

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VISA INC.,
Petitioner,

v.

CORTEX MCP, INC.,
Patent Owner.

IPR2024-00490
Patent 11,329,973 B2

Before JAMES J. MAYBERRY, SHEILA F. McSHANE, and
RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Visa Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–17 (the “challenged claims”) of U.S. Patent No. 11,329,973 B2 (Ex. 1004, “the ’973 patent”). Paper 2 (“Pet.”). Cortex MCP, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review, under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R. § 42.4(a) (2024) (“The Board institutes the trial on behalf of the Director.”). The reasonable likelihood standard is “a higher standard than mere notice pleading,” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Real Parties in Interest

Petitioner states that Visa Inc. is the real party in interest in this proceeding. Pet. 83. Patent Owner states that Cortex MCP, Inc. is the patent owner and real party in interest. Paper 4, 1.

C. Related Proceedings

The parties identify the following district court case involving the '973 patent: *Cortex MCP, Inc. v. Visa, Inc.*, No. 5:23-cv-05720 (N.D. Cal.). Pet. 83; Paper 4, 1. Petitioner further states that it has concurrently filed petitions against three related patents: U.S. Patent No. 9,251,531 (IPR2024-00486 and IPR2024-00487); U.S. Patent No. 9,954,854 (IPR2024-00488); and U.S. Patent No. 10,749,859 (IPR2024-00489). Pet. 83.

D. The '973 Patent (Ex. 1004)

The '973 patent is titled "File Format and Platform for Storage and Verification of Credentials" and issued on May 10, 2022, from an application filed on June 4, 2020. Ex. 1004, codes (54), (45), (22).

The '973 patent is directed to "a computer-implemented method for generating and verifying officially variable electronic representations [OVER files]" of user credentials. Ex. 1004, code (57). The method comprises

storing information associated with a credential of a user for proving the user's identity or qualifications; receiving a file generation request to provide authentication of the user based on the information associated with the credential; generating a file comprising a virtual representation of the credential that has been verified by an issuing agency to be an official representation of the credential; transmitting the file; receiving a verifying request whether the file transmitted to the user authenticates the user; verifying that a NFC or Bluetooth protocol-based communication associated with the file corresponds with the credential of the user, in response to the

verifying request; and transmitting an authentication message indicating whether the NFC or Bluetooth protocol-based communication corresponds to the information associated with the credential of the user.

Id.

The '973 patent Specification explains that an OVER File “may provide a secure file format and platform for the storage and verification of key user or consumer credentials.” Ex. 1004, 4:3–6. The OVER File credentials “may comprise any officially verifiable electronic credential, such as, for example, a government issued identification, such as a driver’s license, non-driver’s identification card, or professional license,” as well as “privately issued credentials, such as, for example, employee identification cards, merchant loyalty cards, access cards, insurance credentials, transportation credentials, or any other credential that may be electronically verified by an issuing agency.” *Id.* at 4:18–27.

Figure 1, reproduced below, illustrates one embodiment of a virtual credential management platform in accordance with the invention. *Id.* at 2:44–46.

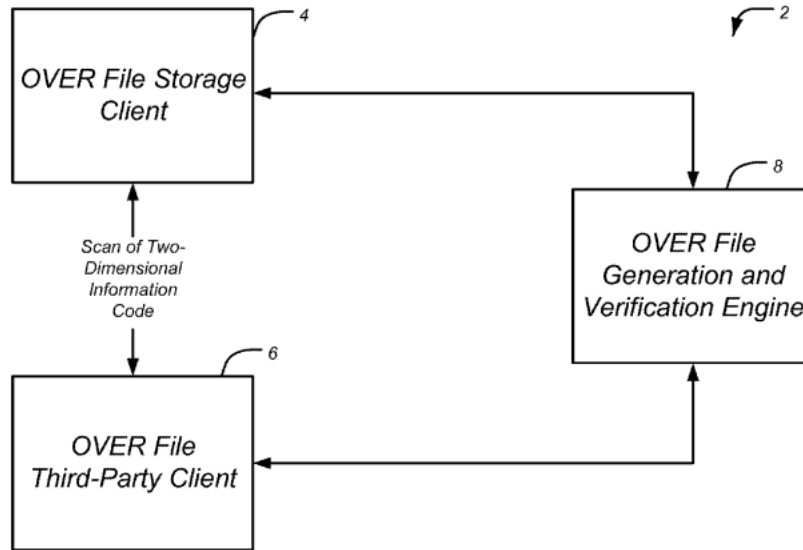


Fig. 1

As shown in Figure 1, OVER File management platform 2 has three main components: OVER File Storage Client 4; OVER File Third-Party Client 6; and OVER File Generation and Verification Engine 8. *Id.* at 4:6–4:10.

OVER File Storage Client 4 “may be executed by a user device to store generated OVER Files representative of the user’s credentials,” and “may initiate generation of new OVER Files and comprise a display function for displaying stored user credentials for third-party verification.” *Id.* at 4:10–18. OVER File Third-Party Client 6 “may be executed by a third party device to verify the existence and validity of OVER File credentials presented by the user,” for example by “allow[ing] a third party to scan or otherwise interact with OVER File credentials displayed on a user device” and “contact[ing] a remote server, such as the OVER File generation and verification engine 8, for verification of the displayed user credential.” *Id.* at 4:28–36. OVER File Generation and Verification Engine 8 “may generate OVER File credentials in response to requests from an OVER File storage

client 4 or an OVER File third party client 6” from “data provided by a user, a third party, or an issuing agency or authority,” and may also “provide authorization of OVER File credentials requested by third parties.” *Id.* at 4:46–54.

E. Illustrative Claims

Of the challenged claims, claims 1, 8, and 16 are independent. Claim 1 is illustrative and is reproduced below.

1. [preamble] A computer-implemented method comprising:
 - [1.1] storing, in a memory of an officially verifiable electronic representation (OVER) generation and verification engine, information associated with a credential of a user for proving the user’s identity or qualifications;
 - [1.2] receiving, from an OVER file storage client device of the user, an OVER file generation request to provide authentication of the user based on the information associated with the credential;
 - [1.3] generating, by a processor of an OVER engine, an OVER file comprising a virtual representation of the credential that has been verified by an issuing agency to be an official representation of the credential, based on the information associated with the credential of the user;
 - [1.4] transmitting, to the OVER file storage client device of the user, the OVER file in response to the OVER file generation request;
 - [1.5] receiving, from an OVER file third-party client verifying device, a verifying request to verify that the OVER file transmitted to the user authenticates the user based on a Near Field Communication (NFC) protocol-based communication associated with the OVER file on the OVER file storage client device of the user;
 - [1.6] verifying that the NFC protocol-based communication associated with the OVER file corresponds with the

information associated with the credential of the user that is stored in the OVER engine, in response to the verifying request;

[1.7] transmitting, to the OVER file third-party client verifying device, an authentication message comprising an indication of whether the NFC protocol-based communication associated with the OVER file on the OVER file storage client device of the user corresponds to the information associated with the credential of the user that is stored in the OVER engine;

[1.8] requesting, by the processor of the OVER engine to the issuing agency, an agency authentication to validate the credential, wherein the issuing agency issued the credential of the user; and

[1.9] receiving, by the OVER engine, a status indicator and credential information associated with the credential; and

[1.10] storing, by the OVER engine, the status indicator.

Ex. 1004, 21:59–22:34 (bracketed paragraph identifiers added).

F. Applied References

Petitioner relies upon the following references:

Oborne, US 2012/0316992 A1, published Dec. 13, 2012 (Ex. 1011, “Oborne”);

Stafford, US 2009/0271321 A1, published Oct. 29, 2009 (Ex. 1012, “Stafford”);

Purves et al., US 2013/0054454 A1, published Feb. 28, 2013 (Ex. 1013, “Purves”);

Neafsey, US 2013/0212248 A1, published Aug. 15, 2013 (Ex. 1015, “Neafsey”).

Pet. 10.

Petitioner submits the Declaration of Dr. Michael Shamos (Ex. 1005).

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–17 of the '973 patent based on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4–7, 16, 17	103(a) ¹	Oborne
3, 8–15	103(a)	Oborne, Purves
1, 3, 5–8, 10, 12–15	103(a)	Stafford, Purves
2, 4, 9, 11, 16, 17	103(a)	Stafford, Purves, Neafsey

Pet. 10.

II. DISCUSSION

A. Claim Construction

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b) (2020). Petitioner identifies two claim terms for construction: “officially verifiable electronic representation (OVER) file” and “verified by an issuing agency.” Pet. 11–13. These terms will be discussed below.

1. “Officially Verifiable Electronic Representation (OVER) File”

Petitioner argues that “[e]ach independent claim recites an ‘officially verifiable electronic representation (OVER)’ file,” and that the '973 patent Specification “uses the term ‘OVER’ to refer to an ‘Officially Verifiable

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of an application to which the '973 patent claims priority. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

Electronic Representation.” Pet. 12 (citing Ex. 1004, 2:46–48). Petitioner asserts that “[t]he specification describes that an OVER file may contain ‘credential information’” and “may also contain or act as a credential, which may in turn be representative of another credential, such as a driver’s license.” *Id.* (citing Ex. 1004, 6:46–48, 7:13–16, 12:36–39). Additionally, according to Petitioner, “[t]his ‘OVER file credential’ may include an image from an issuing agency, such as a logo or a card image.” *Id.* (citing Ex. 1004, 9:39–41, 14:31–39; Ex. 1005 ¶¶ 83–88). “In some embodiments,” Petitioner contends, “an OVER File storage client (e.g., a client device) generates an information code in the form of a networked or radio transmission such as an NFC or Bluetooth communication for verification of the user’s credential by a third party.” *Id.* (citing Ex. 1004, code (57), 12:39–48; Ex. 1005 ¶¶ 155–158, 163, 172, 177–184).

