

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ASKELADDEN LLC,
Petitioner,

v.

VERIFY SMART CORP.,
Patent Owner.

Case IPR2017-00726
Patent 8,285,648 B2

Before CARL M. DeFRANCO, FRANCES L. IPPOLITO, and
MELISSA A. HAAPALA, *Administrative Patent Judges*.

HAAPALA, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C § 318(a) and 37 C.F.R. § 42.73

Askeladen LLC (“Petitioner”) filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–19 of U.S. Patent No. 8,285,648 B2 (“the ’648 patent”). Paper 1 (“Pet.”). Applying the standard set forth in 35 U.S.C. § 314(a), we granted Petitioner’s request and instituted an *inter partes* review of all challenged claims. Paper 6 (“Dec.”).

During the trial, Patent Owner timely filed a Response (Paper 28, “PO Resp.”) (sealed)¹, to which Petitioner timely filed a Reply (Paper 48, “Reply”). An oral hearing was held on April 24, 2018, and a copy of the transcript was entered into the record. Paper 63 (“Tr.”).

Additionally, Patent Owner filed a Motion to Amend. Paper 29. In light of the Board’s subsequently issued “Guidance on Motions to Amend in view of Aqua Products,” we granted Patent Owner authorization to submit a revised motion to amend. Ex. 3006. Pursuant to our authorization, Patent Owner submitted a Revised Motion to Amend (Paper 36, “Mot.”), to which Petitioner filed an Opposition (Paper 49, “Opp.”). Patent Owner filed a Reply in support of its Motion to Amend (Paper 51, “PO Reply”), and Petitioner filed a Sur-Reply supporting its Opposition (Paper 52, “Sur-Reply”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the claims on which we instituted trial. Based on the record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–19 of the ’648 patent are unpatentable. For the

¹ A redacted public version of Patent Owner’s Response is entered at Paper 32.

reasons discussed below, Patent Owner's Revised Motion to Amend is *denied*.

I. BACKGROUND

A. *The '648 Patent (Ex. 1001)*

The '648 patent describes systems and methods for verifying the identity of persons initiating electronic transactions. Ex. 1001, 1:8–9. A user and the user's communication device are pre-enrolled in a verification program, along with one or more of the user's accounts. *Id.* at 4:5–9. The information is stored in a verifier-database, which flags the accounts subject to identity verification and transaction authorization. *See id.* at 4:14–19, 29–32. The user's record in the verifier-database also includes a bona fide secure identifier for the user and the user access number of the user's communication device. *Id.* at 4:27–29. When the user attempts to access a flagged account, the verifier sends an identity verification request to the user's communication device to verify the transaction. *See id.* at 4:34–61.

Figure 2 of the '648 patent is reproduced below:

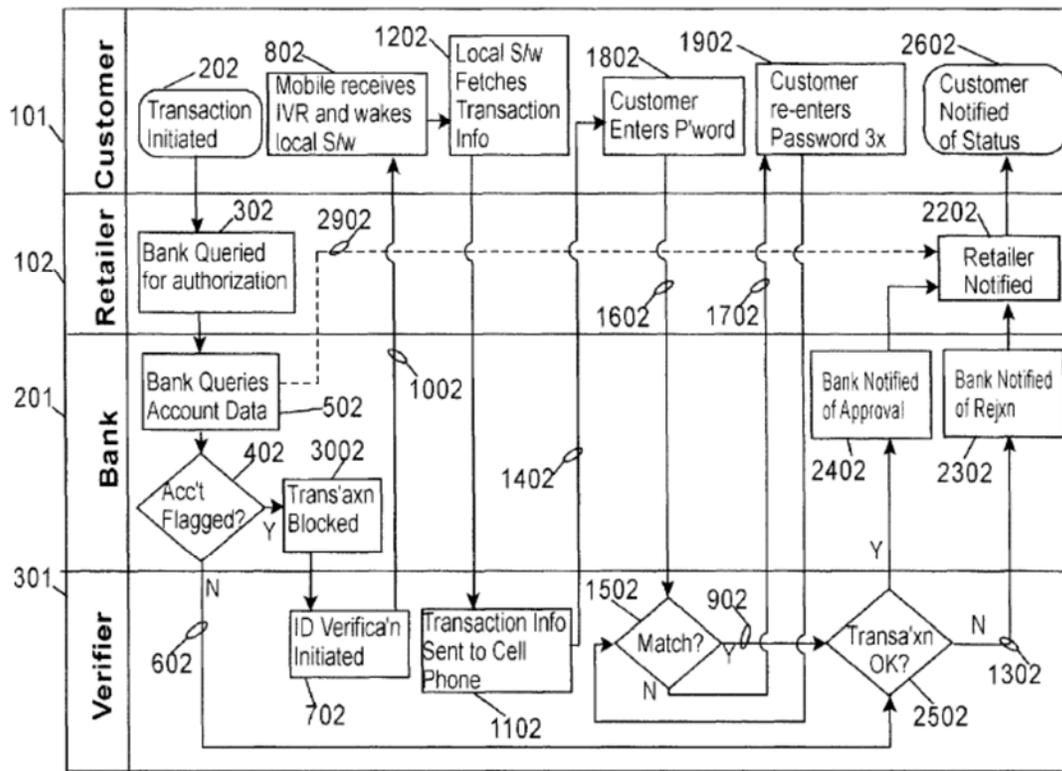


Fig 2

Figure 2 illustrates a sequence of steps by which customer 101 uses the account pre-enrolled with verifier 301 as part of a transaction to purchase goods/services from retailer 102. *Id.* at 7:61–65. Customer 101 initiates electronic transaction (step 202) by presenting her card to retailer 102. *Id.* at 7:66–67. Retailer 102 queries bank 201 for authorization (step 302); then, bank 201 queries the account information (step 502) to verify if there are sufficient funds for the transaction and also determines whether the customer’s account is flagged to require verification (step 402). *Id.* at 8:1–9.

If the account is flagged, the transaction is blocked in step 3002 pending verification of the customer’s identity. *Id.* at 8:13–16. Bank 201 then sends a message to verifier 301 to initiate the identity verification process in step 702. *Id.* at 8:17–18. Verifier 301 retrieves the user access number and opens communications link 1002 with the mobile phone of the

customer. *Id.* at 8:18–21. If the customer’s phone is answered, the transaction information is sent to the user’s cell phone in step 1102, along with an identity verification request (IVR). *Id.* at 8:33–38. Customer 101 enters a putative password into the I/O device of the mobile phone in step 1802, which is sent to verifier 301 to compare the putative password to the bona fide identifier to determine if they match (step 1502). *Id.* at 8:51–57. If they match, “identity verified signal” 902 is generated and the transaction is allowed to proceed. *Id.* at 9:5–7. Otherwise, the user may be given a pre-determined number of times to retry, and after a pre-set number of failed attempts, the transaction is terminated and the bank is notified of the rejection. *Id.* at 9:59–61. Figure 2 includes additional steps not described.

The ’648 patent further describes optional embodiments in which the verifier issues its own proxy transaction card to the user. *Id.* at 14:27–29. The proxy transaction card replaces one or more of the user’s credit cards and is used by the user to authorize the verifier to access one or more of the user’s accounts. *Id.* at 14:29–31. The user can present the proxy transaction card to a retailer and the verifier will initiate an identity verification process similar to that described previously. *See id.* at 15:16–40. During the process of identity verification, if the proxy account is associated with more than one account, the user can indicate the account to be used for the transaction. *See id.* at 15:6–15, 15:41–50. Once the transaction is verified, the verifier then acts as the user’s proxy to open a communication link to the appropriate credit provider to authorize the transaction. *Id.* at 15:51–53.

B. Illustrative Claim

Claims 1, 2, and 5 are independent. Claim 1 is illustrative of the subject matter at issue:

1. A user identity verification method for verifying the identity of a user by a verifier in the course of an electronic transaction, said user identity verification method comprising the steps of:

(a) pre-enrolling the user, comprising the steps of:

(a1) assigning to the user a bona fide secure identifier; and,

(a2) storing the bona fide secure identifier in a database that is accessible to the verifier;

(b) pre-enrolling a user communications device, wherein pre-enrolling the user communications device comprises the steps of:

(b1) obtaining a user access number for the user communications device, wherein the user access number can be used to open a communications link with the user communications device; and,

(b2) storing the user access number in a database that is accessible to the verifier;

(c) retrieving the user access number stored at Step (b2);

(d) opening a communications link between the verifier and the user communications device by using the user access number retrieved at Step (c);

(e) sending an identity verification request (IVR) from the verifier to the user through the communications link opened at Step (d);

(f) inputting by the user a putative secure identifier;

(g) sending through the communications link opened at Step (d) a response to the IVR of Step (e);

(h) retrieving the bona fide secure identifier stored at Step (a2);

(i) comparing the putative secure identifier input at Step (f) with the bona fide secure identifier retrieved at Step (h); and,

(j) allowing the transaction to proceed only if the comparison of Step (i) results in a match between the putative secure identifier and the bona fide secure identifier.

C. Instituted Grounds of Unpatentability

Petitioner relies on the following references:

Law	US 2005/0184145 A1	Aug. 25, 2005	Ex. 1005
Dua	US 2006-0165060 A1	July 27, 2006	Ex. 1006
Salveson	US 6,886,741 B1	May 3, 2005	Ex. 1007

We instituted trial under 35 U.S.C. § 103(a) based on the following combinations of references. Dec. 14.

