



Visa Inc. v. Cortex MCP, Inc.

Patent Owner's Demonstratives

IPR2024-00486, -488, -489, -490

U.S. Patent Nos. 9,251,531; 9,954,854; 10,749,859; 11,329,973

May 6, 2025

Judges Cass, McShane, and Szpondowski

Issues

Issue	Visa failed to:
1	Show any art meets Visa's construction of issuing agency verification (Grounds 1-4)
2	Show Osborne taught issuing agency verification of an alleged OVER file (Grounds 1-4)
3	Identify an OVER engine in Osborne (Grounds 1-4)
4	Show Stafford's key signatures are based on information associated with the credential (Grounds 5-6)
5	Show Stafford taught issuing agency verification (Grounds 5-6)
6	Show motivation to add Purves' card images to Stafford's key signatures (Grounds 5-6)

Source: 486-POR at 8-67, Sur-Reply at 1-28; 488-POR at 10-59, Sur-Reply at 1-23;
489-POR at 9-61, Sur-Reply at 1-26; 490-POR at 9-60, Sur-Reply at 1-25
Demonstrative Exhibit - Not Evidence

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Source: 486-POR at 10-30, Sur-Reply at 3-8; 488-POR at 12-31, Sur-Reply at 3-7;
489-POR at 11-30, Sur-Reply at 3-8; 490-POR at 11-30, Sur-Reply at 3-8
Demonstrative Exhibit - Not Evidence

Petition Required Verification of Virtual Representation

C. “...verified by an issuing agency...”

Claims 1 and 15 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.” During prosecution, Applicant argued that this phrase requires that the issuing agency verify that the *virtual representation* is an official representation of the credential. *See* EX1007, 44-45; *see also id.*, 40 (pointing to disclosure found at EX1001, 3:50-4:6, 4:25-41, 5:7-25, 6:12-36).

Accordingly, 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. EX1005, ¶¶112-15.

Claim Language Requires Verification of Virtual Representation

What is claimed is:

1. A computer-implemented method comprising:
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;
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;
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;

Visa's Reply Abandons Its Petition Construction

C. “verified by an issuing agency”

PO argues that an example in the specification corresponds to this limitation.

POR, 12-13 (citing EX1001, 6:22-27, 6:44-52). In this example, the OVER engine checks a driver's license number against the DMV's database. EX1001, 6:22-47.

The database's response includes additional information (e.g., a name/address and credential image) and indicates “the validity of the requested credential.” *Id.*, 6:47-

54. PO thus admits that a virtual representation of the credential may be “verified by an issuing agency” by checking credential data against an issuing-agency database. Dr. Malek made similar admissions. EX1047, 37:24-41:1 (limitation encompasses “some kind of check”), 41:2-22 (issuer need not send verification message). These admissions confirm that the references satisfy this limitation.

Infra, §III.A.1.

Specification Confirms Example Verifies the Virtual Representation

After the necessary information has been entered to generate an OVER File credential, either manually or through an automated process such as scanning, the generating device may contact an application gateway **124** to deliver an OVER File generation request to an OVER File database **128**. The OVER File database **128** may comprise an OVER File generation and verification engine **8**. The application gateway may request **126** generation of an OVER File and verification of the generated OVER File credential. The OVER File data-

...

containing the entered credential information. In some embodiments, the OVER file may be generated by the issuing agency database **130** and sent to the OVER File database **128** for storage and distribution to the user device. The issuing agency may also provide a status indicator for the generated OVER File credential.

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489-POR at 11-30, Sur-Reply at 3-8; 490-POR at 11-30, Sur-Reply at 3-8
Demonstrative Exhibit - Not Evidence

All Claims Require Issuing Agency Verification

What is claimed is:

1. A computer-implemented method comprising:
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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;
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;

Osborne Did Not Disclose Issuing Agency Verification

Petition:

linked to the payment token.”). By generating the token and providing it to the user to represent the credential it has issued, the issuer would be verifying it to be an official representation of the credential. EX1005, ¶¶240-42.

Reply:

Regardless, Visa explained that the issuer “verifies” that the token is an official representation of the credential by generating the token and providing it to the user. 486-Pet., 22-23; EX1005, ¶¶240-42.

