

EU DIGITAL IDENTITY WALLET CONSORTIUM

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

June 2025

Agenda

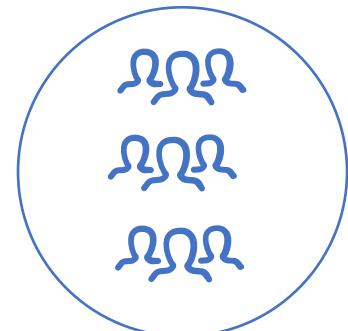
- Introduction to eIDAS2 and EUDI Wallets
- EWC specifications
- EWC Production pilot
- Regulatory considerations
- WE BUILD

Introducing eIDAS2 regulation and EU Digital Identity Wallet



- **eIDAS2** regulation entered into force in May 2024 and introduces **EU Digital Identity Wallets (EUDIW)**
- A digital ID and personal digital wallet for EU citizens, residents and businesses
- EU Member States must propose at least one digital wallet to their citizens for free **by the end of 2026**
- Wallets are built on the same technical standard and will be **interoperable accross Europe**
- Ambition to equip **80% of EU population by 2030**

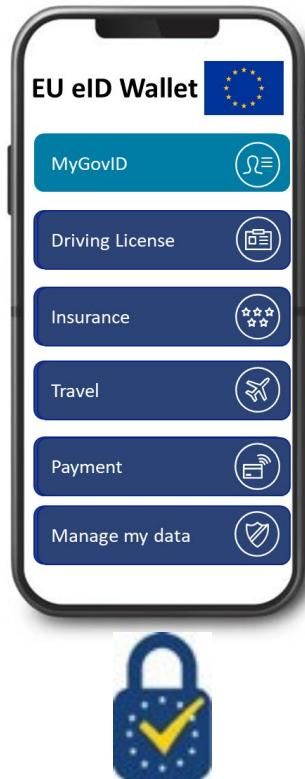
The EU DI Wallet – enabling many use cases



Person Identification Data Provider (PID)



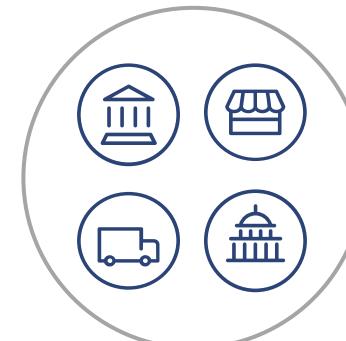
Attribute Providers (QEAA)



Proof of identity
credentials & attributes



e.g. Name, Address,
Identity documents,
Diploma Certificate,
Drivers License,
Flight Tickets, loyalty
cards, payment cards



Relying Parties (RP)

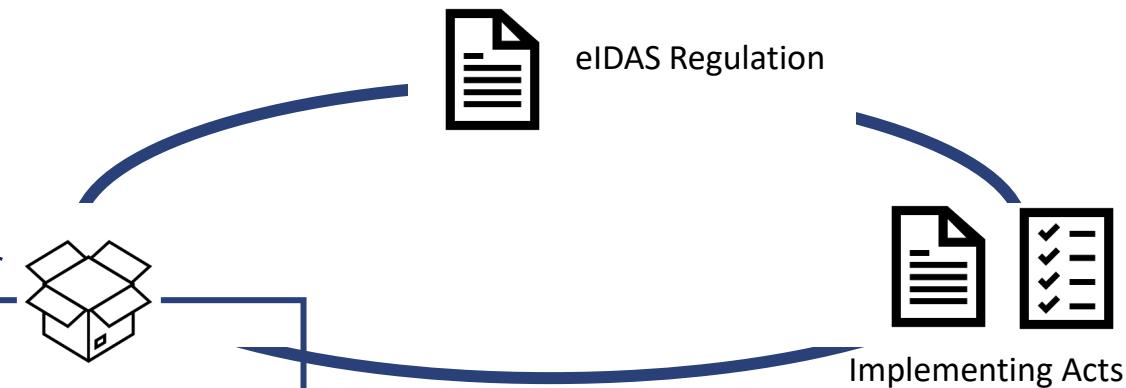
The EU Digital Identity Wallet

- will allow you to **securely identify yourself** online when accessing a wide range of public and private services,
- will let you **store, present and share electronic attestations** (which include everything from university diplomas to train tickets).
- will let you **sign digital documents** swiftly and easily
- will be made available and interoperable in **every EU Member State** for all citizens, residents and businesses.