References	Claim(s)
Law and Dua	1–15, 19
Law, Dua, and Salveson	16–18

In support of its contentions, Petitioner submitted declarations by its witness, Mr. Ivan Zatkovich. Exs. 1002, 1016. Petitioner’s expert was cross-examined during the trial, and transcripts of the depositions are in the record. Exs. 2042, 2047. Additionally, Patent Owner filed a Motion for Observations on the Second Deposition of Mr. Zatkovich, and Petitioner filed a response. Papers 56, 58.

D. Related Proceedings

Petitioner and Patent Owner identify a prior covered business method proceeding filed by Bank of America as related to this proceeding (CBM2015-00173) (dismissed before institution). Pet. 3–4; Paper 4, 1. Petitioner additionally identifies a number of district court litigation matters asserted to be currently pending, and a prior *inter partes* review filed by

Unified Patents (IPR2016-00836) (dismissed before institution). Pet. 3; *see also* Paper 5 (Petitioner’s Updated Mandatory Notice).

II. ANALYSIS

A. *Legal Principles*

A claim is unpatentable under § 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 non-obviousness, i.e., secondary considerations such as commercial success, long felt but unsolved needs, and failure of others.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). The obviousness inquiry further requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)).

² Patent Owner did not present arguments or evidence regarding objective indicia of non-obviousness in its Response.

B. Level of Ordinary Skill in the Art

Petitioner asserts a person of ordinary skill in the art is reflected by the prior art of record. Pet. 10. Petitioner further asserts that, to the extent necessary to define further, a person of ordinary skill in the art would have a bachelor's degree in computer science or a related study and two years of experience with electronic transactions and user authentication methods or the equivalent. *Id.* Patent Owner does not contest the level of skill in the art advocated by Petitioner, but asserts it must be accepted as true. PO Resp. 23; *see also* Tr. 50 (stating that Patent Owner does not have an alternate definition proposed).

We agree with Petitioner that the cited prior art is representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Additionally, we accept the further level of skill advocated by Petitioner as it is uncontested and consistent with the prior art.

C. Claim Construction

In an *inter partes* review, claims of an unexpired patent are interpreted using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). In our Institution Decision, we did not find it necessary to construe any terms, and accorded them their ordinary and customary meaning. Dec. 6–7.

Dependent claim 19 recites “a device identifier.” Petitioner asserts we should construe this term as “device identification information that can be used to identify a particular device, including alphanumeric representations such as CPU serial numbers, device keys, certificates, SIM numbers, IMEI

numbers, or phone numbers.” Pet. 9–10 (citing Ex. 1001, 7:6–13); Reply 18–19. Patent Owner does not offer an explicit construction for this term, but argues Law does not disclose a device identifier. *See* PO Resp. 54–58.

On the complete record, we construe “device identifier” to be “device identification information that can be used to identify a particular device.” This is consistent with the specification, which states the verifier can acquire from the mobile phone “device identification information that can be used to identify that particular phone.” *See* Ex. 1001, 7:8–9. We determine it is not necessary to include the specific examples recited in Petitioner’s proposed construction. Other than the serial number, the specific examples do not appear in the cited portions of the ’648 patent. *See id.* at 7:6–13. Moreover, during the oral hearing, Petitioner agreed the term could be properly construed without the examples. Tr. 15.

We determine that we need not explicitly construe any other terms to resolve the issues before us. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”).

D. Obviousness Over Law and Dua

Petitioner challenges claims 1–15 and 19 as obvious under 35 U.S.C. § 103(a) over Law and Dua. Pet. 10–62.

1. Scope and Content of Law

Law describes a secure wireless authorization system that allows a user with a wireless device to authorize a transaction request initiated by a third party entity. Ex. 1005 ¶ 20. For example, the third party entity can be an online merchant requesting authorization of a credit card transaction from

an issuing bank. *Id.* ¶ 36. The user can use the wireless device to authorize the third party request in real-time. *Id.* ¶ 47. An authorization server receives an authorization request from the third party and sends an authorization request to the user's wireless device. *Id.* ¶¶ 48–49. Upon receipt of the request, the wireless device notifies the user and automatically displays the request for a user (e.g., by displaying a message similar to “company X requests action Y for an amount of Z, would you like to proceed?”). *Id.* ¶ 49. The user inputs the response through the wireless device and provides a personal identification number (PIN) or personal digital signature. *Id.* The authorization server verifies the security credentials of the user and the wireless device. *Id.* ¶ 50. If the correct security credentials are provided, the user's instructions will be executed and an appropriate response will be sent back to the third party to complete the transaction. *Id.*

2. *Scope and Content of Dua*

Dua describes methods and systems for conducting financial and other transactions using a wireless device. Ex. 1006, Abstract. Electronic credentials may be issued to a wireless device of a user, such as an existing bank customer that has a credit card or a user that is applying for a credit card for the first time and only wishes to request the credential on his or her mobile phone. *Id.* ¶¶ 55–56. As part of the enrollment process, a PIN may be generated and mailed to the customer. *Id.* ¶¶ 58, 180. The user holding the credential may then use the handheld device to conduct transactions. *Id.* at Abstract.

For example, a wireless user may have an electronic MasterCard credit card stored in the wallet application that is setup for PIN validation.

Id. ¶ 417. The user can select the electronic card for use in a grocery store.
Id. A flag in the account record may signal to the credit card management system that an authorization approval cannot be sent back to the retailer until an Over-the-Air (OTA) PIN verification request is completed by the user.
Id. Upon receipt of a PIN verification request, the user may use the wallet application to enter his PIN in order to authorize the transaction. *Id.* ¶ 410. The card management system validates the PIN to verify that it matches the information in the account record and sends an approval back to the point-of-sale device. *Id.* ¶ 411.

3. Claim 1

Petitioner contends the combination of Law and Dua teaches the limitations recited in independent claim 1. Pet. 16–19, 25–34. In support of its arguments, Petitioner relies on the testimony of Mr. Zatkovich. *See id.* (citing Ex. 1002).

- a. *“A user identity verification method for verifying the identity of a user by a verifier in the course of an electronic transaction, said user identity verification method comprising the steps of”:*

Petitioner asserts Law provides a user identity verification method (“real time authorization protocol”) for verifying the identity of a user by a verifier (“issuing bank”) in the course of an electronic transaction. Pet. 25–26. We agree with Petitioner’s analysis that Law teaches this limitation through its description of an authorization server of an issuing bank sending an authorization request to a user. *See* Ex. 1005 ¶¶ 23, 36. Patent Owner has not raised arguments against this limitation in its Patent Owner

Response; therefore, any such arguments are waived. *See Novartis AG v. Torrent Pharm. Ltd.*, 853 F.3d 1316, 1330 (Fed. Cir. 2017); *In re Nuvasive*, 842 F.3d 1376, 1381 (Fed. Cir. 2016).³

- b. “(a) *pre-enrolling the user, comprising the steps of*”
“*(a1) assigning a bona fide secure identifier to the user;*”
“*(a2) storing the bona fide secure identifier in a database that is accessible to the verifier;*”

Petitioner asserts Law discloses a database linked to an authorization server to retain user information and to verify a user by drawing upon and verifying already stored user information. Pet. 26–27. Petitioner contends Law does not explicitly disclose every detail necessary to implement the system because a person of ordinary skill in the art would understand that certain elements or steps must be included in order to construct a working system. Pet. 16; Reply 4. In particular, Petitioner asserts a person of ordinary skill would understand that, absent the recited pre-enrollment steps, it would not be possible for Law to perform the disclosed comparison at the time of verification. Pet. 17. Petitioner asserts that in order for Law’s verification method to function, a user would have to be assigned a secure identifier (e.g., a PIN or password) and the secure identifier would have to be stored in a database that is accessible to the verifier. *Id.* at 27–28; *see also id.* at 17–18. Petitioner asserts that in view of the teachings of Dua, which explicitly disclose pre-enrolling a user in an authentication system, it would have been obvious to a person of ordinary skill to pre-enroll a user in the system of Law. *See id.* at 17–18, 26–28; *see also* Tr. 56 (Dua is relied

³ As in *Nuvasive*, the Scheduling Order in this proceeding cautioned Patent Owner that “any arguments for patentability not raised in the response will be deemed waived.” Paper 7, 6.

upon to reflect knowledge of one of skill in the art with respect to pre-enrollment). Petitioner further asserts it would have been obvious to a person of ordinary skill in the art to implement the system disclosed in Law by using a pre-registered PIN to provide an effective implementation. *Id.* at 18–19. Petitioner’s assertions are supported by the testimony of Mr. Zatkovich. *See* Ex. 1002 ¶¶ 55–60; Ex. 1016 ¶¶ 110–111, 119.

Patent Owner acknowledges there are only a couple of ways for a PIN to get into the system. Tr. 40. Patent Owner concedes that someone of ordinary skill in the art would have known that Law necessarily would have needed PIN pre-enrollment. *See* Tr. 40–42.

