

EU DIGITAL IDENTITY WALLET CONSORTIUM

Payments with the EU Digital
Identity Wallet

*Lunch Webinar
February 13, 2025*

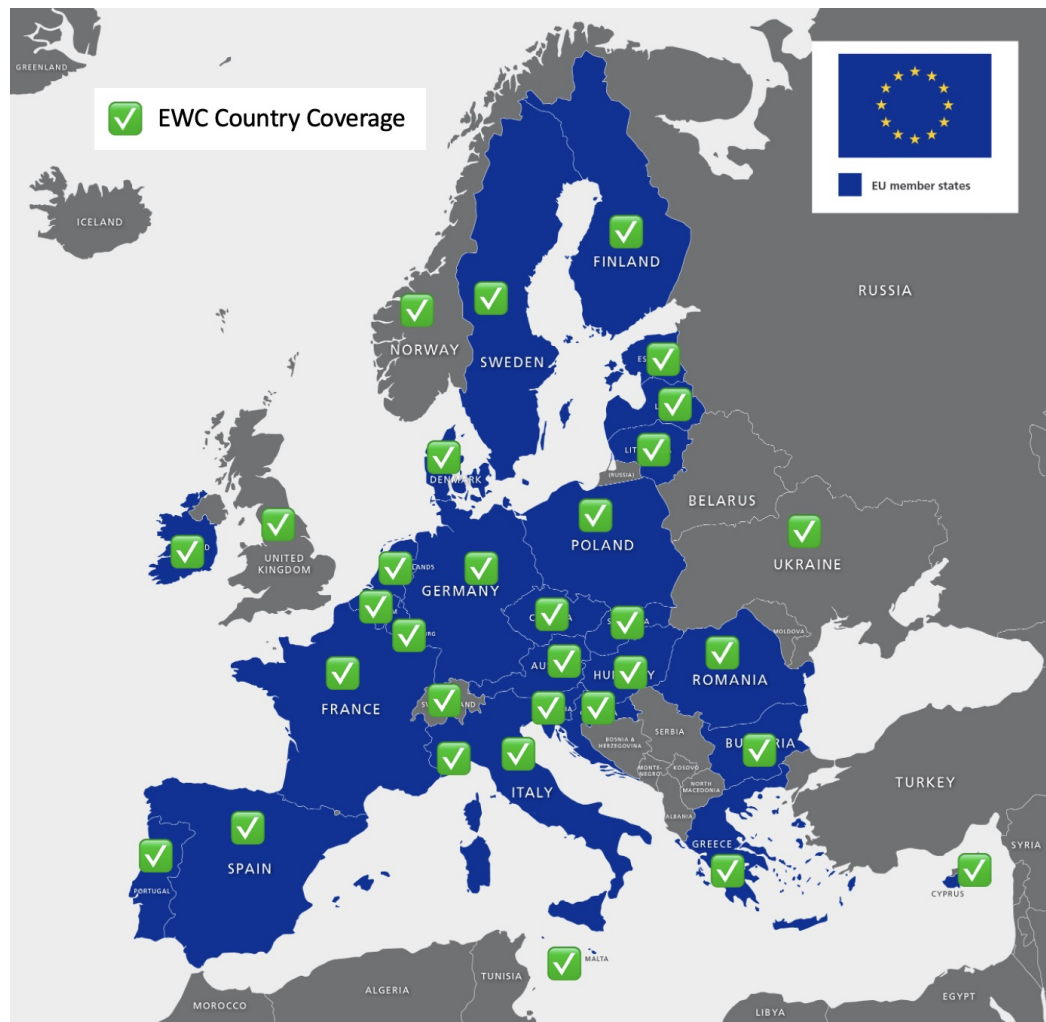


EU DIGITAL IDENTITY WALLET CONSORTIUM

Lunch Webinar

- THANK YOU FOR ATTENDING!
- This lunch webinar will be recorded and the recording will be available later
- Participants will be muted
- Please ask any questions via the Q-and-A chat
- We will try to answer some questions before we wrap up

EWC – consortium to deliver large scale pilot of the EU DI Wallet



Focus on wallets for travel, payments and Organisational (legal person) Digital Identity

MS-driven but Public-Private to its core

86 participating organisations

Focus on remote use of the wallet

EU DIGITAL IDENTITY WALLET CONSORTIUM

Marie Austenaa

Head of Digital Identity at VISA



EU DIGITAL IDENTITY WALLET CONSORTIUM

What does it take to use the EU DI Wallet for payments?