EU Digital Identity framework



Every Member State will offer at least one EU Digital Identity Wallet to its citizens, residents and businesses. To make wallets work seamlessly across borders, every Member State will rely on a common set of standards and specifications to build their wallets



Wallet References Implementation

code libraries and a reference application that will be made publicly available and ready to be used by Member States and stakeholders to build their own wallets



The Pilots are building on the ARF specifications . Each Pilot is testing the EU Digital Identity Wallet in a variety of everyday scenarios, relevant to Europeans day to day lives. The pilots will take place until 2025. The results of their tests will be shared to further improve the security, interoperability, and design of the EU Digital Identity Wallet.

These common specifications for the EU Digital Identity Wallet will be referenced in Implementing Acts (legislative texts) making them mandatory for all wallets across all EU Member States.

eIDAS2 will have a short/mid term impact on banks and merchants for online strong authentication and online payments



eIDAS 2.0, summary of Article 5f(2):

With the exception of small businesses, Relying parties required by law or by contractual obligations to use strong user authentication shall also accept European Digital Identity Wallets no later than end 2027

eIDAS 2.0, summary of Recital 62:

Secure electronic identification and the provision of attestation of attributes should support the fulfilment of strong customer authentication requirements for online identification for the purposes of account login and of initiation of transactions in the field of payment services.



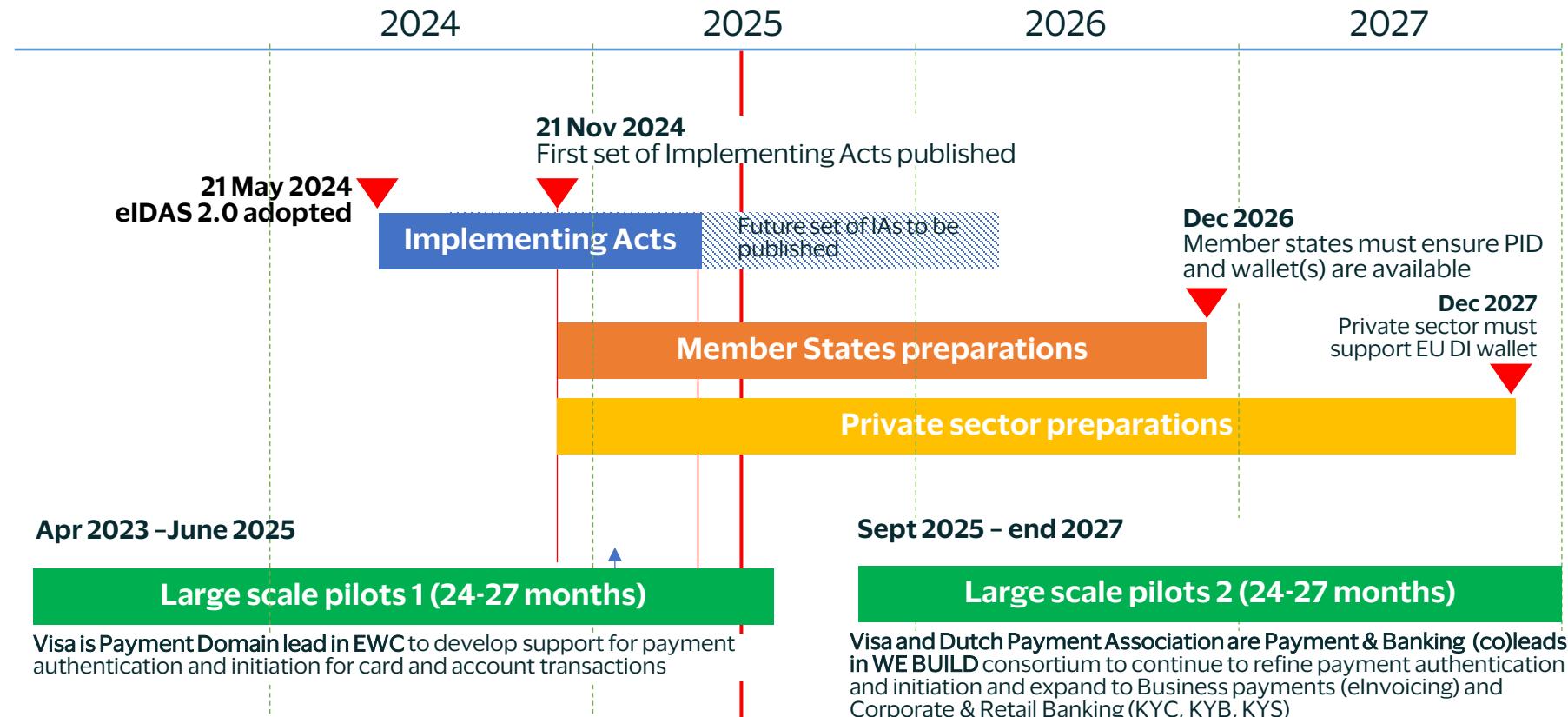
- EU banks **must propose EUDIW for online payments SCA by end 2027**
- Consequently, EU merchants online **checkout performance will be impacted**
- EU banks **must accept EUDIW for KYC and online banking login by end 2027**
- EU **merchants may be obliged to accept EUDIW for login by end 2027**