Osborne Did Not Disclose Issuing Agency Verification

Reply:

PO also inadvertently concedes Osborne teaches this limitation by admitting that the virtual representation has been “verified by the issuing agency” if credential data was checked against an issuing-agency database. *Supra*, §II.C; POR, 12-13. Yet Osborne teaches this same type of check. For example, Osborne

Dr. Shamos:

18 Q. Okay. So you agree then that "verifying
19 that the credential data supplied by the user" is
20 correct, it does not meet your construction of
21 "verified by an issuing agency" supplied in your
22 opening declaration in these IPRs; correct?

■ ■ ■

2 THE WITNESS: I think that's right.

Issuing Agency Verification Would Not Have Been Obvious

Moreover, as Dr. Shamos explains, a POSA 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 the credential information identified by the token application form when generating the token, since 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.*

Applying Common Sense in an Obviousness Analysis

DSS Tech. v. Apple Inc., 885 F.3d 1367, 1374 (Fed. Cir. 2018):

1. “[C]ommon sense is typically invoked to provide a known *motivation to combine*, not to supply a missing claim limitation.”
2. Common sense is invoked “to fill in a *missing* limitation only when ‘the limitation in question was unusually simple and the technology particularly straightforward.’”
3. “[R]eferences to ‘common sense’—whether to supply a motivation to combine or a missing limitation—cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when dealing with a limitation missing from the prior art references specified.”

Evidence: NOT Unusually Simple or Particularly Straightforward

733 F.3d 1355, 1356, 1363 (Fed. Cir. 2013)). Second, we have invoked common sense to fill in a *missing* limitation only when “the limitation in question was unusually simple and the technology particularly straightforward.” *Id.* at 1362 (citing *Perfect Web*, 587 F.3d at 1326). “Third, our cases repeatedly

DSS Tech. v. Apple Inc., 885 F.3d 1367, 1374 (Fed. Cir. 2018)

Dr. Malek	Dr. Shamos
EX2009 ¶¶ 63-87	

Visa Had to Provide Reasoned Analysis and Evidentiary Support

DSS Tech. v. Apple Inc., 885 F.3d 1367, 1374 (Fed. Cir. 2018): *Perfect Web*, 587 F.3d at 1326). “Third, our cases repeatedly warn that references to ‘common sense’—whether to supply a motivation to combine or a missing limitation—cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when dealing with a limitation missing from the prior art references specified.” *Id.*

Moreover, as Dr. Shamos explains, a POSA 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 the credential information identified by the token application form when generating the token, since 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.*

No Reasoned Analysis or Evidentiary Support

Dr. Shamos:

241. Moreover, a POSITA 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 the credential information identified by the token application form when generating the token. The issuer of a token representing a payment credential would logically ensure that the token accurately represented the credential. The existence of unofficial, forged or altered tokens in the marketplace would create problems for both issuers and users. It would be a routine step to verify that the token was an official representation of the credential based on the credential data received and doing so would increase confidence that the token legitimately represented the credential.

Dr. Shamos: Industry Already Solved This Problem

Dr. Shamos:

118. Creating identity documents in the digital world was challenging for several reasons: (1) it was not easy to determine if a digital credential was issued by a recognized authority; (2) a digital credential can easily be copied, forged, or altered and it is difficult to issue a “challenge” to a remote networked user to prove that they are the person named in the credential. An eavesdropper who obtains both the credential and the answer to the challenge can later pretend successfully to be the person named in the credential.

Dr. Shamos:

120. A solution to (2) is to require the presenter of the credential to furnish additional information to prove that they are the person named in the credential. This protects against credentials being copied or stolen. In the banking industry, this was done starting in 1967 by requiring the user to enter a PIN at an ATM machine. A thief who stole an ATM card would not be able to use it without knowing the PIN. PINs are still used in the credit/debit card industry even though embedded chips and NFC communication have replaced magnetic stripes.

Oborne Already Has User Authentication

on issuers to contact for payment. In some implementations, the token server may determine whether the user token is authenticated, e.g., 710. 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,” e.g., 712a, and initiate an error-handling routine and/or a user enrollment routine, e.g., 712b, such as the PTE 500 component discussed above in the description with reference to FIG. 5. If the token server determines that the user is authenticated, e.g., 711, option “Yes,” the token server may continue processing at 713a. The token server may generate a query 713a

Using Common Sense Requires a Reasoned Analysis

supported by evidence and a reasoned explanation. In cases in which “common sense” is used to supply a missing limitation, as distinct from a motivation to combine, moreover, our search for a reasoned basis for resort to common sense must be searching. And, this is particularly true where the missing limitation goes to the heart of an invention.