EWC Lunch Webinar 13th February 2025

info@eudiwalletconsortium.org

Marie Austenaa, David Magård
Laurent Bailly, Stefan Kauhaus

EWC Payment Taskforce

Exploring barriers and enablers to scale adoption and acceptance of the EU DI Wallet in Payments



Our belief

- Payment is a key use case to drive adoption of EUDI wallets
- Open Standards will benefit the whole ecosystem
- Banks will have to propose to their customers the EUDI wallet as an alternative SCA method for online payment by end 2027

Guiding principles

- **Inclusion** of card and account payments – everyday payments
- **Minimization** of the impact on existing payment infrastructure
- **Innovation** by combining identity and payment credentials

Objectives

- Define SCA specifications, build and pilot selected use cases
- Identify barriers to adoption (regulation, UX, ...)
- Evaluate opportunities beyond SCA: EUDI Wallet to initiate payments (card and account tokenization)
- EWC specifications and findings to serve as input for future standards (ARF Rulebook, EMVco, Berlin Group, ...)

Deliverables



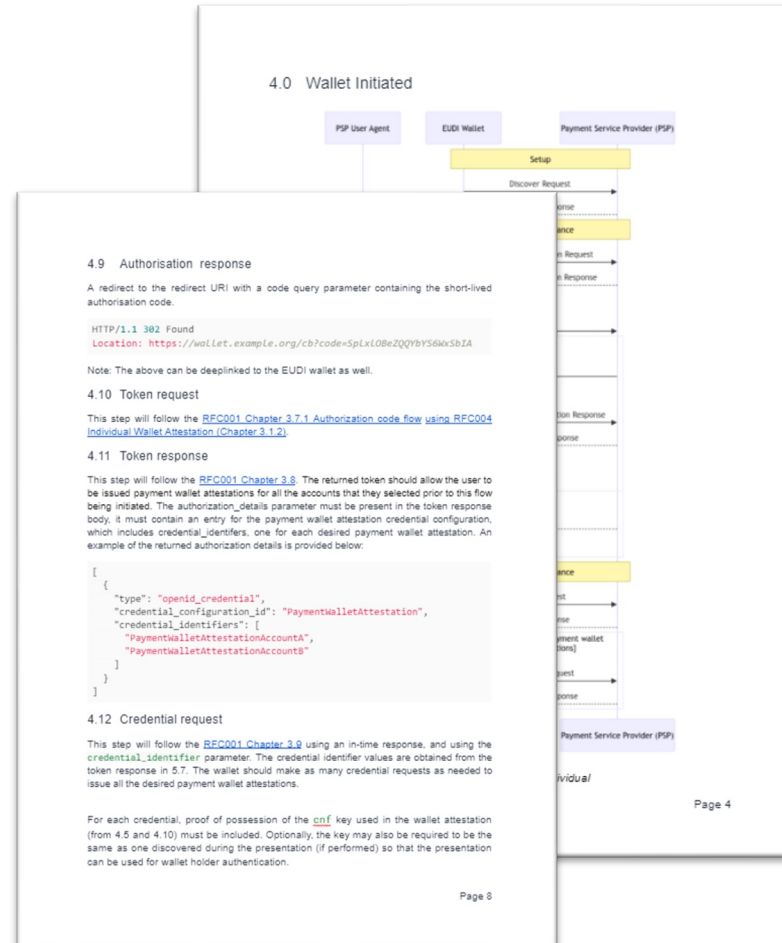
EWC Implementation Guides

Functional specifications describing flows and UX/UI between all actors involved



EWC RFCs

Technical specifications based on IGs



Pilot

Confirm student status and purchase a ferry ticket at a discount

Participants: Banca Transilvania, Fast Ferries. Worldline, iGrant

Whitepapers and ecosystem engagement

“What does it take to use the European Digital Identity wallet for payment?”