Petitioner asserts that “[t]he ’973 patent does not describe that tokens may be either an OVER file or a part of an OVER file (such as a representation of a credential),” but “Patent Owner’s complaint expressly identifies tokens as OVER files.” Pet. 12–13 (citing Ex. 1018, 4, 9, 16–17). Thus, Petitioner states, “[f]or the purposes of this petition, [Petitioner] applies a construction that includes Patent Owner’s interpretation of this term.” *Id.* at 13. “Accordingly,” Petitioner states, it is applying “an interpretation of ‘OVER file’ as encompassing a file comprising an image of (or associated with) the credential (as described in the specification and addressed in grounds 3–4), but also encompassing a file comprising a token (as asserted in Patent Owner’s infringement complaint and addressed in grounds 1–2).” *Id.* (citing Ex. 1005 ¶¶ 86–88).

Patent Owner argues that, at this stage of the proceeding, “the Board does not need to construe any terms of the Challenged Claims.” Prelim. Resp. 21–22. However, Patent Owner asserts that Petitioner has not met its statutory mandate for grounds 1 and 2 based on a claim construction of “OVER file” that it “refuses to endorse.” *Id.* at 22, 32. More specifically, Patent Owner argues that “[t]he Petition exclusively asserts unpatentability in Grounds 1–2 based on a construction of ‘OVER file’ as ‘encompassing a file comprising a token,’” but “[Petitioner] and Dr. Shamos assert this construction is unsupported.” *Id.* at 33. In support, Patent Owner cites the Petition’s statement that “[t]he ’973 Patent does not describe that tokens may be either an OVER file or a part of an OVER file . . .” and Dr. Shamos’s statement that “[t]he ’973 patent does not discuss tokens or describe that tokens may be either an OVER file or part of an OVER file . . .” *Id.* (citing Pet. 13; Ex. 1005 ¶ 86). Patent Owner contends that Petitioner “cannot demonstrate a reasonable likelihood of success” by “proffering claim constructions that it asserts are incorrect.” *Id.*

We now turn to the evidence of record. Dr. Shamos testifies that “[t]he term ‘officially verifiable electronic representation’ is not a term of art” and “was devised purely for use in the Cortex Patents.” Ex. 1005 ¶ 83. Patent Owner does not argue otherwise. Prelim. Resp. 21–22, 32–33. The ’973 patent Specification states that an OVER file “may provide a secure file format and platform for the storage and verification of key user or consumer credentials.” Ex. 1004, 4:3–6. The Specification further explains that the OVER file is “representative of the user’s credentials” and “[t]he OVER file credentials may comprise any officially verifiable electronic credential, such as, for example, a government issued identification, such as a driver’s

license, non-driver’s identification card, or professional license,” as well as “privately issued credentials” or “any other credential that may be electronically verified by an issuing agency.” *Id.* at 4:12–13, 4:18–27.

Claim 1 also recites that the OVER file “compris[es] a virtual representation of the credential” of a user. Ex. 1004, 22:1–2. Dr. Shamos states that he “interpret[s] an OVER file as encompassing a file comprising a virtual representation in the form of an image of (or associated with) the credential, but also encompassing a file comprising a virtual representation in the form of a token.” Ex. 1005 ¶ 88.

Based on the ’973 patent Specification, the language of claim 1, and the testimony of Dr. Shamos, we preliminarily determine, at this stage of the proceeding, that the term “OVER file” encompasses a virtual representation of one or more credentials, to be used for verification of those credentials. For purposes of institution, we need not determine whether the term “OVER file” necessarily includes “tokens” as a general matter, or further elaborate on what additional characteristics might be required to qualify as an “OVER file.” *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”). However, as discussed further in Section II.D.2(d) below, we determine that Petitioner has made a sufficient showing for purposes of institution that Osborne’s tokens qualify as “OVER files.” We emphasize that our construction of “OVER file” is preliminary and based on the present record, and we encourage the parties to further develop the record on claim construction during the trial.

We do not agree with Patent Owner’s assertion that we should deny institution because Petitioner “refuses to endorse” the construction it proposes, or because Petitioner “assert[s] this construction is unsupported.” *See* Prelim. Resp. 32–33. The relevant issue is not Petitioner’s subjective belief in its proposed construction, but rather whether the present record contains a sufficient basis to support the construction proposed. *See Philip Morris Products, S.A. v. Rai Strategic Holdings, Inc.*, IPR2020-00921, Paper 13 at 42–44 (PTAB Aug. 5, 2021) (explaining that 37 C.F.R. § 42.104(b)(3) “does not require a petitioner to express a subjective belief in the correctness of its proffered claim constructions”). Here, as discussed above, there is a sufficient basis, based on the claim language and ’973 patent Specification, to construe “OVER file” as encompassing a virtual representation of one or more credentials, to be used for verification of those credentials. Moreover, we do not see Petitioner as expressly disagreeing with the construction it proposes by pointing out that the ’973 patent Specification does not expressly state that an OVER file encompasses “tokens” (*see* Pet. 12–13), because the claims are not limited to the specific embodiments described in the specification, or the precise words used to describe those embodiments. *See Philips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (explaining that “we have repeatedly warned against confining the claims to those embodiments” described in the specification because “persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments”).

2. “*verified by an issuing agency*”

Petitioner states that “[c]laims 1, 2, 8, 9, 16, and 17 recite an OVER file comprising ‘a virtual representation of the credential that has been

verified by an issuing agency to be an official representation of the credential.” Pet. 13. Petitioner argues that “[d]uring prosecution of the parent application, Applicant argued that this phrase requires that the issuing agency verify that the *virtual representation* is an official representation of the credential.” *Id.* (citing Ex. 1007, 40, 44–45). “Accordingly,” Petitioner contends, “this petition construes this phrase to require that an issuing agency have verified a *virtual representation* in an OVER file as being an official representation of a credential.” *Id.* (citing Ex. 1005 ¶¶ 89–92). Patent Owner does not appear to dispute this contention at this stage of the proceeding. *See* Prelim. Resp. 21–22. For purposes of institution, we will apply Petitioner’s proposed construction of this term.

3. *Other Terms*

The parties do not propose constructions for any other claim terms, and we determine that it is not necessary to provide an express interpretation of any other claim terms at this stage of the proceeding. *See Nidec*, 868 F.3d at 1017; *Vivid Techs.*, 200 F.3d at 803.

B. *Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented 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) where in evidence, objective evidence

of non-obviousness.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine 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)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b) (2020). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

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

C. Level of Ordinary Skill in the Art

Relying on Dr. Shamos, Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention “would typically have a bachelor’s degree in computer science, computer engineering, or a related field, with at least two years of work involving electronic payment systems, network authentication systems, or related areas.” Pet. 9 (citing Ex. 1005 ¶¶ 74–79). Petitioner further states that a person of ordinary skill “could have less education but significant professional experience in one or more of

² At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

those fields.” *Id.* Patent Owner does not offer a proposed level of ordinary skill at this stage of the proceeding. *See generally* Prelim. Resp. 21.

At this stage of the proceeding, we adopt Petitioner’s assessment of the level of skill in the art, which is consistent with the ’973 patent and the asserted prior art of record.

D. Ground 1: Obviousness of Claims 1, 2, 4–7, 16, and 17 over Osborne

Petitioner contends that claims 1, 2, 4–7, 16, and 17 would have been obvious over Osborne. Pet. 10, 14–39. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation and provides rationales supporting its obviousness contentions. *Id.*

Petitioner also relies upon the Shamos Declaration (Ex. 1005) to support its positions. Patent Owner asserts that the claims are not obvious over Osborne. Prelim. Resp. 22–33. In particular, Patent Owner alleges that Osborne fails to teach limitations [1.1] and [1.3]. *Id.*

1. Overview of Osborne (Ex. 1011)

Osborne is directed to a payment privacy tokenization (PPT) system that transforms payment token-based purchase orders into multi-issuer purchase payment funds transfers. Ex. 1011, code (57), ¶ 22. Figure 1A, reproduced below, depicts diagrams illustrating aspects of the payment tokenization in some embodiments of the invention. *Id.* ¶ 7.

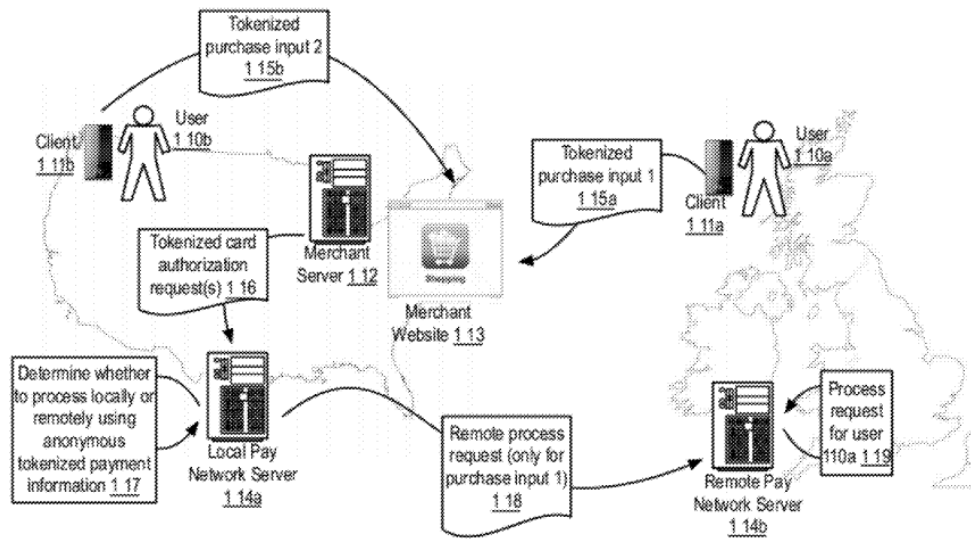


FIGURE 1A

Example: Payment Tokenization

Figure 1A, above, depicts a payment tokenization system where “a payment network system, comprised of payment network servers located in distant geographical regions . . . may be required to determine where to process a purchase transaction.” Ex. 1011 ¶ 23. The system of Figure 1A includes local pay network server 114a, remote pay network server 114b, user 110a, and merchant 112 with website 113. *Id.*

Figure 4, reproduced below, is “a data flow diagram illustrating an example procedure to enroll in a token-based purchase payment program in some embodiments of the PPT.” Ex. 1011 ¶ 9.

