded to mobile devices and personalized automatically.” *Id.* ¶ 14.

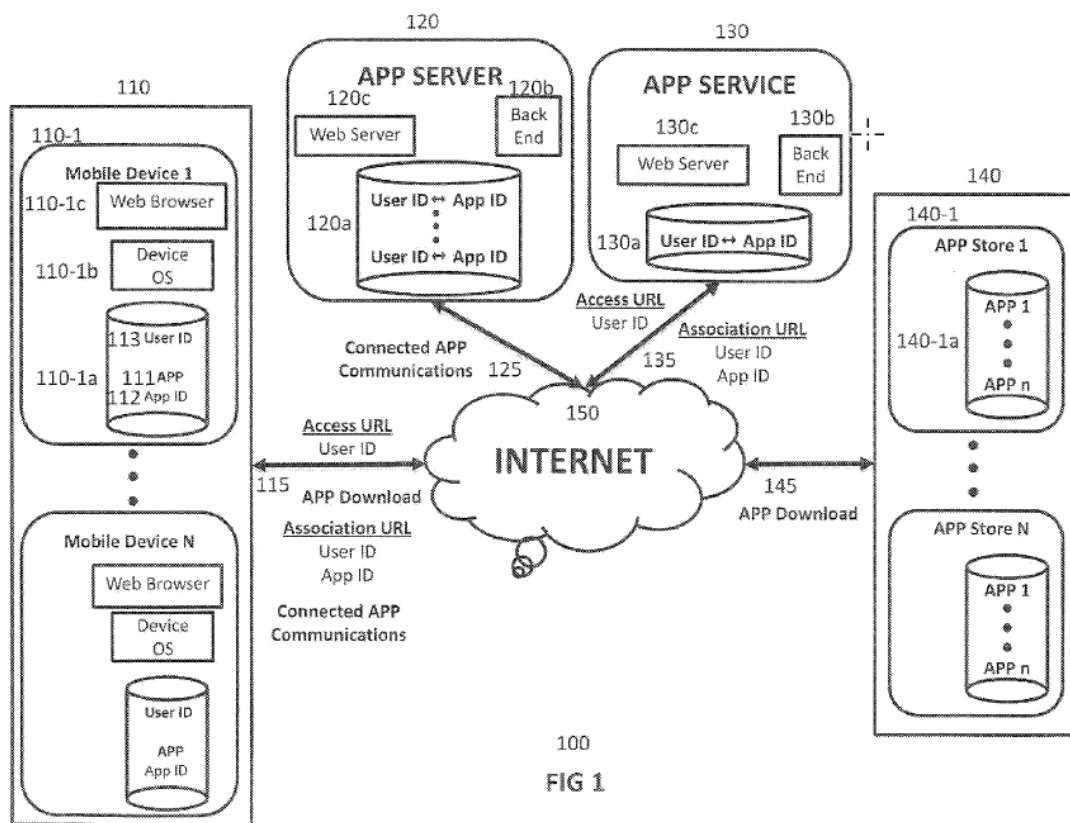


Figure 1 illustrates architecture 100 including client mobile devices 110, such as device 110-1, which communicate via Internet 150. *Id.* ¶ 18. Client mobile device 110-1 can be a smartphone “with a mobile operating system 110-1a capable of running mobile apps, such as app 111 (and web browser 110-1c) and storing data in database 110-1b.” *Id.* ¶ 19. The provider of mobile app 111 maintains App Server 120 “that communicates with

mobile app 111, which . . . is a ‘connected’ app” and “App Server 120 utilizes Web Server 120-c initially to create the user’s account and personalized profile.” *Id.* ¶ 22. Certain generic functions are common to many apps, which can be downloaded from App Store 140, which stores mobile app 111 in database 140-1a. *Id.* ¶¶ 23, 26.

H. GROUND 1 – ALLEGED OBVIOUSNESS OVER CHO, AARON, AND CARPENTER

1. *Petitioner’s Position*

Petitioner challenges independent claim 1 as unpatentable under 35 U.S.C. § 103 over Cho, Aaron, and Carpenter. Pet. 34–58. Petitioner contends that Cho “renders obvious” limitations [1.0] through [1.1.3] and [1.3.1], the combination of Cho, Aaron, and Carpenter “renders obvious” limitation [1.2], and Cho alone or in combination with Aaron “renders obvious” limitation [1.3.2]. *Id.* at 39–47.