Available on EWC's Github:
(<https://github.com/EWC-consortium/eudi-wallet-rfcs/tree/main/payment-rfcs>)



Co-funded by
the European Union

Payment use cases – card and account payments



Payment Authentication

EUDIW as an alternative SCA method for online payments

Satisfying regulatory obligations

- **Linking a user's EUDI wallet with his payment account or card** (registration)
- **SCA for card-based transactions** – EUDI wallet invoked by payer's bank (card issuer) or authentication data captured by the merchant
- **SCA for account-based transactions** – EUDI Wallet invoked by payer's bank (ASPSP) or authentication data captured by the merchant



Payment Initiation

EUDIW as a payment wallet, holding payment credentials

Beyond SCA, opportunities instore or online

- EUDI Wallet to provision **card and account tokens** to initiate online or instore payments
- **Instore NFC card payment** with no impact on merchant acceptance
- Push the **card or account token payload to an online merchant** for payment processing
- **Add identity attributes** to a payment transaction

Vision for the EU DI wallet: secure and convenient payments

Merchants use the wallet to verify age and capture authentication

Shopping cart

Checkout

Payment & verification method selection

Log in to Wallet

Consent

Order complete

AA

🔒 kitchenstore.com

🔄


☰

Kitchen

STORE

🛒

Shopping Cart



Stainless Steel Kitchen Knife

Qty 1

Save for later

75,00 €

Subtotal

75,00 €

Shipping

FREE

Total (VAT included)

75,00 €

ⓘ

Your order includes age-restricted items that you will have to confirm your age before purchasing.

CHECKOUT

AA

🔒 kitchenstore.com

🔄

🛒 Show order summary

75,00 €

Your Details

Contact

alex.miller@example.com

+31 (070) 412 3456

Ship To

Herikerbergweg 238, Luna ArenA, Amsterdam Zuidoo

Delivery

Herikerbergweg 238, Luna ArenA, Amsterdam Zuidoo

Payment Method

Enter card details

Card Number

4444 0000 0000 1234

Expiry Date

10 / 25

CVV

123

☒ Save card for future use

PAY NOW

Other Payment Methods


AA

🔒 kitchenstore.com

🔄

🛒 Show order summary

75,00 €



Verify your age and confirm your payment to complete your order

Recommended Method

EU Digital Identity Wallet

Use your wallet to confirm your age and place the order immediately.

OPEN WALLET

Other Methods

Via Email (3-5 Business Days)

Send a copy of your documents to our email address for us to confirm your age.

Safari

EU Digital Identity Wallet

Biometric Approval

Log in to EU Digital Identity Wallet

Safari

EU Digital Identity Wallet

Cancel

Share Information

You will share the information below:

Age Confirmation - 18+

Verify Payment

Review the transaction details below:

From:

www.kitchenstore.com

Amount:

75,00 €

Confirm

AA

🔒 kitchenstore.com

🔄

☰

Kitchen

STORE


🛒

✔

Thanks!

Your order confirmation number is #3892374829. An email will be sent to you with options to track your delivery.

Items Purchased



Stainless Steel Kitchen Knife

Qty: 1

75,00 €

Payment Summary

Subtotal

75,00 €

Shipping

FREE

Total (VAT included)

75,00 €

Payment

VISA ...1234


HOME

For illustration purposes only


Vision for the EU DI wallet: secure and convenient payments

Simplifying and standardising payment authentication for pay by bank

Payment method selection



YOUR BASKET



Jacket
Large

Qty 1 149,95 €

Subtotal: 149,95 €


Delivery: FREE

Order Total: 149,95 €

SHIPPING ADDRESS

HERIKERBERGWEG 238, LUNA ARENA,
AMSTERDAM ZUIDOOST, 1101 CM,

SELECT PAYMENT METHOD

Debit / Credit Card 


Pay by Bank


Mobile Wallet


Consent capture and bank selection


PAY BY BANK


CHOOSE YOUR BANK


 BANK NAME


 BANK NAME


 BANK NAME


 BANK NAME

 BANK NAME

 BANK NAME


 BANK NAME

 BANK NAME

 BANK NAME

Bank authentication options

PAY BY BANK



BANK NAME

Choose one of the methods below to complete your payment.

EU Digital Identity Wallet

Confirm your payment using your EU Digital Identity Wallet.

Open Wallet

Other Methods

Mobile Banking App
Log in to your mobile banking app to complete the payment.

Card Reader
Use your card reader to log in to your bank account.