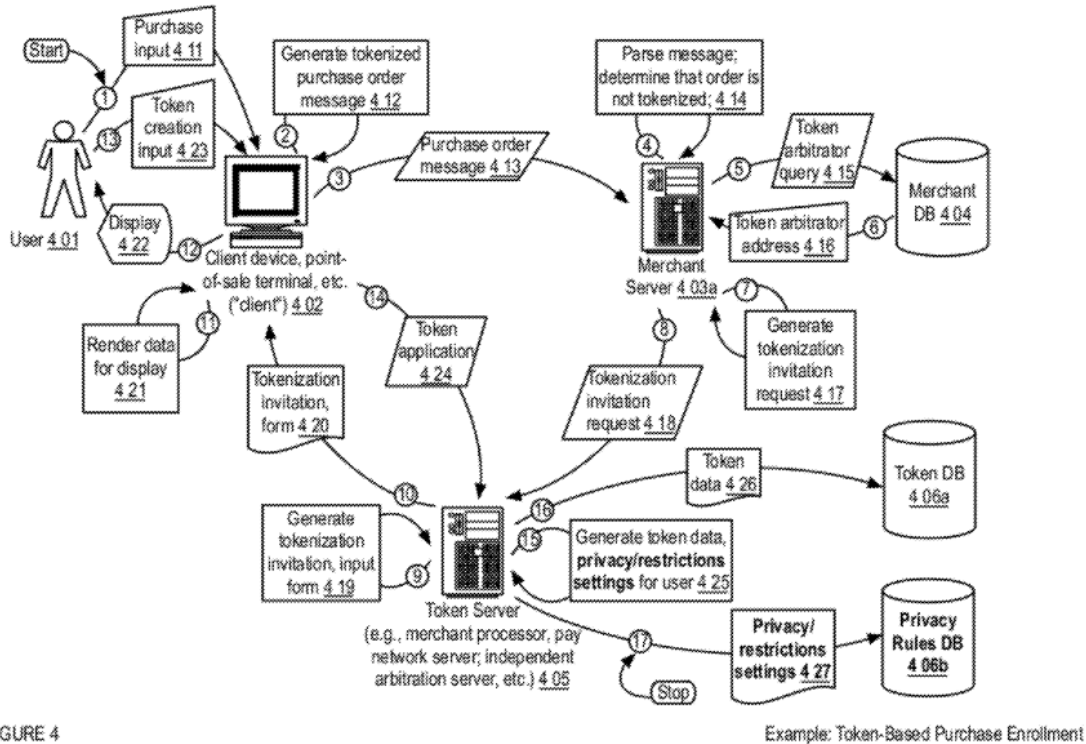


Figure 4, above, illustrates an example procedure to enroll in a token-based purchase payment program, and shows the interactions between user 401, client device 402, merchant server 403a, and token server 405. *Id.* ¶¶ 35–44. As shown in Figure 4, user 401 may wish to purchase a product, service, or offering from a merchant, and provide purchase input 411 to merchant server 403a via client device 402. Ex. 1011 ¶ 35. For example, the client 402 may generate a purchase order message and provide it to merchant server 403a (412, 413). *Id.* ¶ 36. If merchant server 403a determines that the purchase order message 413 is not tokenized, the merchant server can send a tokenization invitation on behalf of the user and send it to token server 405 (417, 418). *Id.* ¶¶ 37, 38. Token server 405 may generate a tokenization invitation and application form and provide it to the client (419, 420).

If the user wishes to enroll in payment tokenization services, it “may provide token creation input to complete the application form.” Ex. 1011 ¶ 40. The client “may generate a completed application form,” and provide “the token application to the token server (either directly or via the merchant server).” *Id.* “The token server may obtain the application form, and parse the form to extract data fields and values from the form to generate a token data record.” *Id.* ¶ 41. The token server may store the data extracted from the application form to a token database. *Id.* ¶ 44.

2. *Analysis of Independent Claim 1*

a) 1. *[preamble]: “[a] computer-implemented method comprising:”*

Petitioner argues that “Oborne teaches a computer-implemented method.” Pet. 15 (citing Ex. 1011 Figs. 1A, 4, 6A–6E, ¶¶ 114–122; Ex. 1005 ¶ 202). Patent Owner does not present arguments regarding the preamble at this stage of the proceeding. *See generally* Prelim. Resp. We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding the preamble.³

b) *[1.1]: “storing, in a memory of an officially verifiable electronic representation (OVER) generation and verification engine, information associated with a credential of a user for proving the user’s identity or qualifications;”*

Petitioner argues that Oborne teaches an “OVER generation and verification engine (OVER engine)” in the form of a “payment privacy tokenization apparatus” or “PPT” apparatus to “transform payment token-based purchase orders, via PPT components, into multi-issue purchase

³ Because we are persuaded that Petitioner has shown that Oborne teaches the subject matter recited in the preamble, we need not decide whether the preamble is limiting for purposes of this Decision.

payment funds transfers.” Pet. 15 (citing Ex. 1011 ¶¶ 22, 166). Petitioner asserts that “[t]his system includes a ‘token server,’ also referred to as a ‘token arbitrator,’ that may be an entity involved in the PPT, such as ‘part of the payment network (e.g. a pay network server).” *Id.* at 15–16 (citing Ex. 1011 ¶ 53). According to Petitioner, “Oborne also notes that ‘the source of the token’ may be the ‘issuer’ (e.g., a funding source for the user’s account).” *Id.* at 16 (citing Ex. 1011 ¶¶ 29, 47, 48). Petitioner further contends that Oborne’s Figure 4 “depicts the general arrangement of customers, parties, and the pay network server (which can include the PPT apparatus).” *Id.* (citing Ex. 1011, Fig. 4). Referencing its discussion for elements [1.3] and [1.6], Petitioner contends that “this apparatus generates and verifies OVER files,” and thus Oborne “discloses the recited OVER engine.” *Id.* at 17 (citing Ex. 1005 ¶¶ 203, 204).

Petitioner also argues that “Oborne’s PPT apparatus stores information associated with a credential of a user for providing the user’s identity or qualifications” using “a storage device storing account information in a database,” as shown in Oborne’s Figure 15. Pet. 17–18 (citing Ex. 1011, Fig. 15, ¶¶ 114, 146–151). Petitioner asserts that this database’s “Accounts table 1519d” includes “fields with *information associated with a credential* (e.g., information about the user’s credit cards) and *useful for proving the identity or qualifications of a user*, such as ‘account_number,’ ‘issuer_name,’ ‘account address,’ ‘routing number, etc.’” *Id.* at 18 (citing Ex. 1011 ¶ 147). Petitioner further contends that “Oborne teaches that a user ‘desir[ing] to utilize a card’ may use ‘tokens in lieu of payment information’ using the token to prove identity to a merchant as a

stand-in for credent card or account information (thus, *for proving the user's identity or qualifications*).” *Id.* (citing Ex. 1011 ¶ 25; Ex. 1005 ¶ 205).

Patent Owner responds by arguing that Petitioner improperly maps both the “OVER Engine”/“processor” and “issuing agency” in claim 1 on the same token server in Osborne. Prelim. Resp. 29–32. As discussed below with respect to limitation [1.3], which recites verification by an “issuing agency,” we do not agree with Patent Owner’s argument in this regard. *See* § II.D.2(d), *infra*. Patent Owner does not raise additional arguments as to limitation [1.1].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- c) [1.2]: “*receiving, from an OVER file storage client device of the user, an OVER file generation request to provide authentication of the user based on the information associated with the credential;*”

Petitioner argues that, “[t]o generate token information” in Osborne, “the user communicates ‘via a client such as, but not limited to: a personal computer, mobile device, television, point-of-sale terminal, kiosk, ATM, and/or the like,’ providing input ‘indicating the user’s desire to purchase the product.’” Pet. 18 (citing Ex. 1011 ¶ 35). According to Petitioner, “[i]f the user desires to use tokenization, the client ‘may generate a completed application form, and provide, e.g., 424, the token application to the token server (either directly or via the merchant server).’” *Id.* at 18–19 (citing Ex. 1011 ¶ 40).