Arendi S.A.R.L. v. Apple, 832 F.3d 1355, 1363 (Fed. Cir. 2016)

Visa's Reply Pivots to Improper and Incorrect Construction

Ultimately, PO's argument does not pass the smell test. Even setting aside Osborne's express teachings (*supra*, §III.A.1) and the myriad logical reasons for verifying tokens (EX1005, ¶¶240-41), PO's suggestion that the token server would provide tokens without even checking that they correspond to a valid credential defies credulity. Even PO's expert was unwilling to endorse this view. EX1047, 46:11-49:1 (evasive responses regarding issuance of unverified tokens), 50:20-51:7 (linking token to valid account "possibly" desirable).

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Source: 486-POR at 30-34, Sur-Reply at 8-10; 488-POR at 39-43, Sur-Reply at 10-12;
489-POR at 30-34, Sur-Reply at 8-10; 490-POR at 30-34, Sur-Reply at 8-10
Demonstrative Exhibit - Not Evidence

Visa's Petition Identifies the PPT Apparatus

2. Element 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;

Osborne teaches an *OVER generation and verification engine (OVER engine)*. Osborne teaches a “payment privacy tokenization apparatus” or “PPT” apparatus to “transform payment token-based purchase orders, via PPT components, into multi-issuer purchase payment funds transfers.” EX1011, ¶¶22, 166. This system includes a “token server,” also referred to as a “token arbitrator,”

...

EX1011, Fig. 4. As addressed in more detail below for elements 1.3 and 1.6, this apparatus generates and verifies OVER files. *Infra* §§IV.B.4, IV.B.7. Osborne thus discloses the recited OVER engine. EX1005, ¶¶232-33.

Visa's Reply Identifies the Token Server

B. Visa Showed that Osborne Teaches the OVER Engine

PO unconvincingly argues that Visa fails to identify the OVER engine in Osborne. POR, 30-33. The petition shows that the PPT's token server satisfies all requirements of the OVER engine. PO attempts to sow confusion by selectively editing the petition, claiming it says "Osborne 'discloses the recited OVER engine' because 'this [PPT] apparatus generates and verifies OVER files.'" POR, 30. But the unaltered sentence reads "[a]s addressed in more detail below for elements 1.3 and 1.6, this apparatus generates and verifies OVER files" (Pet., 18 (emphasis added)), and the cited discussion explains how the PPT's token server satisfies

The Token Server Does Not Meet All Claim Requirements

7. Element 1.6

verifying that the scan 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;

Oborne teaches that the token server processes the token arbitration request triggered by the scan (discussed above for element 1.5) by looking up the account number in a token database. In particular, the token server “extract[s] the payment token from the message,” then issues a query to a database “using the payment token as a search term in the query.” EX1011, ¶53. In response, the database

• • •

“whether the user token is authenticated”). In other words, the query determines whether the *scan* (RFID/NFC interaction) *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. EX1005, ¶246.