We are persuaded by Petitioner’s analysis that one of ordinary skill would have understood the system of Law to require the user to be pre-enrolled in the system, including assigning to the user a bona fide secure identifier (PIN) and storing the bona fide secure identifier in a database accessible to the verifier. Law discloses a database linked to the authorization server to retain user information and that the authorization server verifies the security credential (PIN) of a user during the authorization process. Ex. 1005 ¶¶ 20, 63. We agree with Petitioner, and Patent Owner concedes, that Law necessarily would have had to pre-enroll the user by assigning the user a secure identifier and storing the identifier in the database accessible to the verifier. Moreover, Petitioner’s assertion that one of skill in the art would understand a working (effective) system to require pre-enrollment is supported by Dua, which explicitly discloses pre-enrolling a user in an authentication system by generating a PIN and mailing it to the user. *See* Ex. 1006 ¶¶ 58, 180.

c. *“(b) pre-enrolling a user communications device, wherein pre-enrolling the user communications device comprises the steps of”*

“(b1) obtaining a user access number for the user communications device, wherein the user access number can be used to open a communications link with the user communications device; and,”

“(b2) storing the user access number in a database that is accessible to the verifier;”

“(c) retrieving the user access number stored at Step (b2);”

Petitioner contends these limitations are disclosed by Law. Pet 29–31. Specifically, Petitioner asserts Law discloses pre-enrolling a user communications device (wireless device) through its description that the system must keep track of global unique identifier (GUID) of a wireless device, the GUIDs (user access number) can be pre-registered with the authorization server (verifier) and the authorization server includes a database 26 connected to the server 24. *Id.* at 29–30. Petitioner further asserts Law discloses retrieving (“look[ing] up”) the user access number (“GUID”) stored at Step (b2). *Id.* at 30–31.

We are persuaded by Petitioner’s analysis that Law discloses pre-enrolling a wireless device (user communication device) by obtaining a GUID (user access number) for the wireless communication device when the user registers its GUID with the authorization server and that the GUID can be used to open a communications link with the wireless device. *See* Ex. 1005 ¶¶ 39, 60, 62, 65. We are also persuaded Law discloses the GUID is stored in a database 26, operatively connected to the authorization server 24.

See id. at Fig. 1, ¶ 39. Further, we agree with Petitioner that Law discloses looking up (retrieving) the stored user access number. *See id.* at ¶ 62. We note Patent Owner does not present arguments for these limitations.

d. “(d) opening a communications link between the verifier and the user communication device by using the user access number retrieved at Step (c)”

“(e) sending an identity verification request (IVR) from the verifier to the user through the communications link opened at Step (e);”

Petitioner asserts Law discloses opening a communications link (“secure channel”) between the verifier (“issuing bank”) and the user communications device (“the wireless device”) by using the user access number (“GUID”) retrieved at Step (c). Pet. 31. Petitioner further asserts Law discloses sending an IVR (“an authorization request”) from the verifier (“the issuing bank”) to the user (“the user’s wireless device”) through the communications link (“secure channel”) opened at Step (d). *Id.*

Patent Owner contends the claim requires two separate steps and that the first step (“opening a communication link”) must be performed before the second step (“sending an . . . IVR” communicated over the aforementioned opened communication link). PO Resp. 41. Patent Owner argues Law employs a traditional SMS (short message service) network with security vulnerabilities and shortcomings. *See id.* at 41–44. Patent Owner argues that SMS is a “store and forward” communication architecture, in which the bank of Law (analogous to the verifier) sends a standard text message to an SMSC (short message service center), which is part of the wireless telephone operator and would not be controlled by the bank. *Id.* at 44. Patent Owner asserts that at the time the bank system sends the

message, there is no communications link that is open with the user communications device and at the time the message is sent from the bank computer to the user communications device, there is no required open communications link between the SMSC and the bank computer. *Id.* at 48. Patent Owner argues that in the cited prior art, the attempt to open a communications link and the sending of a message by a bank causes a network host to create a communication channel, and forward the message from the bank to a recipient, and, therefore, from the perspective of the bank the opening of the communications link and sending of the message are done in one step. *Id.* at 50 (citing Ex. 2042, 71:8–10). Patent Owner further argues that the claim requires a single entity (a verifier) to both open the communications link and send the verification message to the user, and asserts that in the prior art, two different entities (authorization server and a wireless gateway) respectively perform these two distinct tasks. *Id.* at 50–51 (citing Ex. 1005 ¶ 40).

Petitioner replies that, as confirmed by Mr. Zatkovich, Law’s system establishes an “encrypted secure channel” between the “authorization server” and the user’s wireless device and that this channel (communications link) is used by the server to send an “authorization request” (IVR) to a mobile device. Reply 10 (citing Ex. 1002, 40–42); *see also id.* at 14 (asserting Mr. Zatkovich relied on Law’s “encrypted secure channel” as the claimed “communications link”). Petitioner asserts Law teaches proprietary software used to send/receive messages to/from the authorization server, which must handle various security schemes and communication channels, and that this software establishes an encrypted secure channel between the authorization server and the wireless device. *Id.* at 13, 15. Petitioner asserts

the encrypted secure channel is used to send and receive messages. *Id.* at 15. Petitioner further asserts Law expressly teaches performing both steps separately through its illustration and description in Figure 6 of the authorization server connecting to the wireless device (block 94) and sending an authorization request to the user's wireless device (block 96). *Id.* at 15–16.

We are persuaded Petitioner establishes, by a preponderance of the evidence, that Law discloses Steps (d) and (e), as recited in claim 1. *See* Pet. 31; Reply 10–16. In particular, we are persuaded Law discloses Step (d) through its description of connecting (opening), via an encrypted secure channel (communications link), the authorization server of the issuing bank (verifier) and the user's wireless device (user communication device) using the obtained GUID (user access number retrieved at Step (c)). *See* Ex. 1005 ¶ 62. We are further persuaded Law discloses Step (e) through its description of sending an authorization request (IVR) from the authorization server to the user's wireless device using the encrypted secure channel. *See id.* ¶ 49. We agree with Petitioner that Law discloses these steps are performed separately. *See id.* at Fig. 6 (blocks 94, 96), ¶ 62. Patent Owner's argument that the SMS employed by Law does not meet these limitations is unpersuasive because as noted by Petitioner, Mr. Zatkovich testifies that he is relying on Law's "secure channel" as the claimed "communications link" and not an SMS message in the abstract. Reply 14 (citing Ex. 2042, 55:6–16); Ex. 1016 ¶ 153; *see also* Pet. 31 (asserting "Law discloses opening a communications link ('secure channel')"). Moreover,

many of Patent Owner's arguments regarding the shortcomings of SMS are also unpersuasive because they are mere attorney argument and unsupported by evidence or testimony. *See* PO Resp. 41–51.

- e. “(f) inputting by the user a putative secure identifier;”
“(g) sending through the communications link opened at Step (d) a response to the IVR of Step (e);”

Petitioner asserts Law discloses Step (f). Pet. 31. We agree with Petitioner's analysis that Law's description of a user inputting a response to the authorization request by providing a PIN meets the limitation recited in Step (f). *See* Ex. 1005 ¶ 49. Patent Owner does not present an argument for this limitation.

Petitioner asserts Law discloses Step (g) through its description that the PIN, along with appropriate response parameters, are sent back to the authorization server through an encrypted secure channel. Pet. 31–32. Patent Owner argues that the SMS message in Law may be received by a cell phone on one communication channel and any response communicated on a different channel after the first one is interrupted and that the communication channel between the bank and the SMSC need not be persistent. *Id.* at 45–46 (citing Ex. 1005 ¶ 49).

We determine Petitioner establishes, by a preponderance of the evidence, that Law teaches this limitation. Law describes the PIN input by the user or digital signal (response) is sent back to the authorization server through an encrypted secure channel. *See* Ex. 1005 ¶ 49. Although Law also describes the secure channel *can* be independent from the secure channel that was used to notify the wireless device, Law does not require the secure channel to be independent from the same channel; i.e., the encrypted

secure channel used to send the response may be the same encrypted secure channel used to send the authorization request (communications link opened at Step (d)).

- f. “(h) retrieving the bona fide secure identifier stored at Step (a2); and”*
- “(i) comparing the putative secure identifier input at Step (f) with the bona fide secure identifier retrieved at Step (h);”*
- “(j) allowing the transaction to proceed only if the comparison of Step (i) results in a match between the putative secure identifier and the bona fide secure identifier”*

We have reviewed Petitioner’s analysis of these remaining limitations recited in claim 1 as set forth in its claim chart along with the supporting evidence. *See* Pet. 32–34. We are persuaded Petitioner sufficiently establishes Law discloses these limitations for the reasons set forth by Petitioner. *See id.* For example, we agree with Petitioner that Law teaches comparing the putative secure identifier (PIN) with the bona fide secure identifier (PIN previously stored in database retrieved at Step (h)) through its description that the authorization server verifies the received security credentials of the user. Pet. 32–33 (citing Ex. 1005 ¶¶ 49, 50). We note Patent Owner has not raised arguments against these limitations in its Patent Owner Response.

For the foregoing reasons, we conclude Petitioner has demonstrated, by a preponderance of the evidence, that claim 1 would have been obvious over Law and Dua.

