Combining FIDO2®/CTAP2 with a Payment Wallet

This presentation outlines how the FIDO2®/CTAP2 API and the W3C WebAuthn standard could be augmented with meta data holding virtual payment cards.
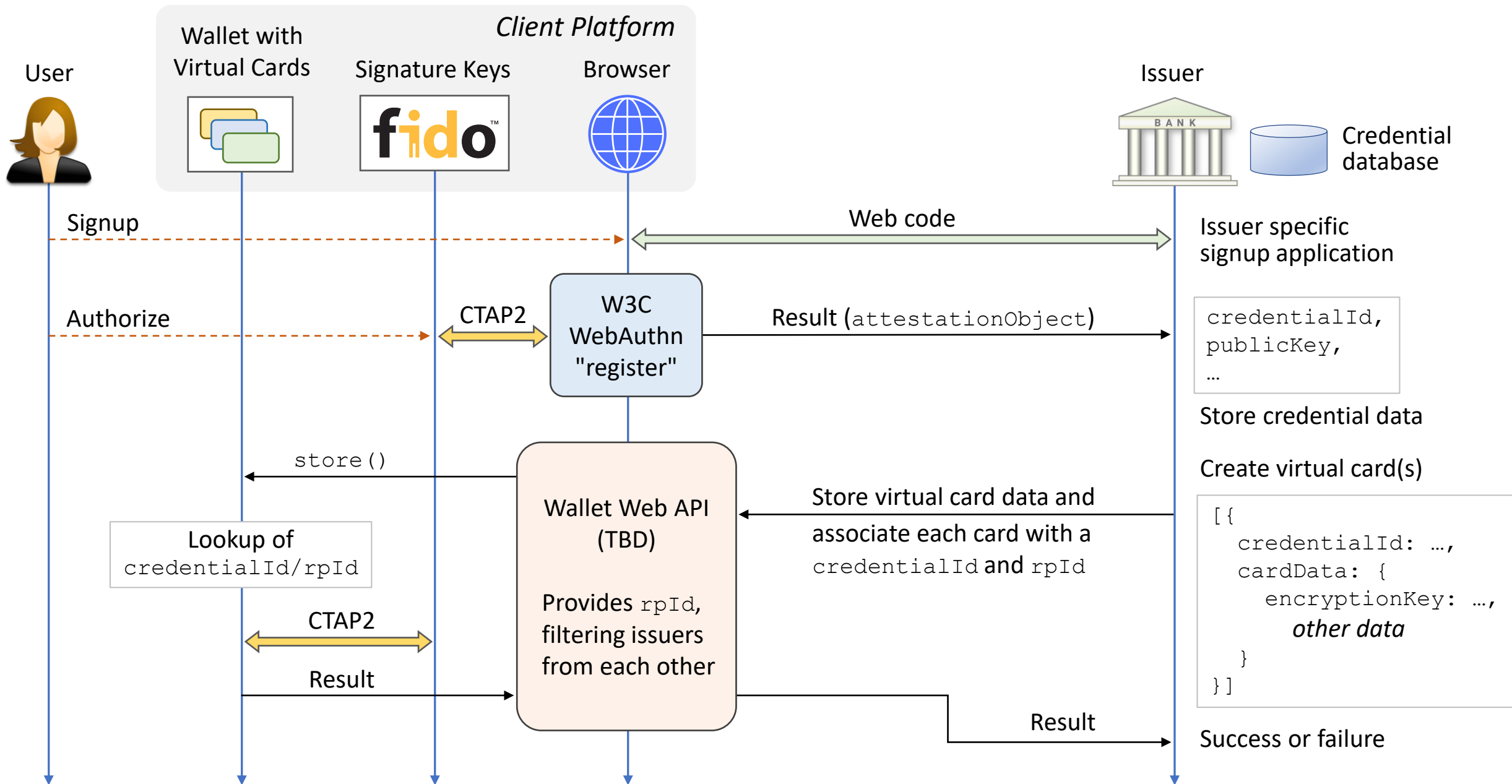
The authorization system builds on an enhanced EMV® concept, where a card can represent any account based payment scheme, including the international card networks and SEPA, as well as national networks.