The Token Server Does Not Meet All Claim Requirements

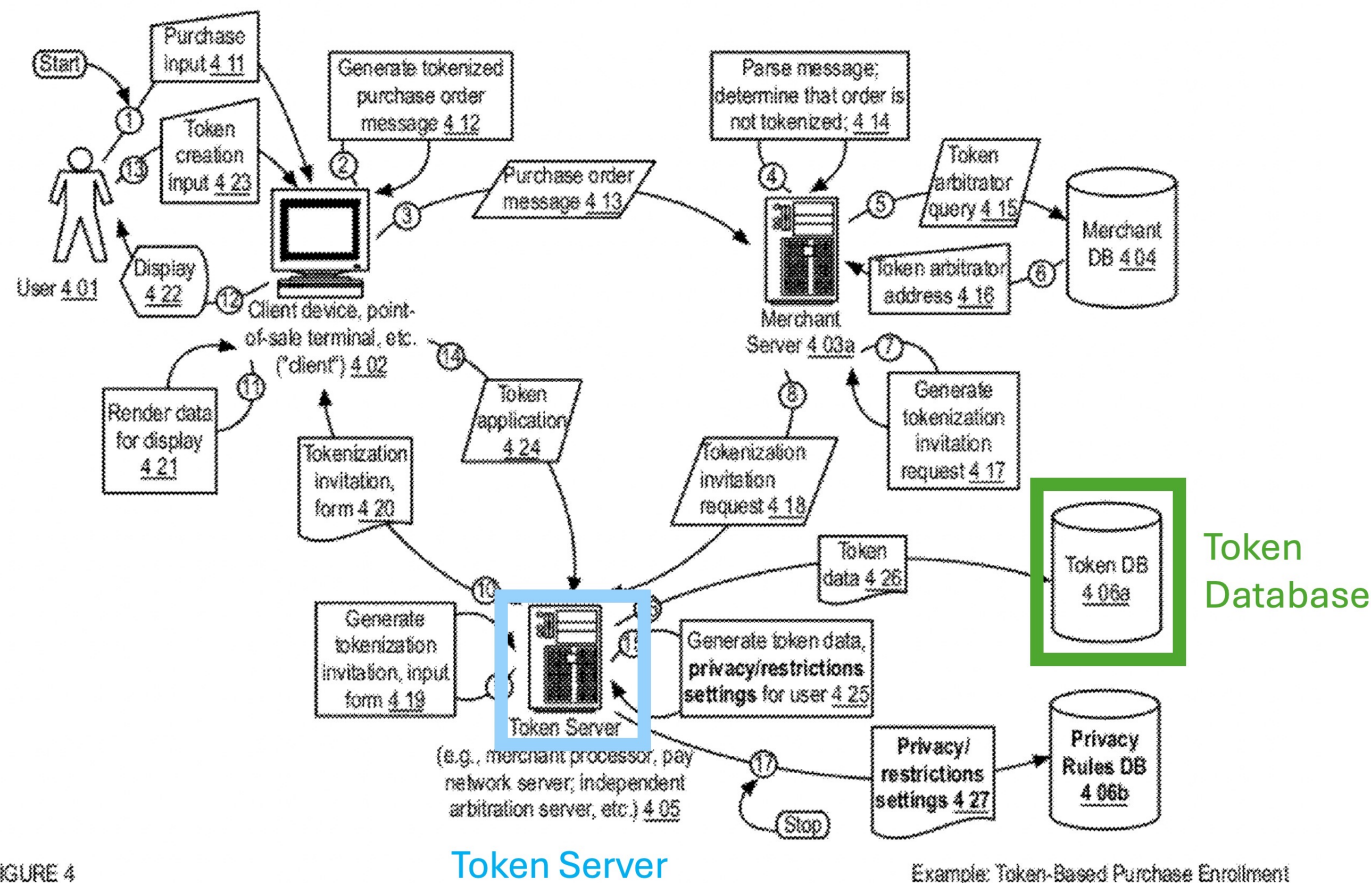


FIGURE 4

Source: EX1011 at Fig. 4; see also 486-Sur-Reply at 9; 488-Sur-Reply at 11; 489-Sur-Reply at 9; 490-Sur-Reply at 9
Demonstrative Exhibit - Not Evidence

Dr. Shamos Disagrees with Visa

Dr. Shamos:

4 Q. Right. Okay. So, just to clarify
5 here, you are not saying that Osborne's token
6 server is by itself an OVER engine, are you?

7 A. So, I guess there is a difference
8 between what I said or didn't say and what I
9 actually believe.

10 So, I don't think I have a statement
11 that says that the token server is the OVER
12 engine.

20 Q. Okay. So, my question though is a
21 little different. And that is what in Figure 6
22 constitutes the OVER engine, if the OVER engine
1 has to both generate and verify token?

2 A. Well, I can't tell because it
3 depends on the implementation.

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Source: 486-POR at 52-54, Sur-Reply at 16-19; 488-POR at 44-46, Sur-Reply at 12-15;
489-Pet. at 48-50, Sur-Reply at 15-18; 490-Petition at 48-50, Sur-Reply at 15-17
Demonstrative Exhibit - Not Evidence

All Claims Require Generating Based on Credential Information

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;

Petition Relies Solely on Stafford's Key Signatures

¶¶38, 88, 93-95. As discussed below for element 1.3, the key signatures taught by Stafford correspond to the recited OVER files; accordingly, the request to release sensitive credential information (as well as the user's purchase of key signatures) is a received request to generate an OVER file. EX1005, ¶¶362-63.

...

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. EX1005, ¶364.