Petitioner also argues that Osborne provides an example encoding of a tokenization application form in paragraph 40, which includes “*information associated with the credential*, such as account number, type, billing

address, etc., which are stored by Osborne’s PPT apparatus.” Pet. 19–20 (citing Ex. 1011 ¶ 40). The token server, according to Petitioner, “uses values extracted from the form when generating a token record.” *Id.* at 20 (citing Ex. 1011 ¶ 41). Therefore, Petitioner contends, the request is “based on information associated with the credential,” as limitation [1.2] requires. *Id.* (citing Ex. 1005 ¶¶ 207–208).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

d) [1.3]: “generating, by a processor of the OVER engine, an OVER file comprising a virtual representation of the credential that has been verified by an issuing agency to be an official representation of the credential, based on the information associated with the credential of the user;”

Petitioner argues that “Osborne teaches that the token server ‘[parse[s] the form to extract data fields and values from the form’ to generate a data record and data structure for a token (*OVER file*), as well as a ‘token identifier’ representing the token, which is provided to the user.” Pet. 20 (citing Ex. 1011 ¶¶ 47–48, Fig. 5; Ex. 1005 ¶ 209). Petitioner argues that “the token is a virtual representation of a credential, such as a credit card,” as shown in Figure 1B of Osborne, reproduced below.

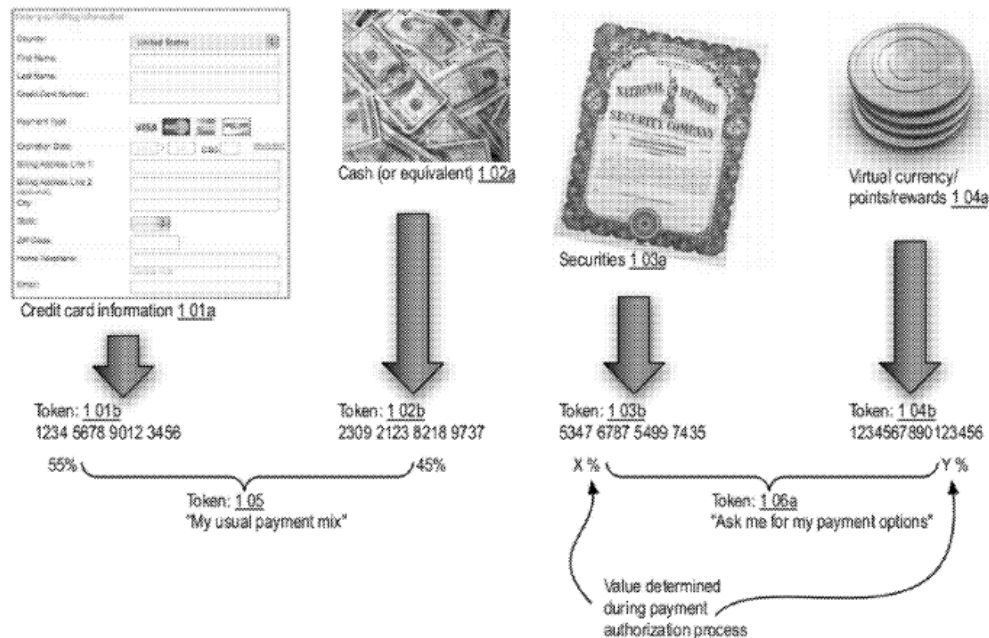


FIGURE 1B

Example: Payment Tokenization

Oborne’s Figure 1B is a block diagram illustrating aspects of payment tokenization in some embodiments of the PPT. Pet. 20–21; Ex. 1011, Fig. 1B.

Petitioner also points to Oborne’s disclosure that the token is “linked to credit card information” and used “in lieu of payment information” such as “card information.” *Id.* at 21 (citing Ex. 1011 ¶ 25). Thus, Petitioner contends, the token is a “virtual representation of the credential generated based on the information associated with the credential.” *Id.* (citing Ex. 1005 ¶ 210).

Petitioner also argues that “Oborne teaches or at least suggests that the token would be verified by the issuing agency as an official representation.” Pet. 21. Referencing its argument for limitation [1.1], Petitioner asserts that “Oborne teaches that any entity can operate as the token server, and it specifically identifies that the token may be provided by the credential’s ‘funding source’—that is, by the agency that issued the credential.” *Id.* at 21–22 (citing Ex. 1011 ¶¶ 29, 47–48, 53, 58). “By generating the token and

providing it to the user to represent the credential it has issued,” Petitioner contends, “the issuer would be verifying it to be an official representation of the credential.” *Id.* at 22 (citing Ex. 1005 ¶¶ 211–212). Additionally, according to Petitioner, one of ordinary skill “would have found it obvious for an issuer, upon generating the token, to verify that it was an official representation of the credential, using stored credential information identified by the token application form when generating the token,” because “verifying the token would be a routine step based on the credential data received and doing so would increase confidence that the token legitimately represented the credential.” *Id.*

Patent Owner responds by making three arguments: (1) that Osborne does not disclose a virtual representation that has been “verified by an issuing agency to be an official representation of the credential”; (2) that Petitioner improperly maps both the “OVER engine”/“processor” and “issuing agency” on the same token server in Osborne; and (3) that we should deny institution because Petitioner “does not meet its burden” by “proffering a claim construction [of ‘OVER file’] that neither [Petitioner] nor Dr. Shamos assert is correct.” Prelim. Resp. 23–33.

With respect to the first argument, Patent Owner asserts that the Petition cites five paragraphs from Osborne (paragraphs 29, 47, 48, 53, and 58), but none of those paragraphs “show an issuing agency providing tokens, let alone issuer verification as claimed in the ’973 Patent.” Prelim. Resp. 23–24 (citing Pet. 21–22; Ex. 1011 ¶¶ 29, 47, 48, 53, 58). Patent Owner also argues that Petitioner fails to meet its burden to show either how or why one of ordinary skill would have modified Osborne to teach this limitation, and that Petitioner offers only conclusory assertions that it would have been

“obvious for an issuer, upon generating the token, to verify” it, and that “verification was ‘a routine step.’” *Id.* at 26–28 (citing Pet. 22). Patent Owner further criticizes as “hindsight” Petitioner’s contention that adding verification “would increase confidence that the token legitimately represented the credential” and Dr. Shamos’s testimony that “forged or altered tokens in the marketplace would create problems.” *Id.* at 28 (citing Pet. 22; Ex. 1005 ¶ 212).

In its second argument, Patent Owner criticizes the Petition for arguing that “Oborne teaches an OVER . . . engine” in claim 1 because its “system includes a ‘token server’” and also pointing to the same token server to meet the “verified by an issuing agency” claim limitation. Prelim. Resp. 30–31 (citing Pet. 15–16, 20, 21, 23–24, 27, 29–31) (emphasis omitted). According to Patent Owner, the claim language “requiring the distinct ‘OVER engine’/‘processor’ and ‘issuing agency’ create[s] a presumption that they are distinct components of the invention.” *Id.* at 32. Patent Owner further contends that Petitioner does not “attempt to overcome [this] presumption by pointing to anything in the claims or written description showing the claimed ‘OVER engine’/‘processor’ and ‘issuing agency’ are one and the same.” *Id.*

Based on the present record, we determine that Petitioner has made a sufficient showing for this limitation for purposes of institution. In particular, we determine, based on the present record, that Oborne’s tokens qualify as “OVER files” because they include a virtual representation of one or more credentials, to be used for verification of those credentials, as we have preliminarily construed the term “OVER file.” *See* § II.A.1, *supra*. Petitioner has also made a sufficient showing that Oborne’s tokens are

generated by the PPT token server (the “OVER engine”), and that it would have been obvious for an issuer of the token to verify that the token is an official representation of the credential to provide added security.

We do not agree with Patent Owner that Osborne fails to disclose “an issuing agency providing tokens.” *See* Prelim. Resp. 24. To the contrary, Osborne discloses “a funding source from whom to obtain a token” (Ex. 1011 ¶ 29), explains that the “token requesting channel” may include an “issuer” (*id.* ¶ 47), that “the source of the token” may be an “issuer” (*id.*), that the token server may operate “in conjunction with” the “issuer” (*id.* ¶ 53), and that “the user’s payment token may be linked to one or more issuer financial institutions (‘issuers’), such as banking institutions, which issued the account(s) for the user linked to the payment token” (*id.* ¶ 58). *See also* Ex. 1005 ¶ 211. Based on these disclosures, Petitioner has sufficiently shown on this record that Osborne discloses that tokens can be provided by an issuer, such as a bank or financial institution. To the extent Patent Owner is asserting that the term “issuing *agency*” has additional requirements above and beyond an “issuer” that are not met by the Osborne’s disclosures, Patent Owner may flesh those arguments out at trial.

We also determine that Petitioner has sufficiently shown for purposes of institution that one of ordinary skill would have found it obvious for the issuer of Osborne’s tokens to verify the token. We find logical Petitioner’s contention, supported by Dr. Shamos’s testimony, that one of ordinary skill would have found it obvious for an issuer, after generating the token, to verify that it was an official representation of the credential using the credential information it already has, because such verification would increase confidence that the token legitimately represented the credential.

Pet. 22; Ex. 1005 ¶ 212. Dr. Shamos provides further support by testifying that this verification would be a “routine step,” and would mitigate the problems caused by “[t]he existence of unofficial, forged or altered tokens in the marketplace,” which “would create problems for both issuers and users.” Ex. 1005 ¶ 212. We find that these arguments, at this stage of the proceeding, provide sufficient “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” for purposes of institution. *KSR*, 550 U.S. at 418 (quoting *Kahn*, 441 F.3d at 988). Although Patent Owner criticizes these arguments as “hindsight,” Patent Owner fails to provide any reasoning explaining why one of ordinary skill would not have been motivated to have the issuer verify the token as Petitioner and Dr. Shamos contend. *See* Prelim. Resp. 28.

At this stage of the proceeding, we also do not agree with Patent Owner’s argument that Petitioner is improperly mapping both the “OVER engine” and “issuing agency” on the same token server in Osborne. *See* Prelim. Resp. 29–32. Petitioner maps the “OVER engine” to Osborne’s PPT token server (Pet. 15–17, 26–27), and maps the “issuing agency” to the entity that operates the token server (Pet. 21–22). The token server and the entity that operates it are not one and the same, any more than a bank and a server operated by the bank are the same thing. Therefore, we do not agree that Petitioner is mapping both the “OVER engine” and the “issuing agency” on the same disclosure in Osborne.