*This is EWC's current understanding of market interpretation of the eIDAS2 regulation, and should not be taken as legal advice nor regulatory guidance
Source: eIDAS 2.0, [Regulation \(EU\) 2024/1183](#)*



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eIDAS2: by end 2027, banks must be ready to use EUDIW



DC4EU



EWC



NOBID
CONSORTIUM



WE BUILD
CONSORTIUM

APTITUDE

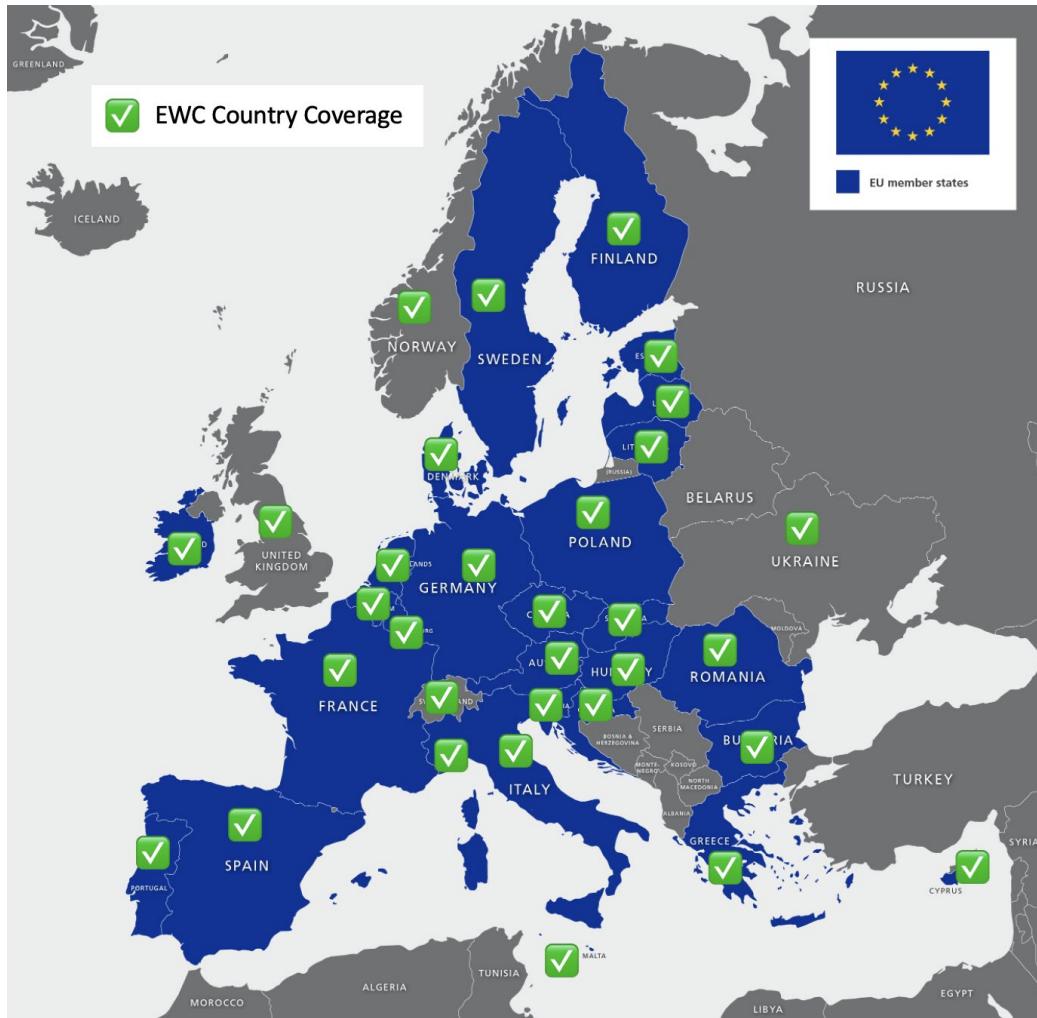


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EWC and solution design for using the EUDI wallet for Strong Customer Authentication

EWC consortium

<https://eudiwalletconsortium.org/>



Focus on Travel, Payments and Organizational Digital Identity

Member State-driven but Public-Private to its core

Focus on online and remote flows

Coordinators:

- Bolagsverket (Sweden)
- Ministry of Finance (Finland)



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EWC Scope



Travel

Purpose: reduce friction in the industry

- Advanced Passenger information
- Digital Travel Credential for border crossing
- Guest registration for hotels



Organisational identity