One-Time Pad Encrypts any Number of Credentials

[0094] Following the process referred to earlier whereby the selected information to be released is identified from within IdSecFiles1, the unencrypted IdFiles (i.e. the information extracted from IdSecFiles1) are symmetrically encrypted using One Time Pad or similar highly secure algorithm that provides 'perfect secrecy', to create IdSecFiles2. The IdSecFiles2 are then digitally signed using IdCheck_priv_key1 and the signature is associated with the respective IdSecFiles2 in step 226. These encrypted IdSecFiles2 are moved to the Secure Staging Zone 118, under a directory associated with the MIN, to enable collection, or transmission to the recipient.

Dr. Shamos:

4 Q. Okay. So a single release of
5 information can contain any number of credentials;
6 correct?

7 A. It could.

...

6 Q. So the IdFiles, no matter how many there
7 are, are encrypted together with a secure one-time
8 pad; correct?

9 A. That's what that seems to say.

User's Private Key Is Unrelated to any Credential

Dr. Shamos:

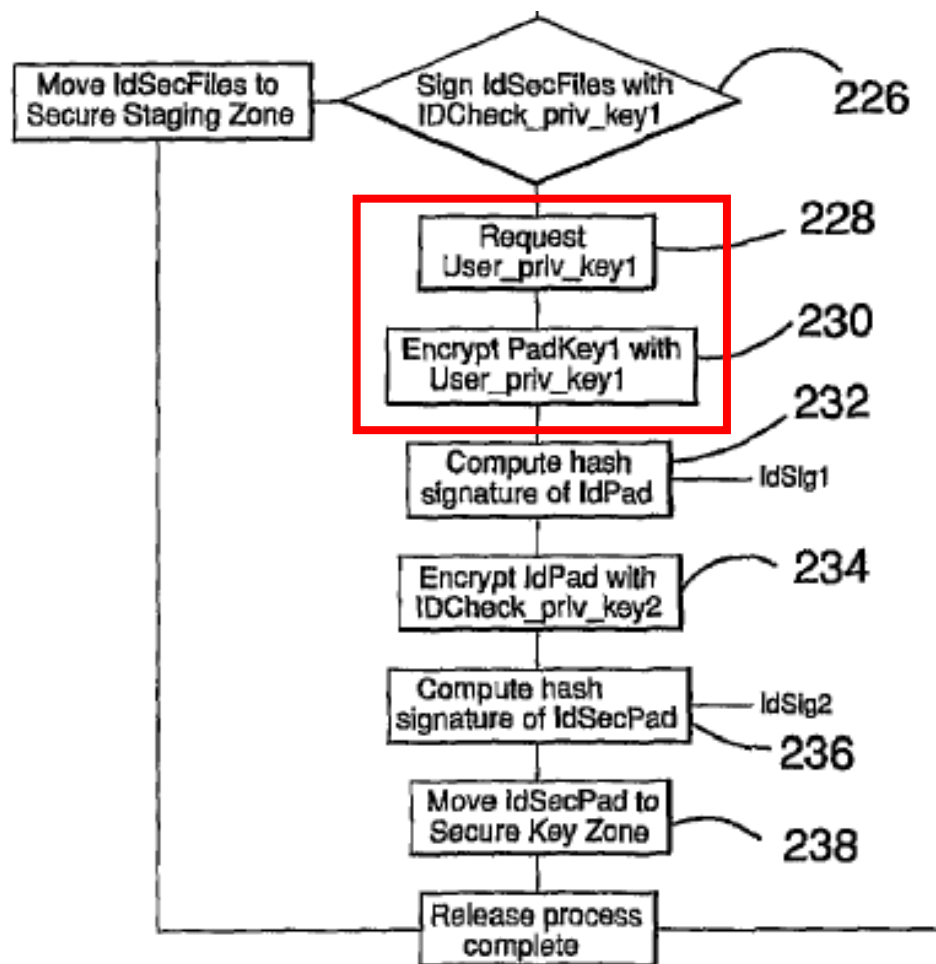
12 Q. Now, in Stafford, the user is assigned a
13 private key as part of its use of Stafford's
14 system; correct?

15 A. Yes.

16 Q. And the user's private key is persistent
17 regardless of how many credentials the user
18 uploads or how many releases of credential
19 information the user purchases; correct?