Finally, we disagree with Patent Owner’s argument that we should deny institution because Petitioner is purportedly offering a construction of “OVER file” that it does not believe is correct. *See* Prelim. Resp. 32–33. For the reasons discussed previously in Section II.A.1, we disagree with

Patent Owner’s contention that the construction proposed by Petitioner warrants denial of institution under the facts of this case.

Consequently, based on the present record, we determine that Petitioner has sufficiently shown that this limitation would have been obvious over Osborne.

- e) [1.4]: “transmitting, to the *OVER* file storage client device of the user, the *OVER* file in response to the *OVER* file generation request;”

Petitioner argues that “Osborne teaches that a ‘token may be provided as a data structure via HTTP(S) POST, as a file, as an attachment (e.g. via email), and/or provided to the client device for later use.’” Pet. 23 (citing Ex. 1011 ¶ 48). According to Petitioner, “[t]his transmission to the client device is performed after receiving the token application as shown in Fig. 5, with step 517 occurring as a step after receiving a token generation request from the user (shown in steps 508 and 515).” *Id.* (citing Ex. 1011 ¶¶ 40–41, 46–47), Fig. 5. Thus, Petitioner contends, Osborne “sends a token (*OVER* file) to the user’s device (*OVER* file storage client device of the user) in response to the *OVER* file generation request.” *Id.* (citing Ex. 1005 ¶ 214).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- f) [1.5]: “receiving, from an OVER file third-party client verifying device, a verifying request to verify that the OVER file transmitted to the user authenticates the user based on a Near-Field Communication (NFC) protocol-based communication associated with the OVER file on the OVER file storage client device of the user;”

Petitioner argues that “Oborne teaches this element as part of a merchant’s token arbitration request (*verifying request*) triggered by a purchase order request from a user (*based on an NFC protocol-based communication*).” Pet. 24. “Beginning with the NFC communication aspect,” Petitioner asserts, “a user communicates with a merchant server via a client (e.g., ‘mobile device’ or ‘point-of-sale terminal’) by ‘activating a RFID/NFC enabled hardware device.’” *Id.* at 24–25 (citing Ex. 1011 ¶¶ 35, 49, 93). According to Petitioner, “[t]his NFC interaction triggers a tokenized purchase with the merchant, *via a third-party client verifying device* (the merchant server, alone or in conjunction with the merchant’s point-of-sale device interacting with the user’s device via NFC).” *Id.* at 25 (citing Ex. 1011 ¶ 50). Thus, Petitioner contends, “Oborne’s NFC activation triggers the purchase to be performed with the token between the user’s and merchant’s devices,” and is therefore “an (*NFC*) ‘*protocol-based communication associated with the OVER file on the OVER file storage client device of the user.*’” *Id.* at 25 (citing Ex. 1005 ¶ 215).

Petitioner also argues that, “[t]o process the purchase order request, the merchant sever sends a ‘token arbitration request . . . to a token server,’” which reads on the “verifying request” of limitation [1.5]. Pet. 25 (citing Ex. 1011 ¶¶ 51–52). According to Petitioner, an example of the encoding of such a request is included in the code listing in Osborne’s paragraph 52, which references a `token_id` field representing a token. *Id.* at 25–26 (citing

Ex. 1005 ¶ 216). Referencing its argument for claim limitation [1.6], Petitioner further argues that “Oborne teaches that the ‘token server may parse the token arbitration request message’ and ‘determine whether the user token is authenticated.’” *Id.* at 26 (citing Ex. 1011 ¶¶ 25, 53–55). Thus, Petitioner contends, Oborne “teaches that the *OVER engine* (token server) receives the recited verifying request from a third-party device based on the recited NFC communication.” *Id.* (citing Ex. 1005 ¶ 216).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

g) [1.6]: “*verifying that the NFC protocol-based communication associated with the OVER file corresponds with the information associated with the credential of the user that is stored in the OVER engine, in response to the verifying request;*”

Petitioner argues that “Oborne teaches that the token server processes the token arbitration request triggered by the NFC communication by looking up the account number in a token database” and then “‘extract[s] the payment token from the message’” and “issues a query to the database ‘using the payment token as a search term in the query.’” Pet. 27 (internal citation omitted) (citing Ex. 1011 ¶ 53). “In response,” according to Petitioner, “the database provides ‘instructions for the token server on how to proceed with payment processing’” including “credential information such as user account numbers,” as shown in the code listing in paragraph 53 of Oborne. *Id.* at 27–28 (citing Ex. 1001 ¶ 53). Additionally, Petitioner asserts, the “token server may determine whether the user token is authenticated.” *Id.* at 28 (citing Ex. 1011 ¶¶ 54, 69). “[F]or example,”

Petitioner contends, if “no XML data is available associated with the payment token,’ this indicates that the ‘user has not signed up for payment tokenization services.’” *Id.* “In other words,” according to Petitioner, “the query determines whether the NFC communication ‘*associated with the OVER file*’ (token) ‘*corresponds with the information associated with the credential of the user stored in the OVER engine*’ (whether the database query for the token returns the user’s account details or not),” thereby “performing the recited step of verifying.” *Id.* at 28–29 (citing Ex. 1005 ¶ 217).

Additionally, Petitioner argues, Osborne teaches that further verification may optionally be performed, such as verification using biometric information, a user name and password, or an authentication chip communicating in proximity with the user’s card via RFID or similar technology. Pet. 29 (citing Ex. 1011 ¶¶ 26, 54). “Thus,” Petitioner contends, “Osborne teaches that an NFC communication’s correspondence with the user’s credential information may be verified using various complementary techniques.” *Id.* (citing Ex. 1005 ¶ 218).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- h) [1.7]: “transmitting, to the *OVER file* third-party client verifying device, an authentication message comprising an indication of whether the NFC protocol-based communication associated with the *OVER file* on the *OVER file* storage client device of the user corresponds to the information associated

with the credential of the user that is stored in the OVER engine;”

Petitioner argues that Osborne “teaches sending an authenticating message comprising an indicator” of whether the user token has been authenticated. Pet. 29–30. “For example,” Petitioner asserts, Osborne teaches that if “the token server determines that the user is not authenticated, e.g., 711, option ‘No,’ the token server may generate an ‘authentication fail message,” which is sent to the merchant server (mapped to the “third-party client verifying device”), as shown in steps 712a–b of Figure 7A. *Id.* at 30 (citing Ex. 1011 ¶ 69, Fig. 7A). According to Petitioner, “[t]his is an indication that the NFC communication is not associated with the stored user data.” *Id.* (citing Ex. 1005 ¶ 220). “On the other hand,” Petitioner contends, “[i]f the user token is authenticated, then the ‘token server may continue processing,” and “[t]he stored user account information is . . . used to procure payment authorization, and a message is sent to the merchant server indicating the result.” *Id.* at 31 (citing Ex. 1011 ¶¶ 61, 63, 70, Figs. 7B–7C). “Any of these messages,” according to Petitioner, “is an indicator that the token was authenticated, and thus that the NFC communication corresponded to the stored user credential information.” *Id.* (citing Ex. 1005 ¶ 221).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- i) [1.8]: “*requesting, by the processor of the OVER engine to the issuing agency, an agency authentication to validate the*

credential, wherein the issuing agency issued the credential of the user;”

[1.9]: “receiving, by the OVER engine, a status indicator and credential information associated with the credential; and”

[1.10]: “storing, by the OVER engine, the status indicator.”

Petitioner argues that Osborne teaches requesting authentication and receiving a status indicator in at least two ways. Pet. 31. First, Petitioner asserts, “when adding a user’s card to a wallet for Osborne’s system, Osborne teaches verifying the pay card’s information 1252 (such as name, account number, etc.), including ‘contacting the issuer of the pay card for confirmation of the decoded information 1252 and any other relevant information.’” *Id.* at 31–32 (citing Ex. 1011 ¶ 108). “In light of this teaching,” Petitioner contends, one of ordinary skill “would have found it obvious for the OVER engine to request authentication from a credential’s issuing agency and receive a status indicator from the agency indicating whether the credential is valid, along with other relevant credential information.” *Id.* at 32 (citing Ex. 1005 ¶ 222).

Second, according to Petitioner, “Osborne teaches that, when a tokenized transaction is performed, the token or pay network server contacts ‘issuer server(s) corresponding to the payment token,’” and the issuer server “determine[s] whether the user can pay for the transaction using funds available in the account” and provides either an “authorization fail” message or a “notification of successful authorization.” Pet. 32 (citing Ex. 1011 ¶¶ 57–58, 61–63). Petitioner asserts that these authorization success or fail messages would be “status indicators (e.g., indication of a valid credential) and credential information associated with the credential (e.g., conformation of sufficient funds), received based on a validation request to validate the

credential's coverage of a transaction[]." *Id.* (citing Ex. 1005 ¶ 223). Relying on Dr. Shamos, Petitioner contends that one of ordinary skill "would have employed such an arrangement even if the token server and issue server were operated by the same party," because "such authorization and responses correspond to standard procedures used for transaction processing in a payment network, allowing Osborne's system to be integrated into a system for traditional payment processing in a straightforward and predictable way." *Id.* at 32–33 (citing Ex. 1005 ¶ 223).

