Combining FIDO®/CTAP2 with a Payment Wallet

This presentation outlines how the FIDO®/CTAP2 API and the W3C WebAuthn standard could be augmented with meta data holding virtual payment cards.

The authorization system builds on an enhanced EMV® concept, where a card can represent any account based payment scheme, including the international card networks and SEPA, as well as national networks.

Although not shown here, a card is after registration, also intended to be usable for payments at the counter (POS). P2P payment support is also in scope.

A detailed description of the actual data exchanges and wallet data is available at:
https://fido-web-pay.github.io/

Anders Rundgren 2022-11-23

Wallet – *Non-normative UI Sample*

Integrated payment experience extending the UI compared to current payment terminals.

The very same UI and security solution is used regardless if paying online or locally.

Merchant host name

Swipeable list of virtual cards *

Merchant common name

Amount to pay

Activates the authorization key

* Only cards matching the payment networks supported by the merchant will be shown

Wallet – *Enhancement of EMV Card Data*

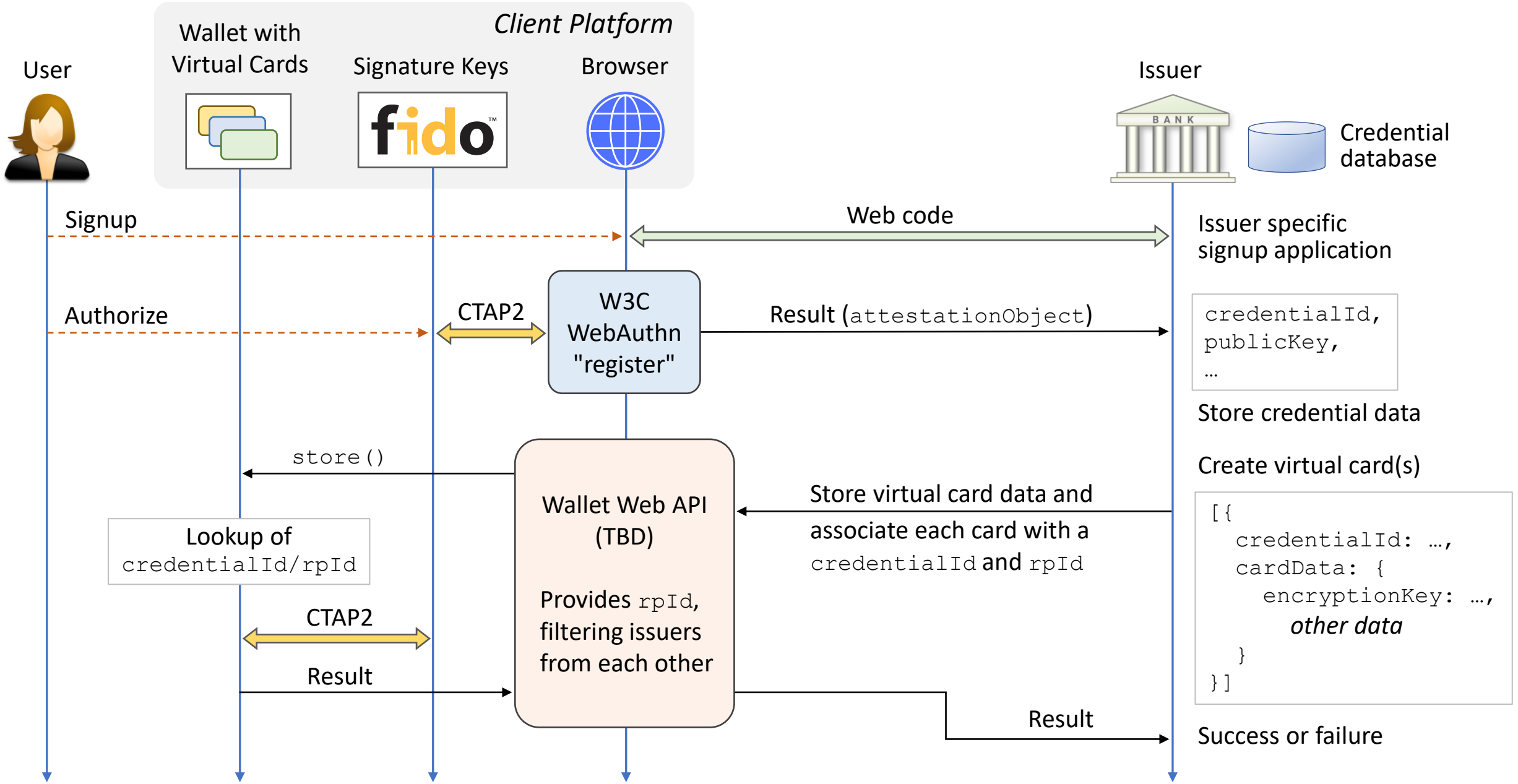
EMV Account ID (PAN) `nnnnnnnnnnnnnnn`

FIDO Web Pay “Decomposed” Counterpart

Account ID `Account Identifier String`	Payment network compatible account identifier. Examples: `FR7630004003200001019471656` for a French IBAN and `4111111111111111` for a VISA card.
Payment Network ID `URL or Specfic String`	Payment network identifier. Examples: `https://banknet2.org` for a hypothetical bank network and `visa` for the VISA network.
Issuer ID `URL String`	URL to an issuer endpoint like: `https://mybank.fr/payment`. This solution eliminates Account ID to issuer URL lookup databases.

The variables above are the only elements that protocol wise separate user authorizations for different payment networks, while from the user’s perspective, only card images differ.

Wallet – *Virtual Card Enrollment*



Wallet – *Online Payment Authorization*