Log in to Wallet

Boutique

EU Digital Identity Wallet

Biometric Approval
Log in to EU Digital Identity Wallet

Review and confirm payment

Boutique

EU Digital Identity Wallet

Cancel

Payment Information
Review the transaction details below:

From: Boutique

Amount: **149,95 €**


Select Payment Method

☒ FDNB Current Account NL91 ABNA 0417 1643 00 1.320,00 €

☐ FDNB Joint Account NL91 ABNA 0417 1622 11 820,00 €

Make Payment


Order complete



ORDER CONFIRMATION

Thank you for shopping with us!

Your order confirmation number is **#3892374830**. An email will be sent to you with options to track your delivery.



Jacket
Large


Qty 1 149,95 €

Subtotal: 149,95 €

Delivery: FREE

Order Total: 149,95 €

PAYMENT METHOD




 Pay By Bank

HOME

Beyond SCA, what payment initiation with the EUDIW could look like

QR code vending machine with age verification example





 ID2Pay Wallet  


Transaction request

BeerMerchant request a payment of 2.70 €
Required credentials for hanae are:

Please select the corresponding credentials in your wallet





 Sign and send

User flows

Registration of the EU DI Wallet with the bank

- User authenticates to the bank through an already established mechanism (e.g. online banking login).
- User authenticates to the wallet and presents proof-of-possession of a key that is bound to the device.
- The bank may optionally request the PID to perform additional verification against the data it has on file.
- As a result, the bank (or intermediary) generates an SCA attestation bound to the user's device-bound key and signed with the bank's (or intermediary's) private key.
- This credential is issued into the user's wallet and requested later during a payment transaction. It fulfils possession element under PSD2.¹
- *PSD2 allows third-party technology without outsourcing if minimum requirements are met and have been associated with the user in a context where SCA was applied beforehand.*²