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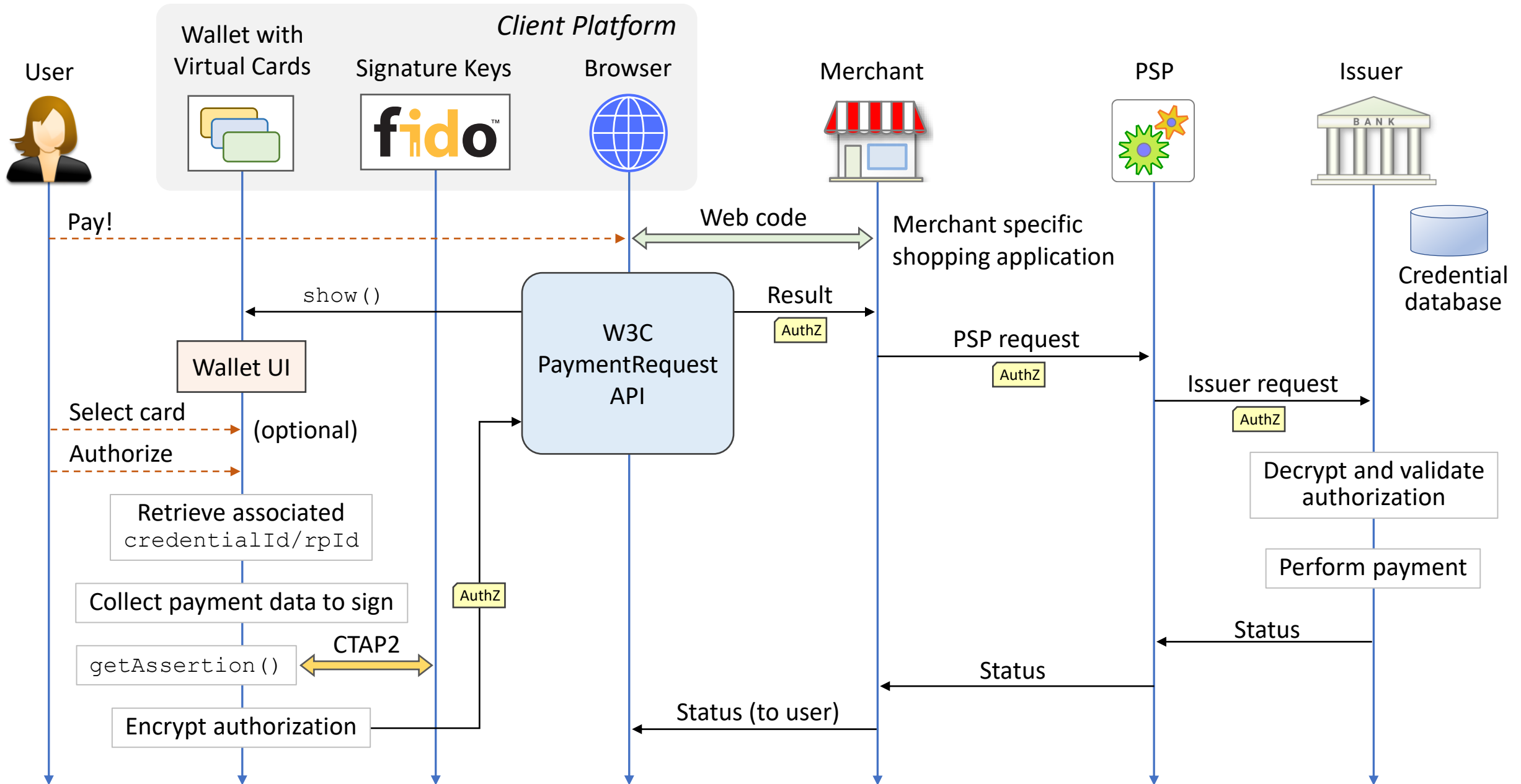
A detailed description of the actual data exchanges is available at:
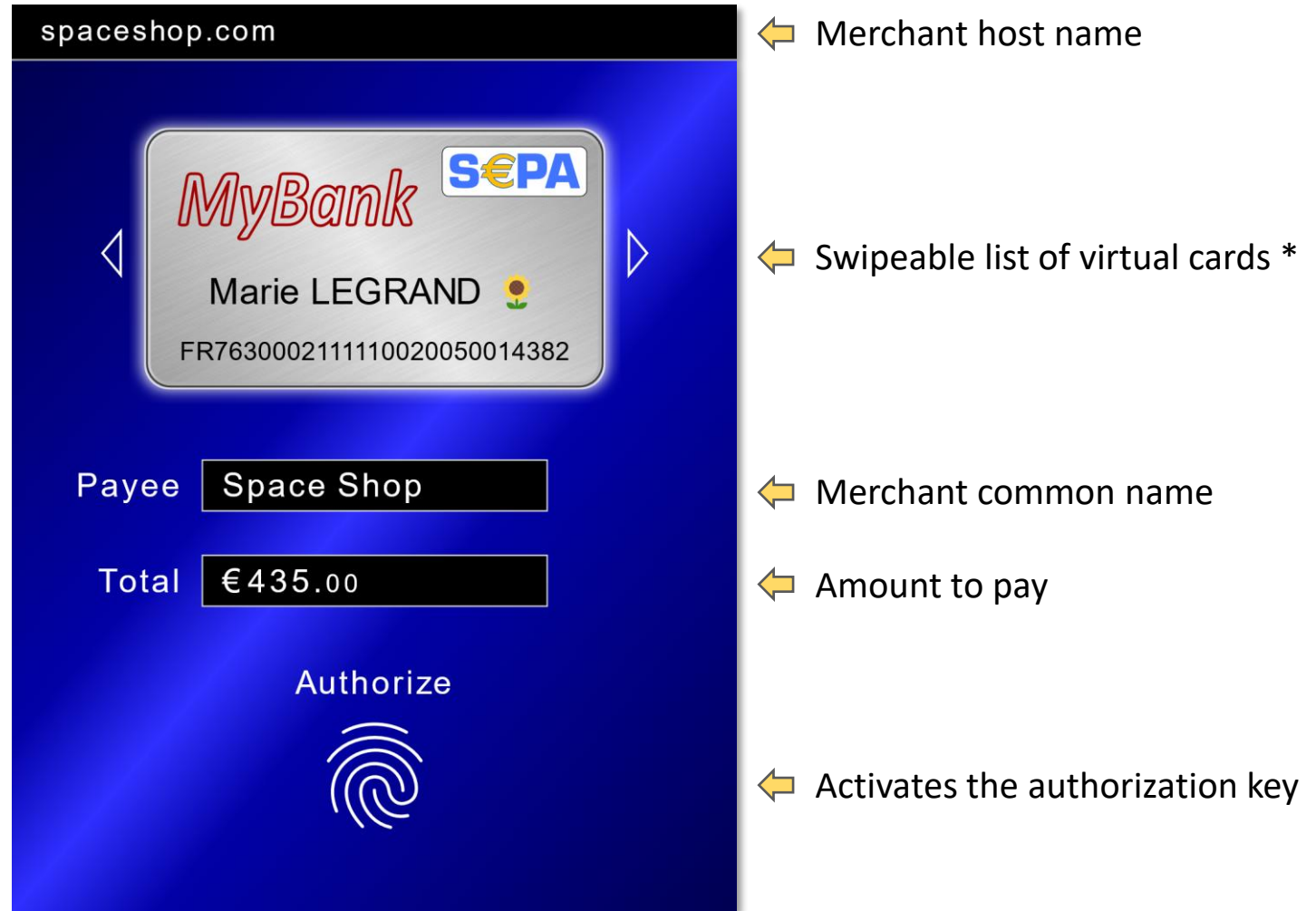https://fido-web-pay.github.io/

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Wallet − *Virtual Card Enrollment*

Wallet – *Online Payment Authorization*

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

W3C PaymentRequest API

PSP request — AuthZ

Issuer request — AuthZ

Wallet UI

Select card → (optional)

Authorize

Decrypt and validate authorization

Retrieve associated `credentialId/rpId`

Perform payment

Collect payment data to sign

AuthZ

`getAssertion()` — CTAP2

Status

Encrypt authorization

Status

Status (to user)

Wallet – *Non-normative UI Sample*

spaceshop.com ⬅ Merchant host name

MyBank S€PA

◁ ▷ ⬅ Swipeable list of virtual cards *

Marie LEGRAND 🌻

FR7630002111110020050014382

Payee **Space Shop** ⬅ Merchant common name

Total **€435.00** ⬅ Amount to pay

Authorize

⬅ Activates the authorization key

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