Specifically, Petitioner contends that Cho “renders obvious” limitations [1.0]–[1.1.3] in disclosing card payment apparatus 120 that transmits to a client device analog signals that contain “account information which may be read from a card 130 by card payment apparatus 120.” Pet. 40–42 (bolding omitted) (citing Ex. 1005, 3:3–24), 4:23–32, Figs. 1, 2; Ex. 1003 ¶¶ 117–121. Petitioner asserts that Cho’s analog signal transmitted from card payment apparatus 120 “includes account information read from a card,” whereby “[b]y way of example, but not limitation, the account information may include at least one of an account number, a card expiration date, etc.” *Id.* at 46 (citing Ex. 1005, 3:20–31).

For limitation [1.2], Petitioner contends that the combination of Cho, Aaron, and Carpenter “renders obvious” the apparatus having coded

instructions stored in a medium of a first Internet-connected server and accessible by a user of the card reader. Pet. 47–50. In particular, Petitioner asserts that Cho describes client device 110 that, via software, may implement at least portions of a card payment system and that “includes the functionality of ‘a signal generator 1010, a transceiver 1020, and a card payment executor 1030’ (collectively, *coded instructions*).” *Id.* at 47 (citing Ex. 1005, 10:48–51, Fig. 10). Petitioner alleges that “Aaron confirms that such software would be an application downloaded to a device for use with a wireless payment system, such as contemplated by Cho” in explaining that a merchant and/or customer device can, before a transaction performed by a wireless payment system, download an application before a transaction. *Id.* at 48–49 (citing Ex. 1003 ¶ 135; Ex. 1006 ¶ 71). Further, Petitioner relies on Carpenter to “confirm[] that it was well-known at the priority date of the ’286 Patent that mobile phones utilized apps that were available from app stores (e.g., stored in a non-transitory medium of a first Internet-connected server) and downloaded onto users’ phones for use.” *Id.* at 50–51 (citing EX1003 ¶ 137; Ex. 1005, 10:58–61; Ex. 1006 ¶ 71; Ex. 1008, ¶ 23). Petitioner argues that a person of ordinary skill in the art would have been motivated to modify Cho’s client device with Aaron’s and Carpenter’s teachings and would have as a reasonable expectation of success in doing so. *Id.* at 34–39, 51–52.

Petitioner also contends that Cho “renders obvious” limitation [1.3.1] of coded instructions converting the received analog signal as digital data. Pet. 53–56. Petitioner assert that “Cho’s signal generator 1010, transceiver 1020, and card payment executor 1030 are collectively an instance of an application which operates as coded instructions,” and which “operate on

client device 110 (*the smart telephone*).” *Id.* at 53 (citing Pet. Section VI.A.6.a[1.2]; Ex. 1003 ¶¶ 133–141). Further, Petitioner asserts that “Cho describes the use of an audio jack socket 115 (*microphone port*),” and that “transceiver 1020 receives the analog signal from card payment apparatus 120 ‘via a microphone contact of audio jack 125.’” *Id.* at 54–55 (citing Pet. Section VI.A.6.a[1.1.3]; Ex. 1003 ¶¶ 128–132; Ex. 1005, 4:60–67).

For limitation [1.3.2], Petitioner contends that Cho alone or in combination with Aaron “renders obvious” establishing a direct data exchange to facilitate transaction using the transaction data. Pet. 56. Petitioner asserts that this limitation is met by “Cho execut[ing] a card payment . . . with a server communicatively coupled to the client device . . . using the account information.” *Id.* at 56–57 (citing Ex. 1003 ¶ 151; Ex/ 1005, 3:56–42). Alternatively, Petitioner argues that “Aaron confirms the relationship between a client device and a transaction server” in “explaining that a customer-facing device may receive card information through a card swipe on a connected card reader, and communicate with a payment service system to submit a request for authorization of the transaction.” *Id.* at 57 (citing Ex. 1006 ¶ 68; Ex. 1003 ¶ 152).