4. Claims 2 and 5

Independent claim 2 recites a system with components that perform substantially the same functionality as a subset of limitations recited in the method of claim 1. Independent claim 5 is a method claim that recites limitations substantially similar to the limitations recited in independent claim 1. Petitioner sets forth a specific analysis of claim 2 in its claim chart that is substantially similar to the analysis of similar limitations appearing in claim 1, and provides additional analysis setting forth how Law discloses the recited components that perform the recited functions. *See* Pet. 34–46 (citing Ex. 1005, Figs. 1, 4, ¶¶ 20, 23, 36, 38–41, 49, 50, 63). For example, Petitioner asserts Law discloses a verifier-computer (“authorization server 245”) adapted to write data to and retrieve data (e.g., “account information”) from said verifier-database (“database 26”). *Id.* at 35–36 (citing Ex. 1005, Fig. 1, ¶¶ 38–39). As another example, Petitioner asserts a person of ordinary skill in the art would understand that Law’s wireless device 38 includes a user-computer coupled to the device’s input (e.g., keypad) and output (e.g., display) because Law discloses the wireless device 38 must be computationally capable of creating an encrypted secure connection and is typically a mobile cellular phone, such as a smart-phone. *Id.* at 39–40 (citing Ex. 1005 ¶¶ 41, 63). With respect to claim 5, Petitioner cites to the previous analysis of claim 1. *See id.* at 48–49. Patent Owner does not present separate arguments for claims 2 and 5, but instead argues these claims along with claim 1.⁴ *See* PO Resp. 23–51.

⁴ We note claim 2 does not recite functions corresponding to “pre-enrolling a user communications device” (Step (b)) or “opening a communications link” (Step (d)), and does not require that either the IVR or the response to the IVR

We have reviewed Petitioner’s analysis and supporting evidence. We determine Petitioner establishes, by a preponderance of the evidence, that Law and Dua teach each limitation set forth in claims 2 and 5 for the reasons set forth in its claim chart, which are similar to the reasons as those set forth above for claim 1. *See* Pet. 34–49.

5. *Claims 3–15*

Claim 3 depends from claim 2 and recites “wherein said user communications device is a personal communications device.” We agree with Petitioner that Law describes its wireless device (user communication device) is typically a mobile cellular phone (personal communications device). *See* Pet. 46; Ex. 1005 ¶ 41. Patent Owner does not present separate arguments for this claim.

Claim 4 depends from claim 2 and recites “a second verifier communications device (803) for transmitting a confirmation output to a bank.” Petitioner asserts Law discloses this limitation through its description that the credit card network 22 (second verifier communications device transmits communications to third party entity 10 (bank). Pet. 47 (citing Ex. 1005, Fig. 1, ¶ 36). Patent Owner does not present separate arguments for this claim. We find Petitioner establishes, by a preponderance of the evidence, that Law discloses the limitation recited in claim 4 for the reasons set forth by Petitioner. *See id.* at 47.

Claim 6 depends from claim 5 and recites “wherein the response received at Step (h) includes the putative secure identifier input at Step (g), and wherein Step (k) is performed by the verifier.” Petitioner asserts Law

be sent through a communications link as recited in claim 1. Thus, Patent Owner’s arguments for these limitations are not applicable to claim 2.

discloses these limitations through its description the PIN (putative secure identifier) is sent back to the authorization server and that upon receiving the request, the authorization server of the issuing bank (verifier) will verify the security credentials of the user and the wireless device. Pet. 50. Patent Owner does not present separate arguments for this claim. We agree with Petitioner's analysis and find Law discloses the limitations recited in claim 5. *See* Ex. 1005 ¶¶ 49–50.

Claim 7 depends from claim 5 and recites “(m) downloading the local software to the user communications device.” Claims 8–11 depend from claim 7. Claim 8 recites “wherein the IVR sent at Step (f) includes the bona fide secure identifier retrieved at Step (j), and wherein Step (k) is performed by the local software downloaded at Step (m), and wherein the response received at Step (h) includes the results of the comparison done at Step (k). Claim 9 recites “wherein the local software downloaded at Step (m) performs at least one of: (i) sending the response received at Step (h) and,(ii) Step (k).” Claim 10 recites

wherein the local software downloaded at Step (m) performs the steps of:

- (n) receiving the IVR sent at Step (f);
- (o) formatting the IVR for display; and
- (p) displaying the IVR formatted at Step (o) on an input/output (I/O) device of the user communications device.

Claim 11 recites “wherein the local software downloaded at Step (m) performs at least one of: (i) decrypting information received by the user communications device, and (ii) encrypting information sent by the user communications device.”

We have reviewed Petitioner’s analysis and supporting evidence and are persuaded Petitioner establishes the combination of Law and Dua discloses the limitations set forth in claim 7 and its dependent claims 8–11 for the reasons set forth by Petitioner. *See* Pet. 19–21, 50–57. For example, we agree with Petitioner that the combination of Law’s description of an application stored on a wireless device combined with Dua’s description of downloading software to handsets meets Step (m) recited in claim 7. *See id.* at 50–51; Ex. 1005 ¶¶ 41, 70; Ex. 1006 ¶ 199. Petitioner persuades us it would have been an obvious design choice to download software as taught by Dua because it was one of only three predominant methods for loading software onto a wireless device and downloading software is a convenient method. Pet. 19–20. We credit Mr. Zatkovich’s testimony, which is consistent with the disclosure in the references and further supports Petitioner’s assertions. *See* Ex. 1002 ¶¶ 62–64. Patent Owner does not contest that Dua discloses a downloaded application per claim 7. PO Resp 39–40. As another example, we agree with Petitioner that Law discloses the limitation set forth in claim 9 through its description that the application on the wireless device processes the request from the authorization server and that proprietary software on the wireless device is used to send/receive messages to/from the authorization server. *See* Pet. 63; Ex. 1005 ¶¶ 41, 70. Petitioner also provides sufficient rationale to combine Law and Dua in the manner proposed. *See* Pet. 19–21. Patent Owner does not present separate arguments for these claims.

Claim 12 depends from claim 5 and recites “wherein at least one of the IVR of Step (f) and the response received at Step (h) are encrypted when sent.” Petitioner asserts this limitation is disclosed by Law. Pet. 58. We are

persuaded that Law's description that the request will travel through an encrypted channel, and the response is sent back through an encrypted channel meets this limitation. *See* Ex. 1005 ¶ 49. We note Patent Owner does not separately argue this claim.

Claim 13 depends from claim 5 and recites

(q) sending a transaction authorization request to the user communications device;

(r) sending a transaction authorization request to the user communications device,

(s) allowing the transaction to proceed only if the response received at Step (r) is to authorize the transaction.

Petitioner asserts Law discloses a single message that performs the identity verification (as required by Claim 5) and the transaction authorization required by Claim 13. Pet. 58. Petitioner asserts Law disclose Steps (r) and (s) through its description that the user will input a response through the wireless device to provide instructions on whether to proceed with transactions and the specified instructions are executed by the authorization server. *Id.* at 59. We are persuaded by Petitioner's analysis and find Law discloses the limitations set forth in claim 13 for the reasons set forth by Petitioner. *See id.* at 58–59; Ex. 1005 ¶¶ 49, 50. Although we agree the claim does not require the identity verification request and the transaction verification request be sent as separate messages, we also agree with Petitioner that Dua discloses two discrete steps for these requests. Pet. 22–23; *see* Ex. 1006 ¶¶ 410, 411. Petitioner further provides sufficient reason to modify Law with Dua's teachings to provide the user with an additional

opportunity to confirm and approve the transaction. *Id.* at 23–24. Thus, we determine the Law-Dua combination also teaches the limitations set forth in claim 13. We note Patent Owner does not separately argue this claim.

Claim 14 depends from claim 13 and recites “(t) setting a flag in a database record, wherein the flag is associated with an account of the user and wherein the flag indicates whether or not at least one of Steps (q) through (s) are to be performed with respect to that account.” Claim 15 depends from claim 5 and sets forth limitations substantially similar to claim 14. We are persuaded by Petitioner’s analysis that Dua discloses the limitations set forth in claims 14 and 15 through its description that a flag in the credit card customer account signals to the credit card management system that an authorization approval cannot be sent back to the retailer until an over-the-air PIN verification is completed. Pet. 59–60; *see* Ex. 1006 ¶ 417. We find Petitioner provides sufficient reason to combine the teachings of Dua with Law through its assertion a flag is an obvious design choice and one of a limited number of solutions to the problem of indicating a transaction should be prevented from proceeding until it has been verified. *Id.* a 24–25. In reaching our determination, we credit the testimony of Mr. Zatkovich, which supports Petitioner’s assertions. *See* Ex. 1002 ¶ 75. Patent Owner does not present separate arguments for these claims.

6. Claim 19

Claim 19 depends from claim 5 and recites:

- (dd) storing a device identifier of the user communications device of Step (c) in a database that is accessible to the verifier;
- (ee) retrieving the device identifier stored at Step (dd);
- (ff) obtaining the device identifier stored at Step (dd); and

(gg) comparing the device identifier retrieved at Step (ee) with the device identifier obtained at Step (ff);

wherein the transaction is allowed to proceed only if the comparison of Step (gg) results in a match between the device identifier retrieved at Step (ee) and the device identifier obtained at Step (ff).

Petitioner asserts Law discloses step (dd) through its description the authorization server stores device keys and/or certificates used to create a secure connection with the wireless devices. *See* Pet. 61–62 (citing Ex. 1005 ¶ 39); Reply 17 (citing Pet. 62–63; Ex. 1005 ¶ 67); *see also* Tr. 15–16 (“Law which discloses that there are two alternative device identifiers which could be claim 19, specifically either device key or client certificate. Our position is that either one of those could meet the claim.”). In support of Petitioner’s assertion, Mr. Zatkovich testifies a person of skill in the art would have recognized that Law’s “device key” or “client certificate” is used to create a secure connection with the wireless device and must be associated with a particular “user communication device.” *See* Ex. 1016 ¶¶ 168–169 (citing Ex. 1005 ¶ 39); *see also* Ex. 2047, 221:18–222:11 (deposition testimony from Mr. Zatkovich in which he testifies a device key and certificates are associated with particular devices). Petitioner asserts that Law discloses the remaining limitations of Step 19 through its description that the authorization server verifies the security credentials of the user and the wireless device and that if the correct security credentials are provided, the instructions will be executed by the authorization server. Reply 20–21; *see also* Pet. 62–63. In support of Petitioner’s assertion, Mr. Zatkovich testifies that a person of ordinary skill in the art would have understood that verifying the separate security credentials of the wireless device requires retrieving

and comparing the stored value of these credentials (device identifier) to those retrieved from the user communications device. Ex. 1016 ¶ 171 (citing Ex. 1005 ¶ 50).