Roles and flows

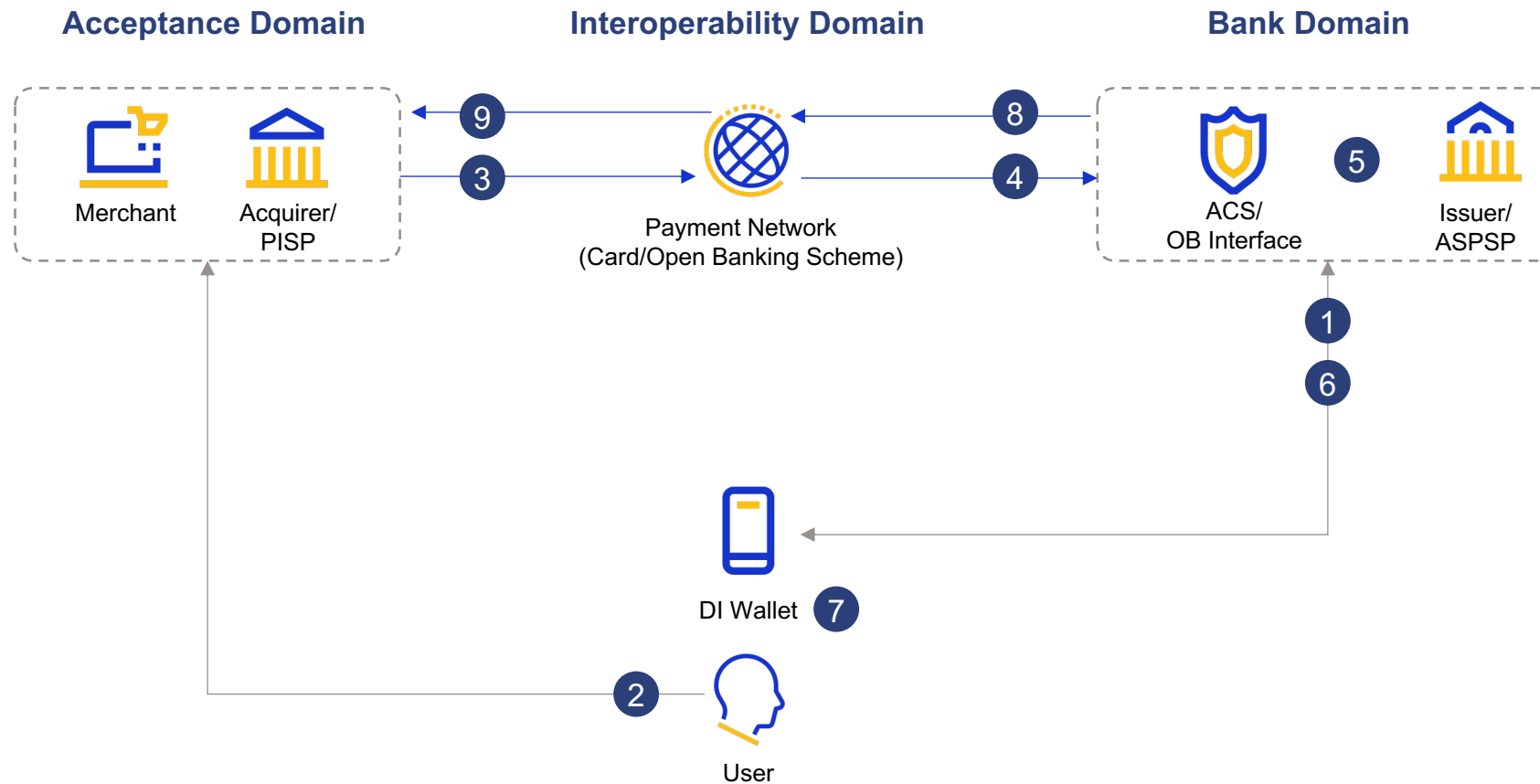


1. Payment Service Provider* (ASPSP, Issuer or intermediary) places **SCA attestation** in user's wallet