## 2. *Patent Owner’s Position*

Patent Owner contends that “Cho fails to teach or suggest ‘transaction data’ as claimed,” particularly as recited in limitation [1.3.1]. Prelim Resp. 21–23. Specifically, Patent Owner argues that “Petitioner can nowhere point to ‘transaction data’ in Cho, much less conversion of the audio signal ‘to the transaction data,’ instead referring vaguely only to ‘account information’ in Cho.” Prelim. Resp. 22. Patent Owner directs attention to the ’286 patent’s

disclosure of “‘transaction data (b1-Bn)’ [that] is involved in the generation and matching of hash codes.” *Id.* (citing Ex. 1001, 11:38–50, Fig. 11).

### 3. *Analysis*

Petitioner provides a conclusion without an explanation. Outside of stating that Cho describes account information and equating that with the claimed transaction information, Petitioner provides no further explanation how Cho’s account information meets the claimed transaction data. As Patent Owner argues, “Petitioner can nowhere point to ‘transaction data’ in Cho, much less conversion of the audio signal ‘to the transaction data,’ instead referring vaguely only to ‘account information’ in Cho.” Prelim. Resp. 22.

The ’286 patent distinguishes between account information and transaction data. The ’286 patent describes Figure 11, reproduced above in Section (II)(C), as illustrating user authentication using a CVV code whereby financial institutions deploy smart cards having an embedded token that includes token parameters of N (ID number that “includes the ID of the card issuing entity and enables the bank to route the transaction along with the CVV number (3-digit number) using existing bank protocols”), S (secret seed), Ci (current session key), and Ci+1 (new session key). Ex. 1001, 10:14–28, 12:14–24. A server, such as server 802, stores known account parameters of the client account 1002, i.e., N (ID number), PW (Password), S (Secret Seed), Pc (the client PIN code), and Co (last session key used by the client). *Id.* at 10:30–34; 11:62–64, 12:28–31. After entering the PIN code (Pc), the user “may perform a series of banking transactions by submitting transaction data B1-Bn. For each transaction, a new hash code (HC) is generated by applet 1205 on the client PC,” with the final hash code

(HC) being a CVV “based on the session key, transaction data (b1-Bn) for the instant transaction, and the Pc.” *Id.* at 12:34–41. The final hash code (HC) is then sent to the server for verification of each transaction. *Id.* at 12:41–42. The server compares its own generated hash to the received final hash, and if they are identical, the transaction is authenticated. *Id.* at 12:43–46.

Thus, the ’286 patent differentiates between account information — having an ID number of the bank/financial institution account, user password, secret seed, and client PIN code — and transaction data B1–Bn of an online transaction that is used to generate a new hash code and a final hash code. As Petitioner points out, Cho provides that “account information may include at least one of an account number, a card expiration date, etc.” Pet. 46; Ex. 1003, 3:25–26; 5:56–58; 10:8–10. However, we do not see and Petitioner does not explain where or how Cho provides for account data to include transaction data as differentiated in the ’286 patent from account information that comprises account ID number, PIN code, and password.

To the extent Petitioner contends that Cho’s account information, though not explicitly providing for “transaction data,” “renders obvious” the claimed transaction data, Petitioner has not explained such a modification of Cho’s account information that would be necessary to arrive at the ’286 patent’s transaction data. Nor has Petitioner provided articulated reasoning with rational underpinning. *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed.2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”) (cited with approval in *KSR*, 550 U.S. at 418).

Similarly, Petitioner does not explain how skilled artisans would have used Aaron to modify Cho's system to meet the claimed transaction data. Rather, Petitioner relies on Aaron for teaching facilitating transactions. Pet. 57. Petitioner asserts that "Aaron explains what information is sent in transactions: 'credit card numbers, debit card numbers, bank accounts, user accounts, user identifying information or other sensitive information.'" *Id.* at 35 (citing Ex. 1006 ¶ 69). Yet, Petitioner does not explain how Aaron's customer facing device that communicates with the payment service system 708 to submit a request for authorization of a transaction, the information being credit and debit card numbers, bank and user account information, and other identifying or sensitive information, would have been combined with Cho to render obvious accepting, providing, and converting transaction data—differentiated from account data—and facilitating transactions using that transaction data. Indeed, Petitioner's contentions do not mention Aaron for limitation [1.1.1] (the initial recitation of transaction data) or for limitation [1.3.1] (where an audio signal is converted to transaction data). Pet. 40–43, 53–56.