Additionally, Petitioner argues that storing the status indicator would have been obvious because "Osborne teaches generating 'a transaction data record' for the pay network server to 'store the details of the transaction and authorization,'" and that "the token server may be . . . a pay network server." Pet. 33 (citing Ex. 1011 ¶¶ 39, 62). According to Petitioner, one of ordinary skill "would view these teachings as suggesting that the token server can store a received status indicator." *Id.* As a practical matter, Petitioner contends, "to properly use a received status indicator (e.g., an indication that a transaction for a credential was authorized or not authorized, or an indication that an issuer did or did not validate a new credential)," one of ordinary skill "routinely would have stored the status indicator during normal token server operations." *Id.* (citing Ex. 1005 ¶ 224).

Patent Owner does not present arguments regarding this limitation at this stage of the proceeding. *See generally* Prelim. Resp.

We determine that, on the record before us, Petitioner's cited evidence sufficiently supports its contentions regarding this limitation.

j) Summary for Claim 1

For the foregoing reasons, and based on the present record, Petitioner's cited evidence and reasoning demonstrates a reasonable likelihood that Petitioner would prevail in its contentions regarding claim 1.

3. Independent Claim 16

Petitioner contends that independent claim 16 would have been obvious over Osborne, relying largely on the same arguments as for independent claim 1. Pet. 10, 38–39. Patent Owner also relies on the same arguments for claim 16 as for claim 1. Prelim. Resp. 22–32. For the reasons discussed above with respect to claim 1, we determine that Petitioner has demonstrated a reasonable likelihood that claim 16 would have been obvious over Osborne.

4. Dependent Claims 2, 4–7, and 17

Petitioner asserts that dependent claims 2, 4–7, and 17, which depend from claims 1 or 16, would have been obvious over Osborne. Pet. 10, 33–38, 39. Patent Owner relies on its arguments for independent claim 1 for these dependent claims. Prelim. Resp. 22–32. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 2, 4–7, and 17 would have been obvious over Osborne.

E. Ground 2: Obviousness of Claims 3 and 8–15 Over Osborne in View of Purves

Petitioner presents arguments that claims 3 and 8–15 would have been obvious over the combination of Osborne and Purves. Pet. 10, 40–51. Patent Owner does not separately address these claims at this stage of the proceeding. Prelim. Resp. 22–32. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that

claims 3 and 8–15 would have been obvious over the combination of Osborne and Purves.

F. Ground 3: Obviousness of Claims 1, 3, 5–8, 10, and 12–15 over Stafford in View of Purves

Petitioner contends that claims 1, 3, 5–8, 10, and 12–15 would have been obvious over the combination of Stafford and Purves. Pet. 51–75. To support its contentions, Petitioner provides explanations as to how the combination of the prior art teaches each claim limitation and provides rationale to combine the references. *Id.* Patent Owner asserts that the claims are not obvious under this ground. Prelim. Resp. 33–41. In particular, Patent Owner alleges that the combination of Stafford and Purves fails to teach limitation [1.3] and Petitioner fails to establish a rationale to combine the references. *Id.*

As we discuss further below, although we have determined that Petitioner has met the threshold for institution of review, we address certain aspects of this ground for guidance purposes.

We begin our discussion with brief summaries of Stafford and Purves and then address certain issues related to the challenge to claim 1.

1. Overview of Stafford (Ex. 1012)

Stafford is directed to “a system [] for storing, validating, and disseminating credential information about an entity.” Ex. 1012, code (57). Stafford’s system “generates data representing at least part of the credential information and a data representation of at least part of a document supporting that information and stores the credential information and data representation in a database [] in an encrypted form.” *Id.* Figure 2, reproduced below, depicts “a flow chart illustrating a process for preparing

information for release to a third party in an embodiment of the present invention.” *Id.* ¶ 31.

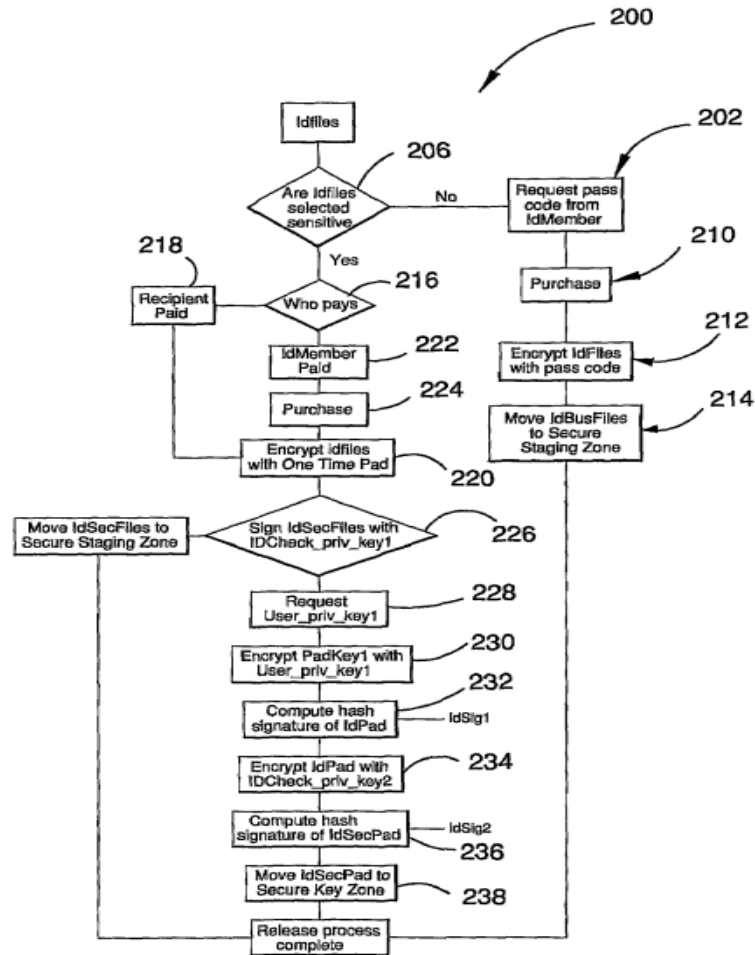


FIGURE 2

Figure 2, above, “shows a flowchart of a method of releasing credential information stored in the Secure [Z]one (120) to a party (called the recipient).” Ex. 1012 ¶ 73. Specifically, Figure 2 details the steps of process 200 for releasing securely stored credential information from the Secure Zone to a Secure Staging Zone where the credential can be released to the entity that owns the credential information or another recipient. *Id.* ¶¶ 40, 84, 85, 103–106. The process starts by digitally signing original files,

and additional steps are used to secure information that contains sensitive information. *Id.* ¶¶ 86–88, 93–105. For sensitive information, “a highly secure symmetric or similar encryption process” is used that employs one-time pads and hash values. *Id.* ¶¶ 88, 102–106.

Figure 3, reproduced below, depicts a method of transmitting released data to a third party in an embodiment of the invention. Ex. 1012 ¶ 32.

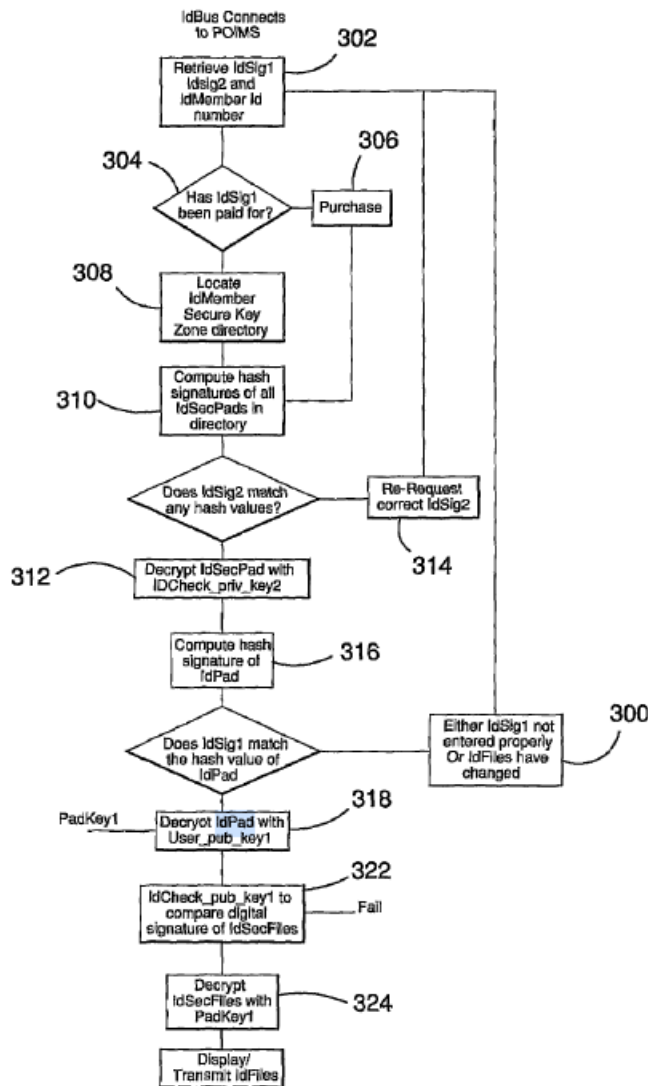


FIGURE 3

Figure 3, above, shows the steps for allowing a third party to obtain secured credentials. Ex. 1012 ¶¶ 107–125.

2. *Overview of Purves (Ex. 1013)*

Purves is directed to a wallet service enrollment platform (“WSEP”). Ex. 1013, code (57). Purves uses a platform that “facilitates the enrollment of payment accounts in a consumer’s virtual wallet.” *Id.* In Purves, a “consumer may be logged into their payment account issuer’s web site” and designate “payment accounts for enrollment in a virtual wallet.” *Id.* The issuer can then share relevant information with the virtual wallet provider to facilitate the enrollment of the accounts into the virtual wallet. *Id.* In Purves, “[t]he WSEP may also be configured to facilitate the creation and funding of pre-paid accounts in a consumer’s virtual wallet.” *Id.* A Quick Response (QR) code scan may be used to trigger a wallet account connection or login during a point-of-sale interaction. *Id.* ¶ 64.