20 A. I think that's generally true. I can
21 imagine circumstances in which a different private
22 key would be used.

Release Requires PadKey1 (One-Time Pad) and Private Key



[0095] The key or pad (PadKey1) used for the One Time Pad is encrypted with User_priv_key1, requested in Step 228, to create IdPad in step 230.

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6	Show motivation to add Purves' card images to Stafford's key signatures (Grounds 5-6)

Source: 486-POR at 54-60, Sur-Reply at 19-22; 488-POR at 46-52, Sur-Reply at 15-18; 489-Pet. at 51-56, Sur-Reply at 18-22; 490-Petition at 50-55, Sur-Reply at 18-21
Demonstrative Exhibit - Not Evidence

Petition States that Purves Satisfies the Limitation

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). EX1012, ¶¶62, 65, 67. However, 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*, this aspect of the claim is met by Purves. EX1005, ¶365.

Visa's Argument Is Conclusory

Visa:

“A 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. EX 1005, ¶366.”

Dr. Shamos (EX 1005, ¶366):

“A representative image provided ‘from an issuer’ would be ‘verified by the issuing agency’ as an official representation, as would an image produced from an actual credential, since an actual credential naturally represents itself.”

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On Reply Visa Concedes It Cannot Show This Limitation In Stafford

c. PO's "verified by an issuing agency" Argument Fails

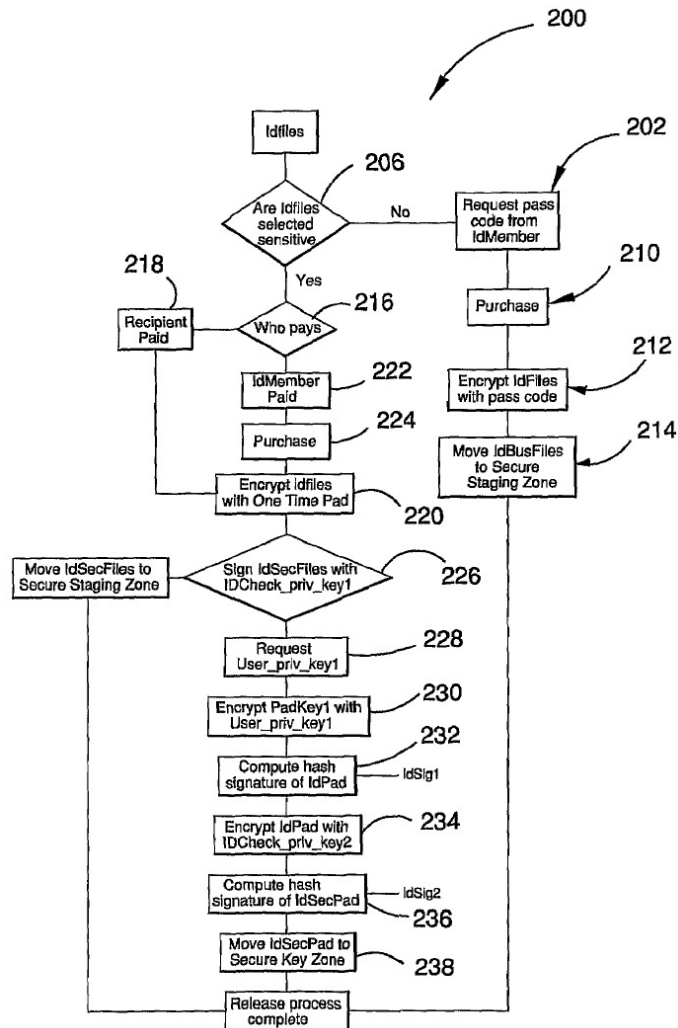
PO argues that the issuing agency checks the credential's information rather than the key signatures. POR, 54-55. But PO elsewhere admits that this limitation encompasses checking the credential's information. *Supra*, §§II.C, III.A.1; POR, 12-13. **Stafford** thus teaches the same type of check PO admits is encompassed by this limitation. EX1012, ¶¶62, 65, 67; 486-Pet. 61 (citing same); EX1048, ¶¶19-22.

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489-Pet. at 56-61, Sur-Reply at 22-26; 490-Petition at 55-60, Sur-Reply at 21-25
Demonstrative Exhibit - Not Evidence

Stafford Is a Highly Secure System for Credential Disclosure



Dr. Shamos:

14 Q. Okay. So let's say there are
15 13 numbered steps in the process of releasing
16 sensitive information in Stafford's Figure 2;
17 correct?