Purpose: Reduce friction in cross-border identity proofing for organisations (e.g. know-your-supplier)

- Procurement
- E-receipt
- Verification of useful attributes that is needed to conduct business (domestic and cross-border)



Payments

Purpose: drive everyday usage of the EU DI wallet

- Payment authentication
- Payment initiation



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EWC Payment Taskforce

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



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PIRAEUS BANK

BANCA
TRANSILVANIA®



Raiffeisen Bank
International



› BPC



outpayce
from amadeus



netcetera

INFOCERT
TINEXTA GROUP

FAST FERRIES



UNIVERSITY OF THE AEGEAN

VISA

Token ID
A Visa Solution



A Visa Solution

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, ...)

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
- **Add identity attributes** to a payment transaction



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

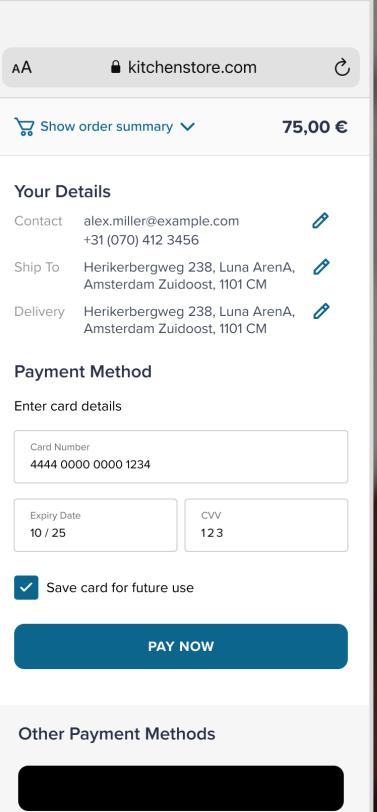
Vision for the EU DI wallet: secure and convenient payments