[Registration, one-off and upfront prior to SCA for purchase transaction]

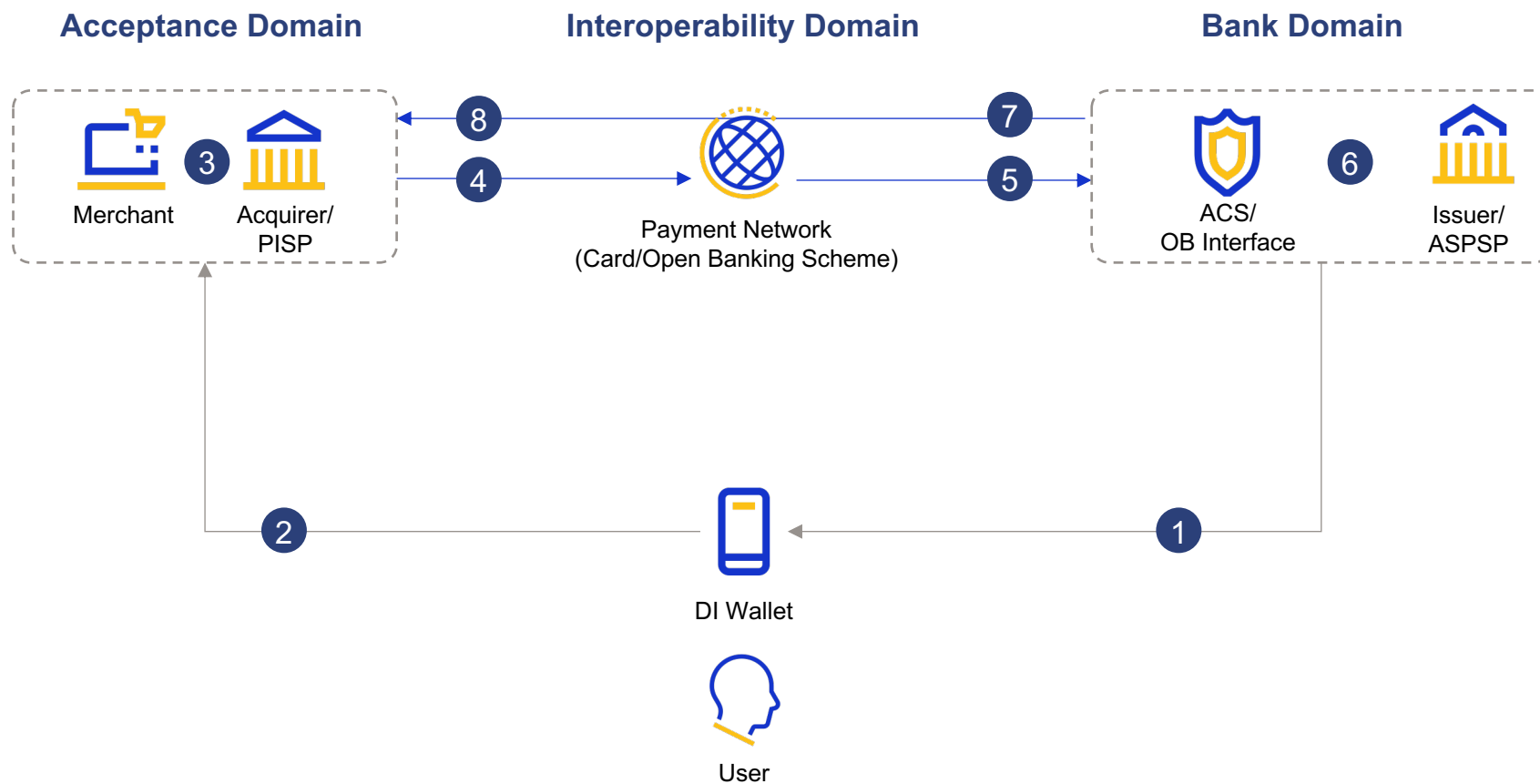
**The Bank, ASPSP, Issuer or intermediary on behalf of*