Patent Owner argues Law does not teach or suggest that its keys are unique for a single communications device. PO Resp. 55. Patent Owner further argues that the encryption keys are not persistent identifiers of the user communications device and that Law does not use the existence of the correct encryption key of the user communication device as a filter, at the authentication server, to block the transaction. *Id.* at 55–56.

Petitioner persuades us that Law discloses the limitations set forth in claim 19. We agree with Petitioner that both the device key and certificates disclosed by Law meet the “device identifier” limitation as we construe the term (“device identification information that can be used to identify a particular device”) through its description the wireless device is authenticated (identified) with a device key or certificate. Ex. 1005 ¶ 67. We disagree with Patent Owner that the key does not identify a particular device. Further, we are unpersuaded by Patent Owner’s argument that the encryption key is not a persistent identifier; rather, we agree with Petitioner that “device identifier” contains no temporal limitation, but must simply be able to verify the communication device during the course of a transaction. *See* Reply 20. Petitioner sufficiently establishes Law discloses the recitations of claim 19 through its description the keys/certificates are stored in a database accessible to the authorization server and the authorization server verifies the security credentials of the wireless device before allowing

the transaction to proceed. *See* Ex. 1005 ¶¶ 39, 50, 67. In reaching our determination, we credit the testimony of Mr. Zatkovich. *See* Ex. 1016 ¶¶ 168–171; Ex. 2047, 221:18–222:11.

We conclude Petitioner has demonstrated, by a preponderance of the evidence, that claim 19 would have been obvious over Law and Dua.

7. *Hindsight Arguments*

Patent Owner contends that Mr. Zatkovich testifies a person of ordinary skill in the art “was qualified to implement the invention, *starting with the claims*, and was not qualified to himself determine the content of those claims.” PO Resp. 24–36 (citing Ex. 2042, 129:19–136:3). Patent Owner asserts that the reason Mr. Zatkovich concludes the invention expressed in the claims of the ’648 Patent would have been obvious is because the person of ordinary skill started with the claims as a roadmap for implementation, which Patent Owner contends is a classic case of hindsight reconstruction. *Id.* at 37–38. Patent Owner argues the differences and selection of features and implementation details would not have been obvious because the person of ordinary skill would not have been motivated to make those changes as part of implementation absent the claims. *Id.* at 38.

We agree with Petitioner that Patent Owner’s arguments conflate two separate issues: (1) whether a person of ordinary skill in the art could implement a system based on the claims of the ’648 Patent; and (2) whether the claims would have been obvious to a person of ordinary skill in the art at the time the patent was filed. Reply 5. We disagree with Patent Owner’s characterization that Mr. Zatkovich relies on hindsight reconstruction to reach his conclusion the claims would have been obvious. Rather than

testifying that one of skill in the art would start with the claims as a roadmap in the obviousness analysis, Mr. Zatkovich testifies “one skilled in the art, having at their disposal *Law* and *Dua*, could very easily duplicate the invention described in the ’648 patent” and would easily come up “with the exact replication of the claims in the ’648 patent.” Ex. 2042, 135:15–136:3; *see also* Ex. 1016 ¶¶ 108–109. Moreover, as noted by Petitioner, Mr. Zatkovich provides testimony for combining the prior art in the manner claimed. Reply 4, 7 (citing Ex. 1002 ¶¶ 54–76, 83–89).

E. Obviousness Over Law, Dua, and Salveson

Petitioner challenges claims 16–18 as obvious under 35 U.S.C. § 103(a) over *Law*, *Dua*, and *Salveson*. Pet. 63–71.

Salveson describes an all-purpose consumer transaction system that allows a consumer to use one card (“universal card”) for typical transactions, such as purchases normally charged to credit cards. Ex. 1007, 3:31–36. When the cardholder uses the universal card to conduct a purchase transaction, the user is prompted for some type of verification (e.g., entry of a PIN). *See id.* at 2:9–16, 8:63–9:16. The user is also prompted for the account type and account identification to be used for the transaction. *See id.* at 2:17–21, 9:21–25.

Claims 16–18 depend, directly or indirectly, from claim 5. Claim 16 recites the method further comprises “(v) acquiring access information for an account of the user” and “(w) storing the account access information on a database that is accessible to the verifier.” Claim 17 depends from claim 16 and recites the method further comprises:

(x) issuing to the user a proxy transaction card containing data that can be used to authorize the verifier to access the account of Step (v);

(y) using the data contained on the proxy transaction card to authorize the verifier to access the account of Step (v);

(z) retrieving the account access information stored at Step (w); and

(aa) the verifier using the account access information retrieved at Step (v) upon authorization of Step (y),

wherein the transaction is made with respect to or debited to the account accessed at Step (aa).

Claim 18 depends from claim 17 and recites “(bb) displaying to the user at least one account the verifier is authorized to access” and “(cc) inputting by the user a choice as to which account displayed at Step (bb) the verifier is authorized to access.” Patent Owner does not present separate arguments for these claims.

We have reviewed the analysis of these claims set forth by Petitioner (Pet 68–71) and the supporting evidence and find it persuasive. For instance, we agree with Petitioner that the Law-Salveson combination discloses Steps (v) and (w) through Salveson’s description of an individual card database that includes a list of identification numbers and codes of vendors that serve the cardholder and Law’s description its database is accessible to the issuer bank (“verifier”). Pet. 68; *see* Ex. 1007, 6:25–43, Fig. 2; Ex. 1005 ¶¶ 39, 42, 45. As another example, we agree with Petitioner that Salveson discloses Steps (x) and (y) through its description of issuing to the user a universal card (“proxy transaction card”) and obtaining identification information from the universal card when the card is used at a point of sale terminal. Pet. 69–70; *see* Ex. 1007, 1:55–64, 9:3–20, Fig. 3. Petitioner further provides persuasive rationale that one of ordinary skill in the art would have had reason to combine the universal card of Salveson with the authentication schemes taught by Law and Dua to address the

problem of credit card fraud and to increase convenience. Pet. 67. We find the combination of Law, Dua, and Salveson teaches the limitations of claims 16–19 for the reasons set forth by Petitioner. *See* Pet. 68–71.

We conclude Petitioner has demonstrated, by a preponderance of the evidence, that claims 16–18 would have been obvious over the combination of Law, Dua, and Salveson.

III. MOTION FOR OBSERVATIONS

Pursuant to our authorization in the Scheduling Order (Paper 7, 5) Patent Owner filed a Motion for Observations on the Second Deposition of Mr. Zatkovich. Paper 56. Petitioner filed a Response to Patent Owner’s Motion. Paper 58. In its Response, Petitioner argues the Observations are improper and should be expunged because: (i) the Observations are not directed to Mr. Zatkovich’s reply testimony, but rather directed to his testimony in connection with Patent Owner’s Motion to Amend, which Petitioner asserts should have been addressed in the substantive paper filed after the second deposition was conducted; (ii) the Observations exceed the allowed page limit; and (iii) the Observations are not in the allowed format and improperly included attorney argument. Paper 58, 1–3.

Our Scheduling Order authorized the parties to submit a motion for cross-examination to provide the parties with a mechanism to draw the Board’s attention to relevant cross-examination testimony of *a reply witness because no further substantive paper is permitted after the reply*. Paper 7, 5 (emphasis added); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,768 (Aug. 14, 2012). We agree with Petitioner that a subset (but not all) of Patent Owner’s Observations are directed to Mr. Zatkovich’s testimony related to Patent Owner’s Motion to Amend and not to Mr. Zatkovich’s

reply testimony. *See e.g.*, Paper 56 (citing Ex. 2047, 128:3–132:15; 136:17–137:5; 139:16–22); *see also* Ex. 2047, 128:3–132:15 (Mr. Zatkovich’s testimony related to whether a “time out” is a broken communication link as set forth in amended claims 2, 25, and 31). Patent Owner’s Observations related to the Motion to Amend are outside the permitted scope of observations because they are not related to testimony of a reply witness and because Patent Owner was permitted to enter a substantive paper (PO Reply) to respond to the relevant cross-examination testimony. Accordingly, we decline to consider such observations.

The Scheduling Order further set forth that the observation must be a concise statement of the relevance of precisely identified testimony *to a precisely identified argument or portion of an exhibit*. Paper 7, 5 (emphasis added). The observations are not a place to raise new arguments, but rather identify the relevance of testimony to an identified argument that was made previously. We agree with Petitioner that portions of Patent Owner’s Observations improperly include unsupported attorney argument. *See e.g.*, Paper 58, 5. We decline to consider those arguments.