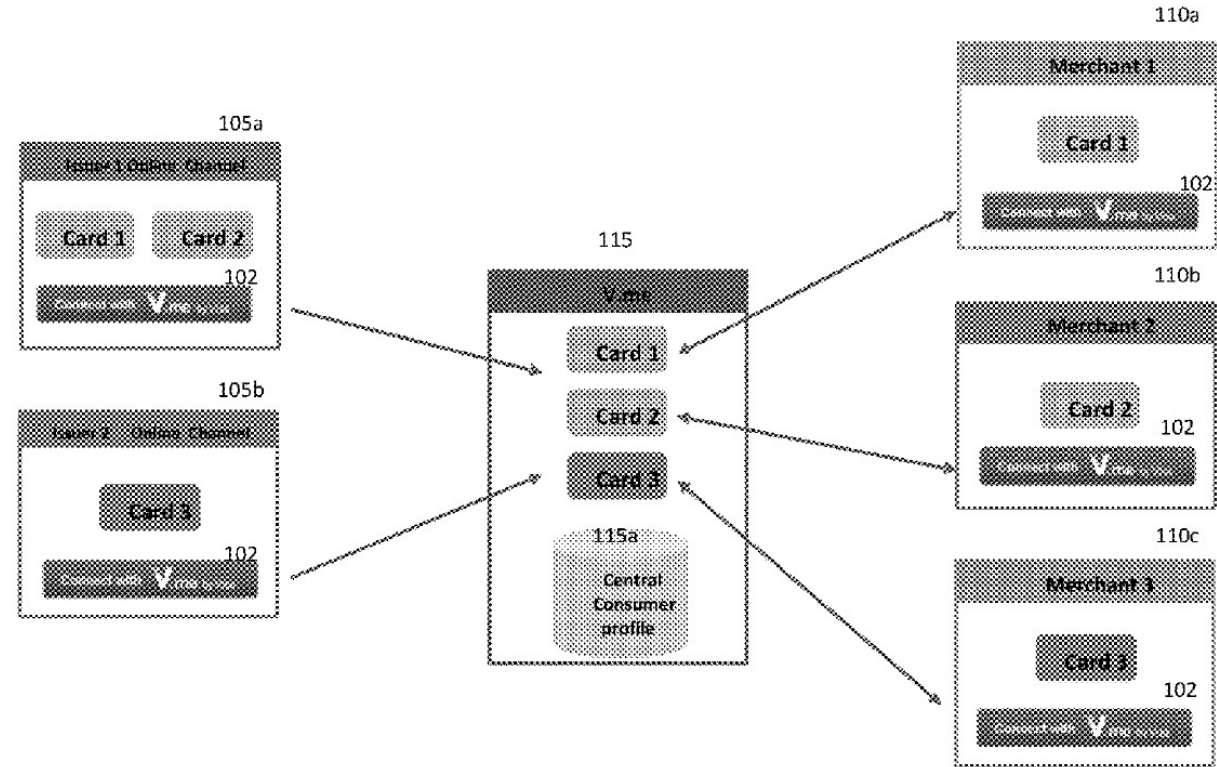
18 A. Yes.

Purves Is a Virtual Wallet

(57)

ABSTRACT

The WALLET SERVICE ENROLLMENT PLATFORM APPARATUSES, METHODS AND SYSTEMS (“WSEP”) facilitates the enrollment of payment accounts in a consumer’s virtual wallet.



Stafford's System Releases Multiple IdFiles in an Information Release

[0094] Following the process referred to earlier whereby the selected information to be released is identified from within IdSecFiles1, the unencrypted IdFiles (i.e. the information extracted from IdSecFiles1) are symmetrically encrypted using One Time Pad or similar highly secure algorithm that provides 'perfect secrecy', to create IdSecFiles2. The IdSecFiles2 are then digitally signed using IdCheck_priv_key1 and the signature is associated with the respective IdSecFiles2 in step 226. These encrypted IdSecFiles2 are moved to the Secure Staging Zone 118, under a directory associated with the MIN, to enable collection, or transmission to the recipient.

Dr. Shamos:

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5 information can contain any number of credentials;
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6 Q. So the IdFiles, no matter how many there
7 are, are encrypted together with a secure one-time
8 pad; correct?

9 A. That's what that seems to say.

Conclusion