Bank-led Strong Customer Authentication (SCA)



1. Bank (or provider on-behalf) places SCA attestation in user's wallet
2. User shops at merchant and, dependent on payment method, provides payment credential, confirms stored credential or selects pay-by-bank
3. Merchant (or provider on-behalf) sends request using intermediary payment network
4. Bank receives request from intermediary payment network
5. Bank determines that SCA is required, and that user has suitable EUDIW
6. Bank invokes user's wallet
7. User performs authentication with their wallet and provides output to bank
8. Bank validates authentication and, if successful, sends response using intermediary payment network
9. Merchant receives response from intermediary payment network and proceeds with transaction

Merchant-captured Strong Customer Authentication (SCA)



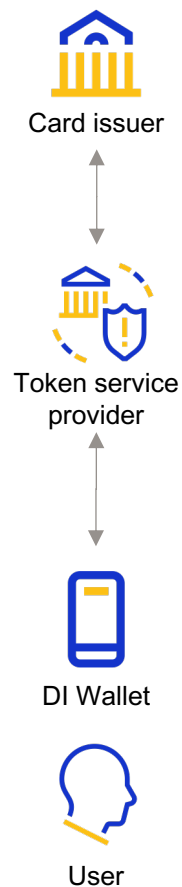
1. Bank (or provider on-behalf) places SCA attestation in user's wallet
2. User shops at merchant and, dependent on payment method, provides payment credential, confirms stored credential or selects pay-by-bank. In addition, user presents SCA attestation incl. dynamic linking, plus possibly other credentials, from wallet
3. Merchant separates and keeps non-SCA related information
4. Merchant (or provider on-behalf) sends request using intermediary payment network
5. Bank receives request from intermediary payment network
6. Bank validates authentication output
7. If successful, bank sends response using intermediary payment network
8. Merchant receives response from intermediary payment network and proceeds with transaction

Note:

→ OID4VCI/VP → 3-D Secure/
Open Banking API

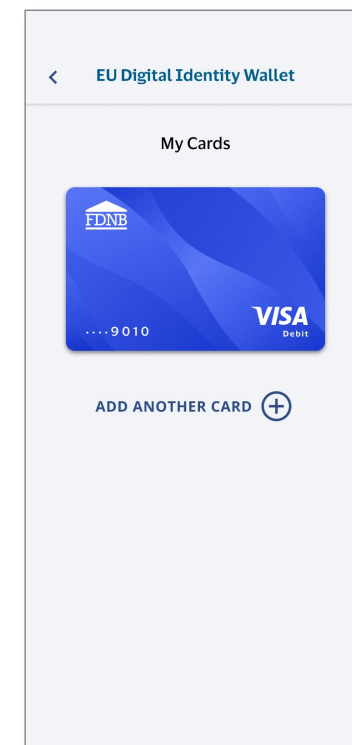
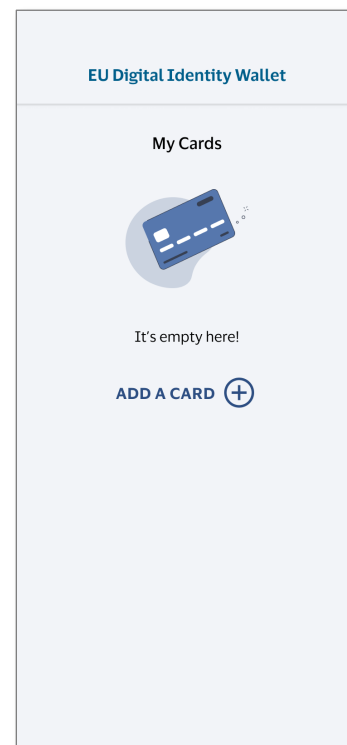
Requesting a card token

