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.

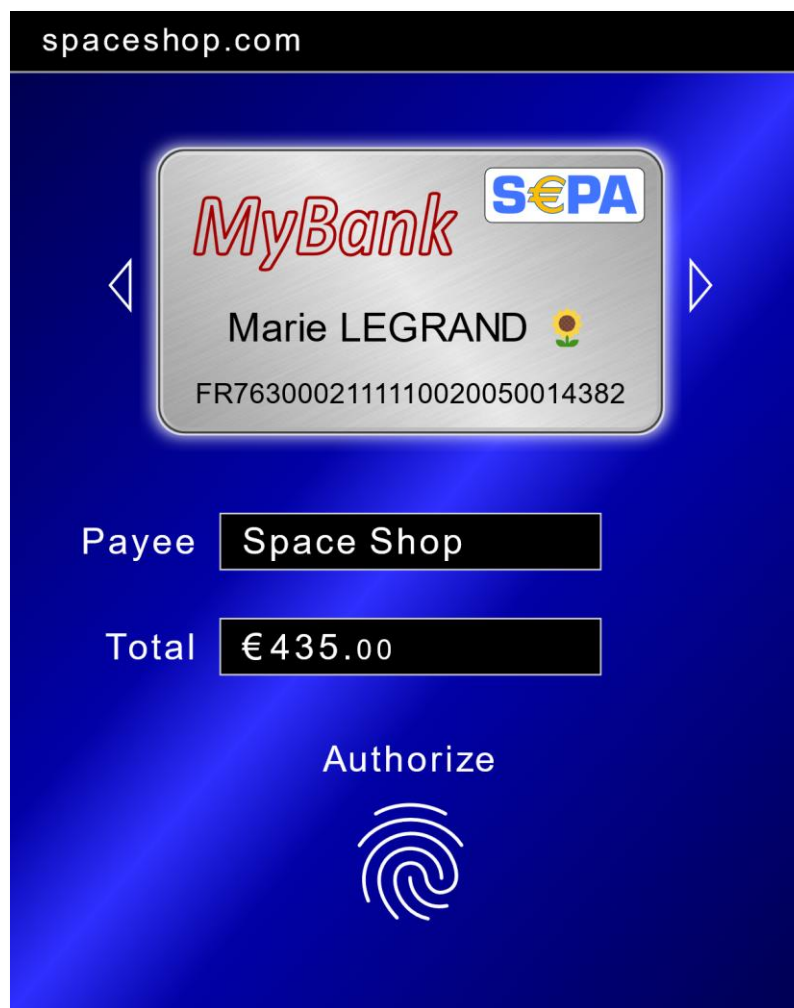A detailed description of the actual data exchanges and wallet data is available at:
https://fido-web-pay.github.io/

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FIDO and EMV are registered trademarks of the FIDO alliance and EMVCo respectively

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.

spaceshop.com

MyBank
SEPA

Marie LEGRAND 🌻

FR7630002111110020050014382

Payee   Space Shop

Total   €435.00

Authorize

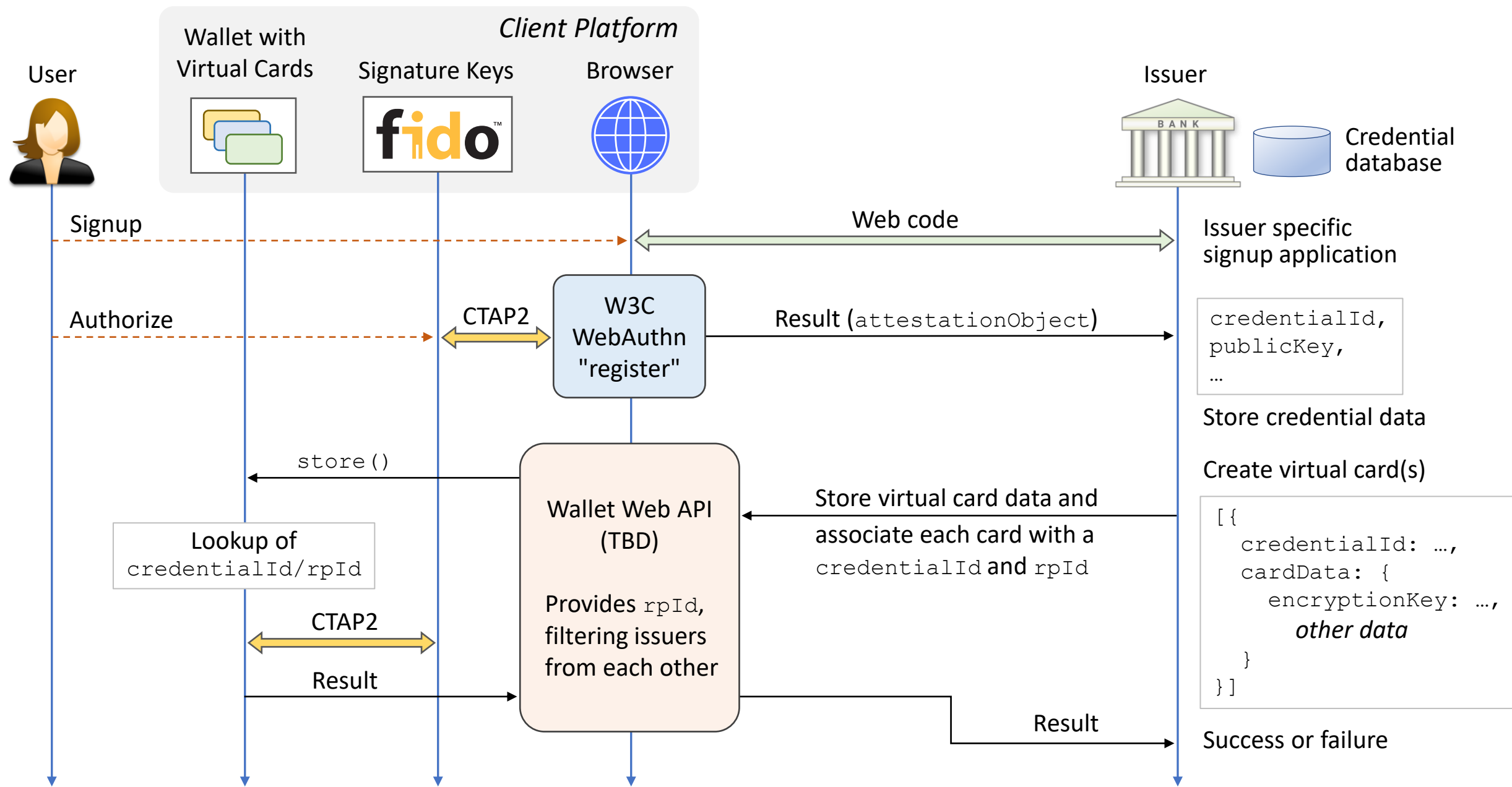⇦ Merchant host name

⇦ 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 − *Virtual Card Enrollment*

Wallet − *Online Payment Authorization*

This work is herby put in the public domain

Client Platform

User	Wallet with Virtual Cards	Signature Keys	Browser	Merchant	PSP	Issuer

Pay!

Web code

Merchant specific shopping application

Credential database

show()

Result
AuthZ

PSP request
AuthZ

Wallet UI

W3C PaymentRequest API

Issuer request
AuthZ

Select card   (optional)

Authorize

Decrypt and validate authorization

Retrieve associated credentialId/rpId

Perform payment

Collect payment data to sign

End-to-end security and confidentiality

getAssertion()

CTAP2

AuthZ

Status

Status

Encrypt authorization

Status (to user)