We also agree with Petitioner that Patent Owner’s Motion for Observations is 17 pages and, therefore, exceeds the permitted page limit of 15 pages. *See* 37 C.F.R. § 42.24(a)(v). Nonetheless, at this late stage of the proceeding, and in the interest of justice, we exercise our discretion to waive the page limit and decline to expunge the Observations for exceeding the page limit by two pages. *See* 37 C.F.R. § 42.5(b) (“The Board may waive or suspend a requirement of parts 1, 41, and 42.”). To the extent relevant to our analysis set forth above, in evaluating the credibility of Mr. Zatkovich’s testimony, we have considered Patent Owner’s Observations that are not

related to its Motion to Amend or unsupported attorney argument and we have further considered Petitioner's Response to the Observations.

IV. REAL PARTY IN INTEREST

Patent Owner contends there are additional real parties in interest to this proceeding and that Bank of America and Wells Fargo should be considered privies of Petitioner. *See* PO Resp. 3–22. Before reaching Patent Owner's contentions, it is necessary for us to first review the extensive record in this proceeding related to arguments Patent Owner has previously raised regarding unnamed real parties in interest and privies of Petitioner.

On September 7, 2017, pursuant to our authorization, Patent Owner filed a Motion to Terminate this Proceeding under 35 U.S.C. § 312(a) and § 315(b). Paper 10. In its Motion, Patent Owner contended that The Clearing House Payments Co., LLC (“TCH”) and Bank of America are real parties in interest to this proceeding. *Id.* at 1–6. Petitioner filed an Opposition to Patent Owner's Motion to Terminate (Paper 11) along with supporting exhibits, including a declaration by Hon. Roderick R. McKelvie (ret.) (Ex. 1002). We granted Patent Owner's request to depose Hon. McKelvie and specifically instructed Patent Owner that should it request additional briefing based on the cross-examination of Hon. McKelvie, it must seek such authorization no later than three (3) business days after the cross-examination. Paper 21, 3, 5. Patent Owner did not request briefing by the stated deadline.

On November 21, 2017, we denied Patent Owner's request to discuss evidence obtained in the depositions of Hon. McKelvie and Mr. Zatkovich that purportedly indicates Wells Fargo is a real party in interest to this proceeding and a privy of Petitioner. Paper 30. In particular, after review of

the testimony, we determined that Mr. Zatkovich did not provide testimony that supported Patent Owner's assertions regarding the relation of Wells Fargo to the present proceeding. *Id.* at 3. We further determined Patent Owner's request to discuss Hon. McKelvie's testimony was untimely because Patent Owner failed to timely request briefing on issues arising from Hon. McKelvie's testimony. *Id.* at 3. We did, however, grant Patent Owner's request to submit observations regarding the cross-examination. *See id.* at 2; Paper 25.

On December 26, 2017, we entered our decision on Patent Owner's Motion to Terminate, in which we determined TCH should be named as a real party in interest, but not Bank of America or other member banks of TCH. *See* Paper 41, 10–12. We were unpersuaded that either Bank of America, or the other member banks of TCH are in privity with Petitioner or TCH. *See id.* at 14. We denied Patent Owner's request to terminate the proceeding, but rather provided Petitioner an opportunity to update its Mandatory Notice to name TCH as a real party in interest. *Id.* at 12–13. In particular, we gave Petitioner ten (10) business days to update its Mandatory Notice to identify all real parties in interest, including TCH, without a change in the filing date of the Petition. *Id.* at 16. Petitioner subsequently updated its Notice in accordance with our instructions. Paper 43. Patent Owner did not seek reconsideration of our decision on its Motion to Terminate.

Prior to entry of our Decision on Patent Owner's Motion to Terminate, Patent Owner filed a reconsideration request of our Decision (Paper 30) denying its request to discuss evidence obtained in the depositions of Hon. McKelvie and Mr. Zatkovich on December 11, 2017.

Paper 35. Petitioner filed an Opposition on December 21, 2017 (Paper 38), to which Patent Owner filed a Reply on January 4, 2018 (Paper 42). On January 30, 2018, we denied Patent Owner's reconsideration request. Paper 46. In our Decision, we determined there was no error in our determination that Patent Owner's request to discuss Hon. McKelvie's testimony was untimely. *Id.* at 3–4.⁵ We were also not persuaded our Decision overlooked evidence that Mr. Zatkovich's testimony appears to indicate Wells Fargo is a real party in interest to this proceeding *Id.* at 4–5.

In its Response, Patent Owner again asserts TCH is a real party in interest to this proceeding. *See* PO Resp. 6–8. This issue is moot because Petitioner has updated its Mandatory Notice to name TCH as a real party in interest. *See* Paper 43.

Patent Owner also again asserts in its Response that the member banks of TCH exercise effective control and are interested parties in this proceeding. PO Resp. 8. Patent Owner asserts that various of these member banks, including Bank of America and Wells Fargo, appoint directors to the Board of TCH and TCH represents the interest of its member banks. *Id.* at 8–9. Patent Owner asserts that as evidence of the implicit control by the member banks, it was understood that the PCC (Petitioner's Patent Challenge Committee) would not challenge patents of the member banks and that the member banks exercise their control by way of a chain of authority to challenge patents that are of interest to them. *Id.* at 9–12.

⁵ Even though we determined Patent Owner's request was untimely, we further noted that we did not overlook the testimony of Hon. McKelvie, but rather we disagreed the testimony supported Patent Owner's position. *See* Paper 46, 4 n.3.

Patent Owner further asserts Wells Fargo and Bank of America are in privity with Petitioner. *Id.* at 19–20. Patent Owner also argues that TCH is an illegal restraint of trade under the Sherman Act.⁶ *Id.* at 20–21.

Petitioner asserts that with respect to the member banks, “Patent Owner largely rehashes the same unsupported arguments that were already rejected by the Board and offers nothing new that should change the Board’s prior conclusion that the Member Banks are not RPIs to this proceeding.” Reply 22–23. Petitioner asserts Patent Owner’s arguments that the member banks exercise control by chain of authority lack evidentiary support and fail to explain how the member banks purportedly exercised control over, or had the opportunity to control, this proceeding. *Id.* at 23. Petitioner further argues that Wells Fargo and Bank America each have a minority (1/25) interest in TCH and this is insufficient to exercise “significant control” over Petitioner, let alone this proceeding. *Id.* at 23–24. Petitioner also argues that Patent Owner does not establish Petitioner was a privity of Bank of America or Wells Fargo because Patent Owner fails to establish that Petitioner controlled, or had the opportunity to control, Bank of America’s or Wells Fargo’s litigation defense *Id.* at 25.

As an initial matter, we note Patent Owner’s Response was filed on November 20, 2017, which is after briefing was closed for its Motion to Terminate. *See* Paper 21, 3, 5; Paper 30, 3. We fail to discern why Patent Owner could not have presented its arguments in the briefing for its Motion to Terminate—a motion that we authorized specifically for Patent Owner to raise its allegations of failure to name real parties in interest. *See* Paper 9.

⁶ We do not have jurisdiction to determine Sherman Act violations; accordingly, we decline to reach these arguments.

Such arguments on an issue for which briefing is closed are untimely and an improper attempt to re-argue issues already decided. But, for the reasons that follow, even if we were to consider the arguments, we remain unpersuaded that Bank of America or Wells Fargo are real parties in interest to this proceeding or privies of Petitioner.

Whether a party who is not a named participant in a proceeding is a real party in interest is a highly fact-dependent question. Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,759 (Aug. 4, 2012) (“Trial Practice Guide”) (citing *Taylor v. Sturgell*, 553 U.S. 880 (2008)). A common consideration is whether the non-party exercised or could have exercised control over a party’s participation in a proceeding. Trial Practice Guide, 77 Fed. Reg. at 48,759 (citing *Taylor*, 553 U.S. at 895). A party does not become a real party in interest merely based on membership in an association. *Id.* The central focus is on the party’s *relationship to the proceeding* and the degree of control the party can exert over the proceeding, not the *relationship between parties*. See *Aruze Gaming Macau, Ltd. V. MGT Gaming, Inc.*, IPR2014-01288, slip op. at 11 (PTAB Feb. 20, 2015) (Paper 13).

The petitioner bears the burden of persuasion on the threshold issue of whether it identifies all real parties in interest. *Atlanta Gas Light Co. v. Bennett Regulator Guards, Inc.*, IPR2013-00453, slip op. at 7–8 (PTAB Jan. 6, 2015) (Paper 88). We generally accept the petitioner’s identification of real parties in interest at the time of filing the petition. *Zerto, Inc. v. EMC Corp.*, IPR2014-01254, slip op. at 6–7 (PTAB Feb. 12, 2015) (Paper 32).

Patent Owner bears the burden of production to produce evidence to rebut that presumption. *See Galderama S.A. v. Allegan Industries SAS*, IPR 2014-01422, Paper 14, 6 (PTAB Mar. 5, 2015) (citations omitted).

We determine Patent Owner fails to meet its burden of production. In particular, Patent Owner does not produce evidence that indicates either Bank of America or Wells Fargo had an opportunity to control this proceeding. Patent Owner's arguments that the member banks exercise effective control are mere attorney argument and not supported by any citation to evidence of record. *See id.* at 8–9, 11–12, 15–16. Moreover, even if accepted as true, the fact that Bank of America or Wells Fargo each appoint a director to the Board of Directors of TCH is insufficient to indicate either bank had the opportunity to control this proceeding.