Wallet requesting
a card token*

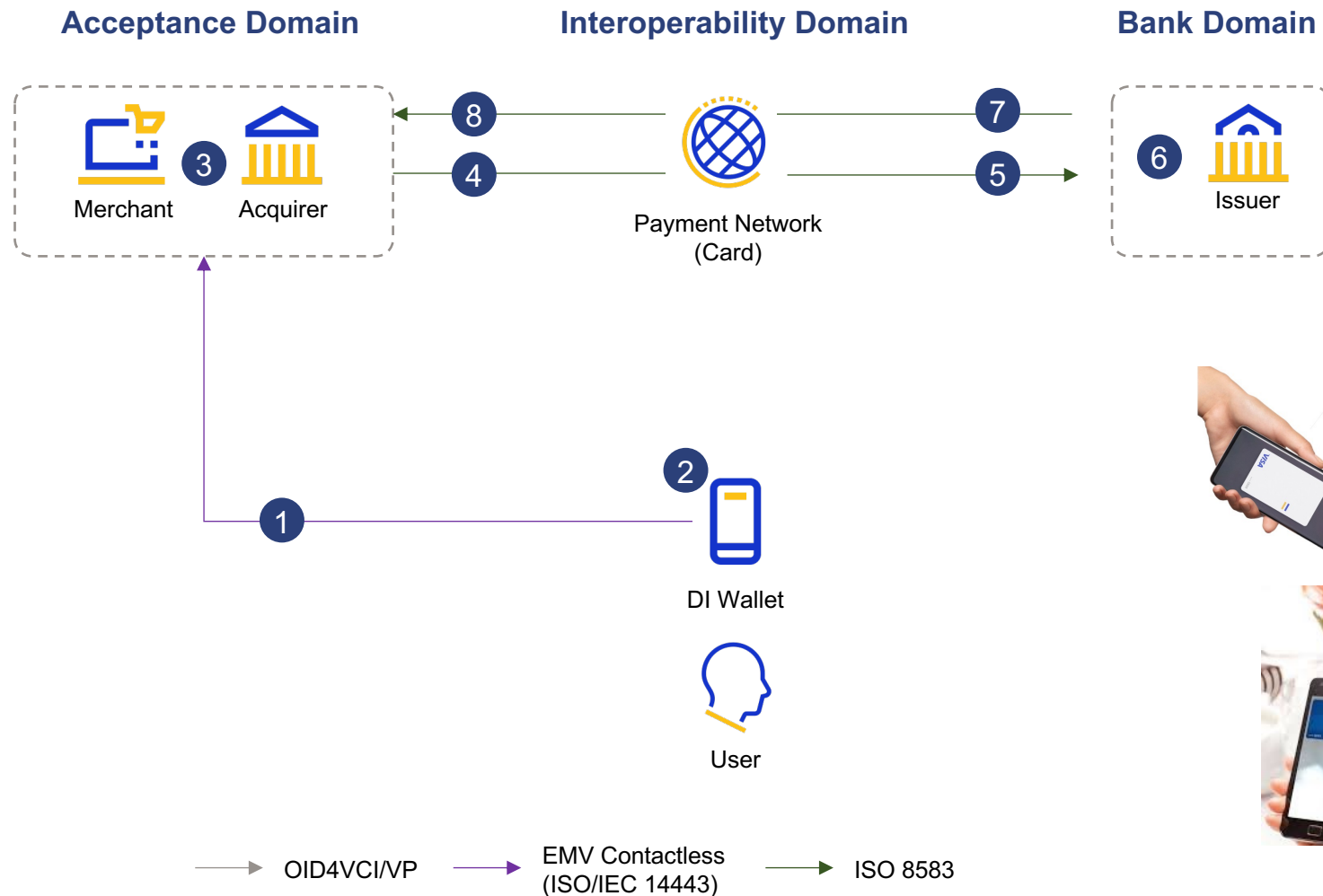


1. User authenticates to the wallet and selects card to add
2. Wallet sends tokenise request to token service provider
3. Token service provider sends token request to card issuer for approval
4. Issuer requests SCA – which can be based on SCA attestation
5. Device token is provisioned to the wallet

**Simplified*



Payment initiation in person



1. User purchases goods at a store and pays with the EU DI wallet by authenticating to the EU DI wallet and tapping the mobile device on the merchant's Point of Sales (POS) terminal.
2. The wallet uses the payment keys stored on the mobile device to generate the payment cryptogram.
3. The POS terminal captures the token details and the payment cryptogram and sends an authorisation request to the acquirer using EMV contactless protocol (ISO/IEC 14443) over NFC.
4. The acquirer forwards the authorisation request including the ARQC to the payment network.
5. The payment network takes the token and retrieves the original card details and routes it to the card issuer.
6. The bank checks the user's account and decides to approve or decline the transaction. If approved,
7. The bank responds over the payment network.
8. Merchant receives response from payment network and proceeds with transaction.

Regulatory compliance and scalability

- EU DI Wallet must satisfy requirements for Strong Customer Authentication according to PSD2
 - **Two factor authentication (possession and inherence)**
 - Possession depends on “SCA attestation” – a credential bound to the wallet instance
 - Inherence is during biometric authentication to confirm SCA
 - **Dynamic Linking**
 - Supported with the latest enhancements for signed transactions in OID4VP
- Requirement of outsourcing agreements will limit practical adoption, however, **outsourcing may not be necessary**
 - To issue a “SCA Attestation”, the **bank authenticates the account holder** using an existing mechanism under the control of the bank² – for instance a bank app – and associates the account holder with its wallet
 - The bank (or an intermediary on behalf of the bank) issues an “SCA Attestation” to the EU DI wallet of the card holder, which means that the bank relies on the wallet as “**third party technology**”³ only
 - If the merchant captures the authentication result, this is passed on to the Issuer who decides on whether to step-up or not – **decision on SCA stays with the bank**

¹EBA-Op-2019-06, paras. 26, 27 (<https://www.eba.europa.eu/publications-and-media/press-releases/eba-publishes-opinion-elements-strong-customer-authentication>)

²EBA Single Rulebook Q&A 2021_6145 (https://www.eba.europa.eu/single-rule-book-qa/qna/view/publicId/2021_6145)

³EBA Single Rulebook Q&A 2018_4047 (https://www.eba.europa.eu/single-rule-book-qa/qna/view/publicId/2020_5643)

Key takeaways

- eIDAS **requires** that the EU DI wallet must be an option for strong customer authentication (PSD2 SCA)
- Payment is a **natural extension** of many typical use cases for the EU DI Wallet, and as such, payments can make the wallet more relevant for every-day use and drive adoption
- Payment is an **existing eco-system** which can scale the adoption of the EU DI wallet, but requires interoperability with existing infrastructure and players
- EU DI wallets must be **designed** to support payment use cases (SCA, payment initiation) and be interoperable with existing infrastructure such as point of sales terminals and 3DS
- Regulatory compliance is mandatory, but can be a **severe limitation** if solution is not scalable
- Existing and new **standards must evolve** to support the EU DI wallet (thank you EMVCo!)
- Seamless best in class **user experience** is essential for frequent use cases such as payment
- **Collaboration** across standards organisations, regulators, governments, wallet providers, banks and intermediaries to define, deploy and test for interoperability and scale

➡ *NOBID and EWC are working together on a discussion paper describing how the EU DI wallet can be used for payment authentication and initiation across card and account payments.*

➡ *Next webinar will show case the pilot demonstrating payment authentication*

Questions ?

Thank You !

See you at the next Lunch Webinar on:

Wallets for Businesses

**March 5, 2025
12.30pm-1pm CET**