After considering the parties' arguments and evidence, we determine that Petitioner has not demonstrated a reasonable likelihood of establishing obviousness of independent claim 1 over Cho, Aaron, and Carpenter to support institution of Ground 1.

#### 4. *Summary of Ground 1*

For the foregoing reasons, Petitioner has not demonstrated a reasonable likelihood of establishing a reasonable likelihood of establishing obviousness of claim 1 based on Cho, Aaron, and Carpenter.

I. GROUND 2 – ALLEGED OBVIOUSNESS OVER CHO, AARON, CARPENTER, AND DE GEER

Petitioner challenges dependent claim 2 as unpatentable under 35 U.S.C. § 103 over Cho, Aaron, Carpenter, de Geer. Pet. 59–64.

This claim depends from independent claim 1 and includes additional limitations directed “the coded instructions, when executed on a processor in the smart telephone, retrieve a card verification code (CVV), and use the CVV in purchases or transactions.” Ex. 1001, 16:39–42. Petitioner relies on de Greer for teaching this additional limitation.

Because Petitioner does not rely on de Greer to cure the deficiencies of claim 1 regarding the ’286 patent’s transaction data, Petitioner has not demonstrated a reasonable likelihood of establishing a reasonable likelihood of establishing obviousness of claim 1 based on Cho, Aaron, Carpenter, and de Greer.

J. GROUND 3 – ALLEGED OBVIOUSNESS OVER CHO AND AARON

Petitioner challenges independent claim 3 as unpatentable under 35 U.S.C. § 103 over Cho and Aaron. Pet. 64–74.

Independent claim 3 recites:

[[3.0]] A method comprising:

[[3.1.1]] accepting transaction data from a transaction card at an input interface of a card reader having an output pin as a part of the card reader,

[[3.1.2]] the output pin directly connecting the card reader in a microphone port of a smart telephone;

[[3.2]] receiving the transaction data in the smart telephone as an analog variable voltage audio signal from the micro phone port of the smart telephone;

[[3.3]] converting the analog variable voltage audio signal received at the microphone port to the transaction data as digital data; [and]

[[3.4]] establishing direct data exchange with an Internet-connected server providing services to a financial institution or an on-line merchant by executing coded instructions on a processor in the smart telephone.

Ex. 1001, 16:44–58.

Independent claim 3’s steps are substantially similar to the functions recited in independent claim 1. *See* Ex. 1001, 16: 17–37, 16:43–61.

However, claim 3 does not recite claim 1’s limitation [1.2] of coded instructions stored in a medium and accessible by a user of the card reader.

Ex. 1001, 16:43–61.

Petitioner contends that “[c]laim 3 is a method claim rendered obvious for the same reasons apparatus claim 1,” except that Carpenter does not apply as it was argued only regarding limitation [1.2]. Pet. 64–65. Patent Owner argues claim 3 with claim 1. Prelim Resp. 21–23.

Thus, for the reasons discussed in Section III(H)(3) regarding claim 1, Petitioner has not demonstrated a reasonable likelihood of establishing a reasonable likelihood of establishing obviousness of claim 3 based on Cho and Aaron.

K. GROUND 4 – ALLEGED OBVIOUSNESS OVER CHO, AARON, AND DE GEER

Petitioner challenges dependent claim 4 as unpatentable under 35 U.S.C. § 103 over Cho, Aaron, and de Geer. Pet. 74–78.

This claim depends from independent claim 3 and includes additional limitations directed “the coded instructions, when executed on a processor in the smart telephone, retrieve a card verification code (CVV) from the

transaction data received on the microphone port, and use the CVV in purchases or transactions.” Ex. 1001, 16:62–61. Petitioner relies on de Greer for teaching this additional limitation.

Because Petitioner does not rely on de Greer to cure the deficiencies of claim 3 regarding the ’286 patent’s transaction data, Petitioner has not demonstrated a reasonable likelihood of establishing a reasonable likelihood of establishing obviousness of claim 4 based on Cho, Aaron, and de Greer.

#### IV. CONCLUSION

Because we determine that the information presented in the record does not establish there is a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim of the ’286 patent, we do not institute an *inter partes* review.

#### V. ORDER

Upon consideration of the record before us, it is:

ORDERED that the Petition is *denied* as to all challenged claims of the ’286 patent and no trial is instituted.

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