We further remain unpersuaded that either Bank of America or Wells Fargo are privies of either Petitioner or TCH. As noted in our Decision on Patent Owner's Motion to Terminate, the focus of our privity inquiry is whether the petitioner had a full and fair opportunity to litigate the validity of the patent in the lawsuit. *See* Paper 41, 14 (citing *Aruze*, slip op. at 14). Our Trial Practice Guide notes a common consideration is whether the non-party exercised or could have exercised control over a party's proceedings. 77 Fed. Reg. at 48,759 (citing *Taylor*, 553 U.S. at 895). Patent Owner does not provide any argument or evidence that would appear to indicate Petitioner or TCH controlled, or had the opportunity to control the litigation defense of either Bank of America or Wells Fargo.

V. MOTION TO AMEND

We have concluded that claims 1–19 of the '648 patent are unpatentable. Therefore, we address Patent Owner's Revised Motion to

Amend, which Patent Owner states is contingent on a finding of unpatentability. *See* PO Reply, 1.

A. Burden of Persuasion

On October 4, 2017, the Federal Circuit issued an *en banc* decision addressing the burden of persuasion that the Board applies when considering the patentability of substitute claims presented in a motion to amend. *Aqua Products, Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017). The Board subsequently issued a memorandum providing further guidance on motions to amend in view of that decision. *See* Memorandum “Guidance on Motions to Amend in view of *Aqua Products*” (Nov. 21, 2017) (https://www.uspto.gov/sites/default/files/documents/guidance_on_motions_to_amend_11_2017.pdf) (“Guidance”).

In accordance with *Aqua Products* and the Guidance memorandum, the burden of persuasion is not placed on a patent owner with respect to the patentability of substitute claims presented in a motion to amend. Rather, the burden of persuasion ordinarily lies with the petitioner to show any proposed substitute claims are unpatentable by a preponderance of the evidence. The Board itself may also justify any finding of unpatentability by reference to evidence in the record, as it may do when a petitioner ceases to participate in a proceeding. *See Bosch Automotive Service Solutions, LLC v Matal*, 878 F.3d 1027, 1040 (Fed. Cir. 2017) (citing *Aqua Products*, 872 F.3d at 1311 (O’Malley, J.)).

B. Procedural Requirements

A motion to amend must meet the statutory requirements of 35 U.S.C. § 316(d), which include: (i) the patent owner may propose a reasonable number of substitute claims for each challenged claim; and (ii) the

amendment may not enlarge the scope of the claims of the patent or introduce new matter. Additionally, a motion to amend in an *inter partes* review must meet the regulatory requirements under 37 C.F.R. § 42.121. Rule 121 provides a motion to amend may be denied where: (i) the amendment does not respond to a ground of unpatentability involved in the trial; or (ii) the amendment seeks to enlarge the scope of the patent or introduce new subject matter. *See* 37 C.F.R. § 42.121(a)(2). Rule 121 further provides a motion to amend must propose a reasonable number of substitute claims and that there is a rebuttable presumption that only one substitute claim would be needed to replace each challenged claim. 37 C.F.R. § 42.121(a)(3).

C. Proposed Claims

In its Revised Motion to Amend, Patent Owner proposes an amendment for claim 2 and further proposes to add additional dependent claims 20–31. Mot. 2.⁷ In its Reply, Patent Owner withdraws its proposed addition of claims 20–22 and 26–30. PO Reply 1. Thus, amended claim 2 and dependent claims 23–25 and 31 remain for our consideration.

1. Procedural Defects

As noted by Petitioner, Patent Owner’s Motion initially proposed to add twelve new dependent claims (claims 20–31), which depend from challenged independent claims 1 and 5. *See* Opp. 24. Petitioner asserts the Motion fails to comply with the statutory and regulatory requirements to present a reasonable number of substitute claims. *Id.* (citing 35 U.S.C.

⁷ We note the Motion contains a typographical error and omits dependent claim 20 from the listing of proposed amendments; however, new claim 20 is discussed in the motion and included in the Claims Appendix. *See* Mot. 2, 7–8, 23.

§ 316(d)(1)(B); 37C.F.R. § 41.121(a)(3)). Petitioner asserts the twelve new dependent claims are not being offered as substitute claims for any challenged claims and that Patent Owner fails to adequately explain the need for additional claims (beyond the presumed one substitute claim for each challenged claim). *See id.* at 24–25. Petitioner further asserts proposed new dependent claims 23 and 24 improperly introduce new matter and, thus, fail to comply with 35 U.S.C. § 316(d)(3) and 37 C.F.R. § 42.121(a)(2)(ii). Opp. 22–23; Sur-Reply 9–10.

We first address the statutory requirement to present the claims as substitute claims. Patent Owner clarifies in its Reply that “each dependent claim is presented contingent on a finding of unpatentability of its respective parent claim (and the dependent claim, with its parent claim, becomes a replacement claim).” PO Reply 1. In accordance with Patent Owner’s stated intent, we treat the proposed new dependent claims as substitute claims for the respective challenged parent claim. However, we note that the proposed claims should have been presented to indicate the replacement by including the limitations of the respective independent claim, and not as new dependent claims that do not indicate the proposed changes made to each respective challenged parent claim. *See* 37 C.F.R. § 42.122(b) (A motion to amend claims must include a claim listing, which show the changes clearly). We further note that proposed amended claim 2 should properly have been presented as a proposed substitute claim, and have a new claim number. *See Western Digital Corp. v. SPEX Techs., Inc.*, Case IPR2018-00082, slip op. at 8 (PTAB Apr. 25, 2018) (informative). We will

disregard this minor procedural defect and treat amended claim 2 as a proposed substitute claim for original claim 2.⁸

Next we turn to the reasonableness of the number of claims presented. Section (a)(3) of Rule 121 sets forth that the presumption is that only one substitute claim would be needed to replace each challenged claim, which may be rebutted by a demonstration of need. In its Motion, Patent Owner initially proposed six substitute claims for challenged claim 1 (dependent claims 26–31) and six substitute claims for challenged claim 5 (dependent claims 20–25). Patent Owner asserts it is unfair and unreasonable, in view of *Aqua Products*, that a single substitute claim per 37 C.F.R. § 1.121(a)(3), a requirement not imposed by statute, is sufficient. Mot. 2. Patent Owner further asserts it has a need to claim over the range of disclosure within the specification to ensure a determination of patentability in view of unknown future positions adopted by Petitioner and the Board. *Id.*; *see also* PO Reply 4 (“[T]he number of claims presented (reduced herein) is believed reasonable.”).

We disagree with Patent Owner’s contention that Rule 121(a)(3) is unreasonable in view of *Aqua Products*. As set forth in our Guidance after *Aqua Products*, a motion to amend still must meet the statutory requirements of 35 U.S.C. § 316(d) and the procedural requirements of 37 C.F.R. § 42.121. *See* Guidance. This guidance is fully supported by multiple opinions in *Aqua Products* that addressed the procedural requirements patent owners must fulfill to have a motion to amend be considered by the Board.

⁸ Patent Owner does not state whether amended claim 2 is presented contingent on a finding of unpatentability of original claim 2. *See* Motion 6; PO Reply 1. However, the issue is moot as, for the reasons set forth in this Decision, we conclude both claims are unpatentable.

See Aqua Products, 872 F.3d at 1305–1306 (O’Malley, J) (“[T]he patent owner must satisfy the Board that the statutory criteria in § 316(d)(1)(a)–(b) and § 316(d)(3) are met and that any reasonable procedural obligations imposed by the Director are satisfied before the amendment is entered into the IPR.”); *id.* at 1341 (Reyna, J.) (“[T]he Patent Office has adopted regulations that address what a patent owner must submit in moving to amend the patent . . . These regulations are not called into question by today’s decision.”); *id.* at 1342 (Taranto, J.) (“[C]ertain PTO regulations imposing burdens of production on the patent owner are undisturbed and therefore applicable on remand in this case.”); *id.* at 1358 (Hughes, J.) (“The statute delegates rulemaking authority to the Patent and Trademark Office for the conduct of *inter partes* reviews generally, and to set procedures for the amendment of claims specifically.”).

Although Patent Owner’s Motion presents six substitute claims each for challenged claims 1 and 5, Patent Owner later withdrew claims 20–22 and 26–30 in its Reply. *See* PO Reply 1. We address the patentability of each of the remaining claims as discussed in our analysis below. Therefore, we decline to also address whether Patent Owner’s Motion complies with 35 U.S.C. § 316(d)(1)(B) and with Rule 121(a)(3).

We are persuaded that claims 23 and 24 do not comply with 35 U.S.C. § 316(d)(3). Claim 23 and claim 24, by virtue of its dependency from claim 23, recite “determining a location of the user communications device with a GPS locating function on a cell phone.” Mot. 24. Patent Owner asserts claim 23 is supported in the specification on Col. 5, lines 30–33. *Id.* at 10, 24. Petitioner argues the cited support refers only to tracking a “cell phone” and not all types of “user communications devices” (e.g., laptops, PDAs)

and, therefore, claims 23 and 24 fail to comply with 35 U.S.C. § 316(d)(3). Opp. 23; Sur-Reply 10. We agree with Petitioner these claims improperly introduce new matter.