3. *Discussion of Certain Issues for Claim 1*

As discussed, we have found sufficient basis for institution of trial based upon Petitioner’s challenge under Osborne. However, in order to provide guidance to the parties, we address some issues on this ground for claim 1 on a preliminary basis, focusing on issues related to limitation [1.3].

Limitation [1.3] recites “generating, by a processor of the OVER engine, an OVER file comprising a virtual representation of the credential that has been verified by an issuing agency to be an official representation of the credential, based on the information associated with the credential of the user.” Ex. 1004, 22:1–5.

Petitioner asserts that limitation [1.3] is taught by Stafford in combination with Purves because in Stafford, “[t]he key signatures Stafford’s system generates to release sensitive files can comprise hash

values (IdSig1 and IdSig2) provided to the user.” Pet. 58 (citing Ex. 1012 ¶¶ 97–99). Petitioner contends that:

The release of the credential is authorized by comparing the hash values to the IdSecPad and IdPad corresponding to the credential to determine if they match. [Ex. 1012 ¶¶ 166–122]. *A hash value thus acts as a virtual credential representation of the stored credential, derived based on the information associated with the credential, so generating the hash values or similar key signature corresponds to the step of generating the OVER file.* Ex. 1005 ¶ 295.

Pet. 58 (emphasis added).

Petitioner argues that “Stafford teaches that its encrypted credentials may be verified by the issuer and may include storing an image of the credential (e.g., a scanned copy).” Pet. 58–59 (citing Ex. 1012 ¶¶ 62, 65, 67). “However,” Petitioner asserts, “to the extent that Stafford does not expressly teach that the key signature files sent to the user include a virtual representation verified by the issuing agency,” Purves would teach the verification. *Id.* at 59 (citing Ex. 1005 ¶ 296 (emphasis omitted)).

Petitioner contends that Purves teaches that a user device “may be sent an image of a credential such as a credit card, to conveniently represent a real credential,” where confidential information may be obscured. Pet. 59 (citing Ex. 1013 ¶¶ 102, 108–109, 122). This card image, according to Petitioner, is from an issuer. *Id.* (citing Ex. 1013 ¶ 85). Petitioner argues that the “representative image provided ‘from an issuer’ would be *verified by the issuing agency to be an official representation*, as would an image produced from an actual credential, since an actual credential naturally represents itself.” *Id.* (citing Ex. 1005 ¶ 297).

Petitioner asserts that, in view of Purves’s teaching to provide user devices with images representing a credential, “it would have been obvious

to use similar images in the context of Stafford.” Pet. 59. Petitioner argues that providing an image of the user’s credential, with optionally-obscured confidential information, along with the encoded key signature would “remind users which credential the key signature represents and enable quick selection from among a plurality of options available on the user’s device.” *Id.* at 59–60 (citing Ex. 1013 ¶¶ 85, 122). According to Petitioner, this image would be “a virtual representation verified by the issuer as being an official representation of the credential.” *Id.* at 60 (citing Ex. 1005 ¶ 298).

Limitation [1.3] requires the generation of “an OVER file comprising a virtual representation of the credential.” In the discussion of claim construction above, we preliminarily determined that the term “OVER file” encompasses a virtual representation of one or more credentials, to be used for verification of those credentials. *See* § II.A.1, *supra*. Petitioner asserts that Stafford’s hash value “acts as a virtual credential representation of the stored credential” and is “*derived based on the information associated with the credential.*” Pet. 58 (emphasis added). Our preliminary view at this juncture is that Stafford’s hash values are not a virtual representation associated with the credential because it does not appear that its hash values are derived based on information associated with the credential.

Stafford discloses that in its process for managing sensitive documents and information, at Step 226 as shown in Figure 2, encrypted sensitive files are digitally signed using IdCheck_priv_key1 (the system’s private signature key), and are moved to the Secure Staging Zone. *See* Ex. 1012 ¶¶ 34, 94. At Steps 232 and 236, hash signatures IdSig1 and IdSig2 are computed, which are components of the key signature, and which

are provided to the entity that owns the credential information. *Id.* ¶¶ 40, 97, 99. IdSig1 is a hash value of IdPad, which is an encrypted one-time pad or symmetric key by User_priv_key_1 (the private key of an entity that owns the credential information). *Id.* ¶¶ 40, 46, 51, 95, 97. IdSig2 is a hash value of IDSecPad, which is an encrypted one-time pad or a symmetric key by User_priv_key1 and IdCheck_Pub_key2. *Id.* ¶¶ 46, 99. As part of the process to get a credential released, hash value IdSig2 is checked to see if there is a match to hashes of all IDSecPads in the directory (Step 310 of Figure 3 of Stafford) and, if there is a match, then IdSecPad is decrypted to retrieve the IdPad, which is then hashed and compared to IdSig1 (Steps 312 and 316). *Id.* ¶¶ 119–121. If this is successful, PadKey1 (another one-time key) may be retrieved and sent to the Secure Staging Zone servers, allowing connection to the directory of the entity owning the credential information. *Id.* ¶¶ 123–124. There is further comparison of hash values, and if successful, PadKey1 may be used to decrypt the credential, and the sensitive credential may be transmitted. *Id.* ¶¶ 124–126.

At this juncture and on a preliminary basis, we do not agree with Petitioner that Stafford’s hash values IdSig1 and IdSig2 “act[] as a virtual credential representation of the stored credential.” *See* Pet. 58. Our reading of Stafford is that hash signatures are derived values from one-time pads, which may be used to encrypt the credential, but the pads do not appear to include any information related to the credential or its contents. Further, comparisons of derived hash values may lead to a location where a credential is stored in a secure manner—but, our preliminary view is that any alleged “association” with the credential appears to be extremely attenuated, at best.

Petitioner takes Stafford's teaching of a key signature, which is comprised of hash values, and then asserts that it would have been obvious to provide an image of the user's credential along with the encoded key signature based upon Purves's teachings. Pet. 58–60. Petitioner's rationale to combine Stafford with Purves's images is that such images “would improve ease-of-use and reduce user error by providing users images matching the credentials the user seeks to provide to third parties.” Pet. 7–8, 53–54, 59–60 (citing Ex. 1005 ¶¶ 85, 122, 160–163, 284–286). Patent Owner argues Petitioner does not establish a motivation to modify Stafford's credential release platform with Purves's wallet enrollment system. Prelim. Resp. 39–41. Patent Owner contrasts Purves's teaching of a virtual wallet containing different payment methods and Stafford's one-time key signatures, and argues that because Petitioner never established that there would ever be selection between Stafford's one-time-use signatures there is no motivation for the combination. *Id.*

We recognize the application of “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. However, one must “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 418. “It is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.” *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (citing *In re Gorman*, 933 F.2d 982, 987 (Fed. Cir. 1991)). At this juncture and on a preliminary basis, we agree with Patent Owner that Petitioner has not set forth a sufficiently persuasive rationale to combine Stafford and Purves. As Patent Owner points out, Stafford teaches the use of

one-time key signatures, while Purves is directed to a virtual wallet with multiple payment accounts. Moreover, Petitioner relies on Stafford's teachings relating to managing sensitive documents where extensive encryption is used to protect specific documents, and in this context, we question the rationale to add elements of Purves which could compromise the security of the key signature. For example, the addition of an image of the user's credential, even with some obscured confidential information, may add some risk to the secure handling of the key signature.

We invite the parties to provide further briefing during trial on Stafford's alleged teaching of an OVER file comprising a virtual representation of the credential and the rationale to combine Stafford and Purves.

4. Independent Claim 8

Petitioner contends that independent claim 8 would have been obvious over Stafford and Purves, relying largely on the same arguments as for independent claim 1. Pet. 10, 69–73. Patent Owner also relies on the same arguments for claim 8 as for claim 1. Prelim. Resp. 33–41. For the reasons discussed above with respect to claim 1, Petitioner's arguments and evidence for claim 8 under this ground appear to be deficient as well.

5. Dependent Claims 3, 5–7, 10, and 12–15

Petitioner asserts that dependent claims 3, 5–7, 10, and 12–15, would have been obvious over Stafford in view of Purves. Pet. 10, 66–69, 73–75. Patent Owner relies on its arguments for independent claim 1 for these claims. Prelim. Resp. 33–41. Our comments above regarding claim 1 also apply to these dependent claims. Because Petitioner's arguments and evidence for these claims do not cure the shortcomings identified above for

claim 1, the showing for these claims also appears to be deficient. Nevertheless, as noted *supra*, because Petitioner demonstrates a reasonable likelihood of success in demonstrating that at least one claim of the '973 patent is unpatentable, we institute review on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a).

G. Ground 4: Obviousness of Claims 2, 4, 9, 11, 16, and 17 Over Stafford in View of Purves, and Neafsey

Petitioner presents arguments that claims 2, 4, 9, 11, 16, and 17 would have been obvious over the combination of Stafford, Purves, and Neafsey. Pet. 10, 75–80. Patent Owner does not separately address these claims at this stage of the proceeding. Prelim. Resp. 33–41. As noted *supra*, because Petitioner demonstrates a reasonable likelihood of success in demonstrating that at least one claim of the '973 patent is unpatentable, we institute review on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a).