An amended claim must have adequate written support in the specification to avoid the prohibition against new matter. The relevant inquiry is whether the specification reasonably conveys to those skilled in the art the inventor had possession of the claimed subject matter as of the filing date. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (internal citations omitted). The cited section of the '648 Patent states “because of the GPS locating functions now universal on cell phones, any attempted false verification query can automatically trigger a tracking routine to immediately locate the stolen cell phone.” Ex. 1001, 5:30–33. The '648 Patent further sets forth that communications devices include computers linked to the internet and personal communication devices, such as cellphones and PDAs. *See id.* at 2:21–33. Although Patent Owner establishes the '648 Patent provides support for determining a location of a *cell phone*, the cited passage does not support the inventor had possession of determining a location of the other types of other devices encompassed by user communication device (e.g., computer). Patent Owner’s attorney argument that a laptop computer can communicate through a cellphone with the verifier (PO Reply 12) is not supported by testimony or evidence and does not persuade us establish the specification would reasonably convey to those skilled in the art that the inventor had possession of the proposed claimed subject matter as of the filing date. Accordingly, we determine proposed substitute claims 23 and 24 improperly introduce new subject matter.

We conclude that, with respect to claims 23 and 24, Patent Owner has failed to meet the requirements of 35 U.S.C. § 326(d)(3). We address below the patentability over the prior art of the proposed claims.

2. *Patentability of Amended Claim 2 and New Claims 25 and 31*

Patent Owner proposes to amend claim 2 to additionally recite “wherein the first verifier communication device (2403) is configured to open a communication link with the user communication device (2403), and thereafter determine whether the open communication link has been broken.” Mot. 16. Patent Owner additionally proposes to amend claim 2 to further limit the condition the transaction proceeds to include “and the open communications link is not previously broken.” *Id.* at 17. New claims 25 and 31 similarly set forth the transaction is blocked if the opened communication link is broken. *See id.* at 25, 27.

Petitioner contends the new limitations set forth in claims 2, 25, and 31 are all disclosed by Law and/or Dua. Mot. 4. In particular, Petitioner asserts Law discloses that after the authorization request is sent to the user’s wireless device, the server will start monitoring the response time and if the response time is not received within a specified timeout period, the transaction will be blocked. *Id.* at 5–6. In support, Mr. Zatkovich testifies that a person of ordinary skill in the art would understand that a broken communication link would include a “timed-out” condition in which the line is “dropped” or a response is not received within a specific time period. Ex. 1016 ¶ 190, 192 (citing Ex.1001, 8:22–32); *see also* Sur-Reply 5 (asserting that just like in the ’648 Patent, Law teaches if a response is not received within a specified timeout period, the transaction will be blocked). Petitioner further asserts that Dua also teaches if the communications link is

broken, transactions will be declined and that a person of ordinary skill would have modified Law's system to reject a request if the link is severed (as taught by Dua) as an extra security measure. Mot 8, n.7; Sur-Reply 7.

Patent Owner asserts Law expressly includes the human response time within the scope of its timeout, while the timeout of the '648 Patent refers to the status of the communication link, regardless of the status of the cellphone user. PO Reply 7–8. Patent Owner asserts the timeout disclosed in the '648 Patent is different than the timeout disclosed by Law. *Id.* Patent Owner argues Mr. Zatkovich's testimony that the timeout disclosed in the '648 Patent and Law's use of the similar phrase lacks credibility and must be discounted. *Id.* at 8–9; *see also* Tr. 46 (“The 648 Patent talks about a timeout, we believe that's a different timeout than the one that Mr. Zatkovich is talking about.”).

For the same reasons discussed previously for challenged claim 1, we determine Law discloses opening a communication link with the user communication device. Petitioner further persuades us that Law discloses determining whether the opened communication link has been broken and not allowing (blocking) the transaction to proceed if the communications link is broken through its description that in the event a user does not respond within a specified time limit, the authorization server will deny the request. *See* Ex. 1005 ¶ 63, Fig. 6. Patent Owner does not contest that a “time-out” is one example of a condition that may cause the communication to be broken. *See* PO Reply 7 (“being ‘timed-out’ is only one example” that may cause the communication to be broken). Indeed, as support for the amendments, Patent Owner cites to the description in the '648 Patent that if the communication link is “otherwise broken, as a result of being ‘timed-

out’ for instance, the transaction will fail for the same reason.” *See* Ex. 1001, 8:26–32. We are not persuaded by Patent Owner’s attorney argument that the timeout described in Law is different than the timeout described in the ’648 Patent. Because we determine Law discloses the declining transactions if a communication link is broken, we need not determine whether Dua also discloses this limitation.

For the foregoing reasons, we determine Petitioner establishes, by a preponderance of the evidence, that amended claim 2 and substitute claims 25 and 31 are unpatentable under 35 U.S.C. § 103 over Law and Dua.

3. Patentability of New Claims 23 and 24

Petitioner contends that proposed substitute claims 23 and 24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Law, Dua, and Choey. Mot. 17–22. Petitioner further contends proposed substitute claims 23 and 24 fail to comply with the written description requirement of 35 U.S.C. § 112 and are indefinite. *Id.* at 22–24.

Choey discloses a method and system for mitigating the risk of transaction credit card fraud using location based services provided by the card holder’s mobile phone wireless carrier. *See* Ex. 1017 ¶¶ 2, 10. In one example, after a predetermined number of incorrect PIN entry attempts, ATM processing system automatically requests the wireless carrier to return the location information of the mobile phone of the card holder using location based services provided by the wireless carrier. *Id.* at Fig. 5, ¶ 35. When the location of the mobile phone is returned and determined to be at or near the location at which the transaction is being attempted, the ATM processing system declares the transaction to be “safe.” *Id.* ¶ 35. If the

location of the subscriber's mobile phone is determined to be at a different location than the location at which the transaction is being attempted, the transaction is denied. *Id.*

Petitioner asserts Choey discloses “determining a location of the user communications device with a GPS locating function on a cell phone,” as recited in claim 23 and its dependent claim 24. Opp. 17–19. Petitioner asserts it would have been obvious to a person of ordinary skill in the art to combine the authentication methods of Law and Dua with the GPS-based fraud detection method of Choey to obtain the benefits from Choey's location-based verification method (providing a less expensive way to avoid the risk of fraudulent transaction card use and reducing incidents of so-called positives by allowing valid transactions that might otherwise be denied). *Id.* at 20–22. In support of its assertions, Petitioner relies on testimony of Mr. Zatkovich. *See id.* at 17–22.

Patent Owner asserts Choey discloses the use of GPS only in cell towers and expressly teaches away from incorporating the GPS locating function “on a cell phone.” PO Reply 9–10. Patent Owner further argues it would not have been obvious to modify Choey to provide a GPS locating function on the cell phone because the function does not provide independent third party verification of a network-based scheme and it would compromise battery life. *Id.* at 10–11. Patent Owner additionally asserts Mr. Zatkovich's testimony lacks credibility. *Id.* at 11.

Based on the entirety of the record before us, we are persuaded the preponderance of the evidence establishes that new claims 23 and 24 are obvious over Law, Dua, and Choey. We agree with Petitioner that Choey discloses determining the location of a user's cell phone (subscriber's

mobile phone). *See* Ex. 1017 ¶ 35. We are not persuaded by Patent Owner’s argument that Choey only discloses the use of GPS in cell towers. As noted by Petitioner, Choey specifically discloses its location based services make use of GPS technology used in a GPS-enabled mobile phone system to detect mobile phone location. *See* Sur-Reply 7–8; Ex. 1017 ¶ 42. Choey further describes the satellites are tracked by a fixed receiver, which relays that information to a GPS-enabled cell phone. Ex. 1017 ¶ 42. We agree with Petitioner that the claim limitation “GPS locating function on a cell phone” encompasses the system disclosed by Choey in which software on a cell phone obtains GPS information from the wireless network (fixed receiver). Sur-Reply 9. Furthermore, we determine Petitioner articulates sufficient persuasive reasoning, supported by evidence of record, that the skilled artisan would have been motivated to combine the teachings of Choey with Law and Dua. *See* Opp. 20–22; *see also* Ex. 1017 ¶ 45 (describing the benefits of using location based services in verifying transactions).

For the foregoing reasons, we determine Petitioner establishes, by a preponderance of the evidence, that claims 23 and 34 are unpatentable under 35 U.S.C. § 103(a) over Law, Dua, and Choey. Furthermore, for the reasons set forth in section V.c.1 *supra*, Petitioner establishes claims 23 and 24 do not have adequate written support. Accordingly, we determine that these claims are also unpatentable under 35 U.S.C. § 112, first paragraph.

Our determination that proposed substitute claims 23 and 24 are unpatentable under 35 U.S.C. §§ 103(a) and 112, first paragraph, is dispositive. Therefore, we decline to also address Petitioner’s contention

that the proposed claims are also unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite. *See* Opp. 23–24.

VI. CONCLUSION

Petitioner has demonstrated by a preponderance of the evidence that:

- A. Claims 1–15 and 19 of the '648 patent are unpatentable under 35 U.S.C. § 103(a) over Law and Dua; and
- B. Claims 16–18 of the '648 patent are unpatentable under 35 U.S.C. § 103(a) over Law, Dua, and Salveson.

We further conclude Patent Owner's Revised Motion to Amend fails to comply with regulatory and statutory procedural requirements and also conclude that, based on a preponderance of the evidence, amended claim 2 and new claims 23, 24, 25, and 31 are not patentable over the prior art of record.

VII. ORDER

It is

ORDERED that, based on a preponderance of the evidence, claims 1–19 of U.S. Patent No. 8,285,648 are unpatentable under 35 U.S.C. § 103(a); and

FURTHER ORDERED that Patent Owner's Revised Motion to Amend (Paper 36) is *denied*.

This is a final written decision of the Board under 35 U.S.C. § 318(a), and as such, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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