H. Discretion to Deny Institution Under § 35 U.S.C. 325(d)

Patent Owner contends that the Board should deny institution under 35 U.S.C. § 325(d) because the Petition “provides nothing beyond the art already considered by the Examiner during multiple rounds of prior art searching and rejections.” Prelim. Resp. 41.

1. Framework

In evaluating the exercise of discretion to deny institution under Section 325(d), the Board uses the following two-part framework: (1) determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either

condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”).

Within this two-part framework, the Board considers a number of non-exclusive factors in evaluating whether to exercise its discretion under § 325(d). *See Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first para.) (“*Becton, Dickinson*”); *see also Advanced Bionics* at 9–11. The factors set forth in *Becton, Dickinson* are as follows:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art or patent owner distinguishes the prior art;
- (e) whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18. *Becton, Dickinson* factors (a), (b), and (d) relate to whether the art or arguments presented in the Petition are the

same or substantially the same as those previously presented to the Office. *Advanced Bionics*, Paper 6 at 10. The art or arguments presented in the Petition are not “substantially the same” as those previously presented to the Office when there are differences between them that are material to the Office’s prior consideration of the art and arguments. *Wolfspeed, Inc. v. Trs. of Purdue Univ.*, IPR2022-00761, Paper 13 at 7–8 (Vidal Mar. 30, 2023) (“*Wolfspeed*”).

Factors (c), (e), and (f) “relate to whether the petitioner has demonstrated a material error by the Office” in its prior consideration of that art or arguments. *Advanced Bionics*, Paper 6 at 10. Only if the same or substantially the same art or arguments were previously presented to the Office do we consider whether petitioner has demonstrated a material error by the Office. *Id.* “At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.* at 9.

2. *Whether the Same or Substantially the Same Art or Arguments Were Previously Presented*

There is no dispute that the Osborne, Stafford, Purves, and Neafsey references asserted in this proceeding were not previously presented to the Office. Pet. 5, 81; Prelim. Resp. 43–45. Patent Owner argues that the art asserted by Petitioner is materially similar to and cumulative of the art considered during prosecution. Prelim. Resp. 43. Specifically, Patent Owner argues that the Examiner concluded that the Kang⁴ and Bhatnagar⁵ references did not teach the claimed verification of a “virtual representation”

⁴ Kang, US 2009/0307756 A1, published Dec. 10, 2009 (Ex. 2005).

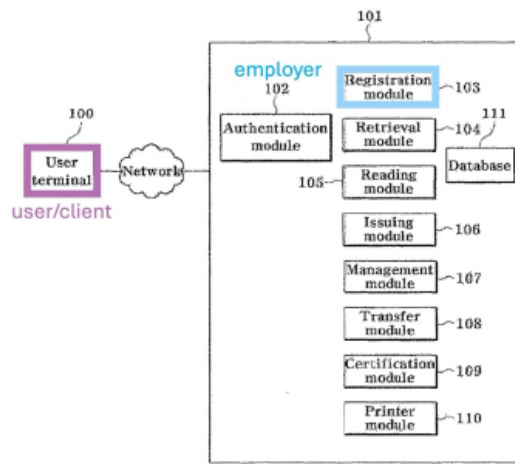
⁵ Bhatnagar et al., US 2012/0240204 A1, published Sep. 20, 2012 (Ex. 2006).

of a credential by an issuing agency,⁶ and, similarly, the Osborne and Stafford references also fail to teach verification of a “virtual representation” of a credential by an issuing agency. *Id.* at 43–45; *see also* Ex. 1008, 25–26 (Examiner’s Reasons for Allowance), 49–60, 130, 155–160. In support, Patent Owner provides the following annotations of Kang’s Figure 1, Bhatnagar’s Figure 1, Osborne’s Figure 4, and Stafford’s Figure 1.

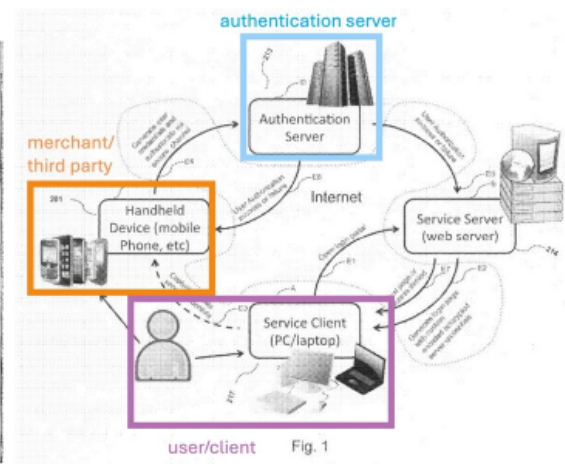
⁶ The Examiner also identified additional limitations not taught by Kang and Bhatnagar, that are not addressed by Patent Owner. Ex. 1008, 25–26.

References Considered by Examiner

FIG. 1

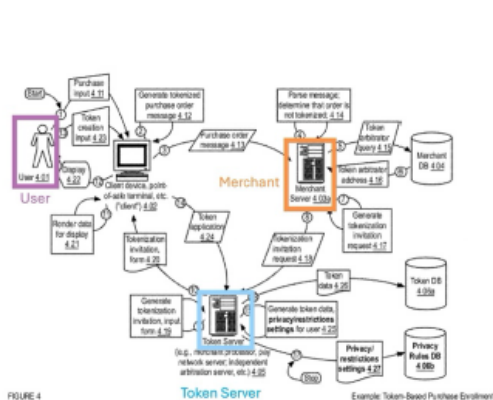


Kang
EX2005, Fig. 1 (annotated)

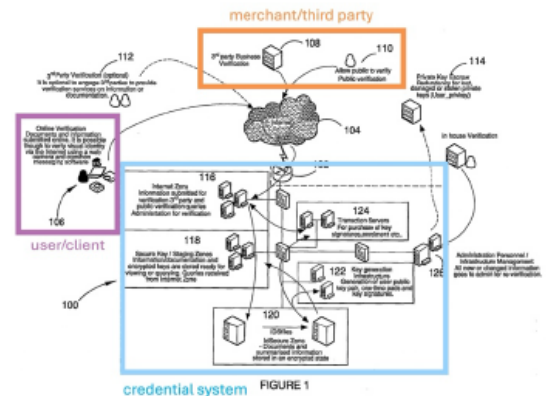


Bhatnagar
EX2006, Fig. 1 (annotated)

References In Visa's Petition



Oborne
EX1011, Fig. 4 (annotated)



Stafford
EX1012, Fig. 1 (annotated)

Id. at 44. Depicted above are Kang’s Figure 1, Bhatnagar’s Figure 1, Osborne’s Figure 4, and Stafford’s Figure 1, with Patent Owner’s color-coded annotations in purple, blue, and orange.

Patent Owner similarly argues that the Examiner concluded that the Ohara⁷ and Chu⁸ references did not teach the same claim limitation during prosecution of US 9,251,531, to which the '973 patent is terminally disclaimed. Prelim. Resp. 43 (citing Ex. 1007, 20; Ex. 1010, 39). Patent Owner further argues that Petitioner's arguments overlap with the disclosure of the references considered during prosecution because the Petition does not "fill in the gap or present any new reference that shows this claimed feature." *Id.* at 45.

On this record, we disagree with Patent Owner. Aside from asserting that each of the references fails to teach the same claim limitation, Patent Owner does not provide meaningful argument as to the similarities of the references or arguments. Although Patent Owner provides color-coded annotations of certain figures from Kang, Bhatnagar, Osborne, and Stafford, Patent Owner does not provide further explanation as to these annotated figures, the references themselves, or the similarities of the references. For example, Patent Owner annotates in the color blue Kang's "Registration module 103," Bhatnagar's "Authentication Server," Osborne's "Token Server," and various components of Stafford's Figure 1, but provides no explanation as to how these components are substantially the same, particularly with respect to the asserted missing limitation. Moreover, the fact that these figures may show some basic commonalities, e.g., a user or client terminal, does not establish that the same or substantially the same prior art was presented to the Office. Patent Owner also does not provide

⁷ Ohara, US 2007/0208665 A1, published Sep. 6, 2007 (Ex. 2002).

⁸ Chu, US 8,540,149 B1, issued Sep. 24, 2013 (Ex. 2003).

any substantive comparison of the references asserted in this proceeding with Ohara and Chu.

As set forth above, at this preliminary stage, we determine that Petitioner has sufficiently shown that Osborne teaches “a virtual representation of the credential” of a user, and renders obvious verifying this virtual representation by an “issuing agency.” Patent Owner, however, does not demonstrate that Kang or Bhatnagar include comparable disclosures. Consequently, Patent Owner has not shown that Osborne is cumulative of Kang or Bhatnagar. Additionally, Petitioner relies on the combination of Stafford and Purves to teach “a virtual representation of the credential that has been verified by an issuing agency to be an official representation of the credential,” (Pet. 58–60), and Patent Owner does not address the Purves reference or assert that this combination is cumulative of Kang and Bhatnagar.

Therefore, Patent Owner presents no meaningful explanation of how the prior art relied upon in the Petition, in the manner presented by Petitioner, is cumulative of the prior art examined during prosecution. Patent Owner’s argument that substantially the same arguments were presented to the Office fails for the same reasons. Accordingly, we are not persuaded by Patent Owner’s arguments. Because Patent Owner has not demonstrated that the first part of the *Advanced Bionics* framework is met, we need not consider whether the second part of the framework is met. *Advanced Bionics*, Paper 6 at 10.

3. *Conclusion on Discretionary Denial Under § 325(d)*

For the above reasons, we decline to deny the Petition under 35 U.S.C. § 325(d).

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the '973 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (indicating that a decision whether to institute an *inter partes* review “require[s] a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–17 of the '973 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '973 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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