Merchants use the wallet to verify age and capture authentication

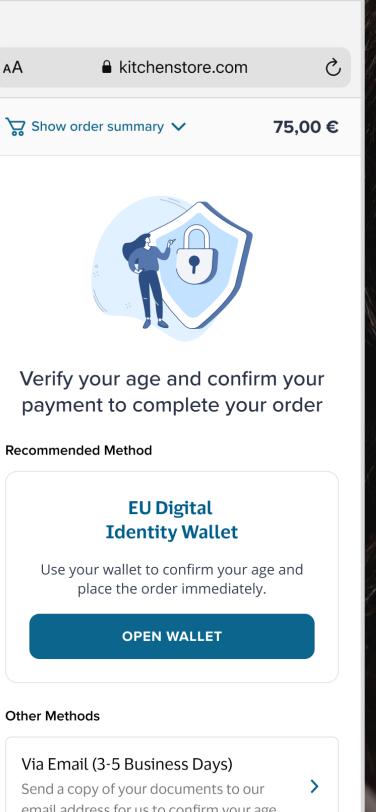
Shopping cart



Checkout



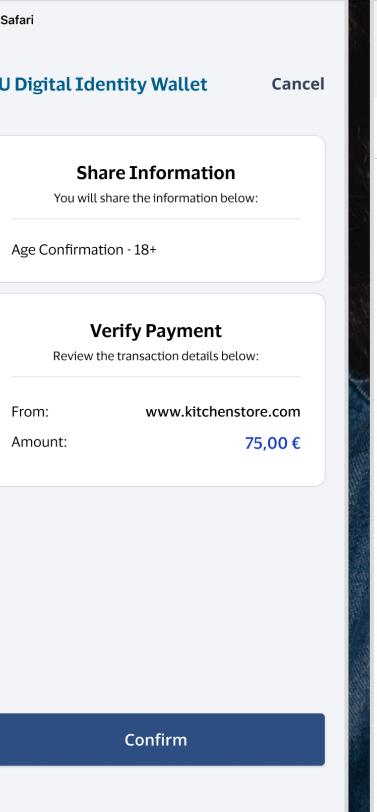
Payment & verification method selection



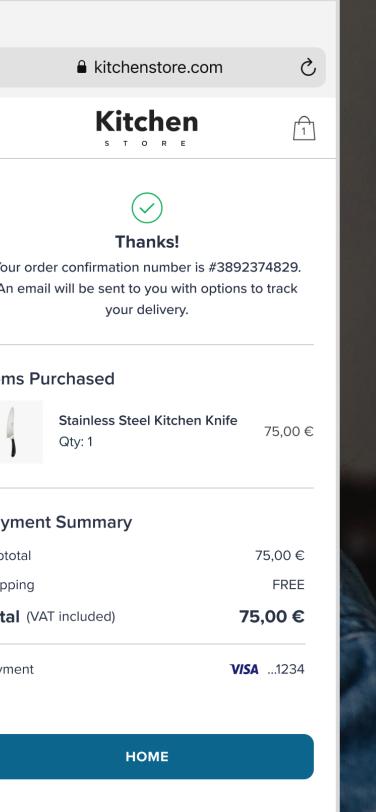
Log in to Wallet



Consent



Order complete

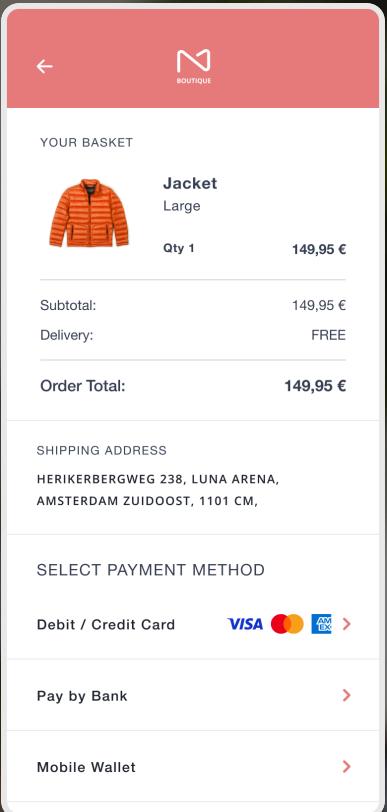


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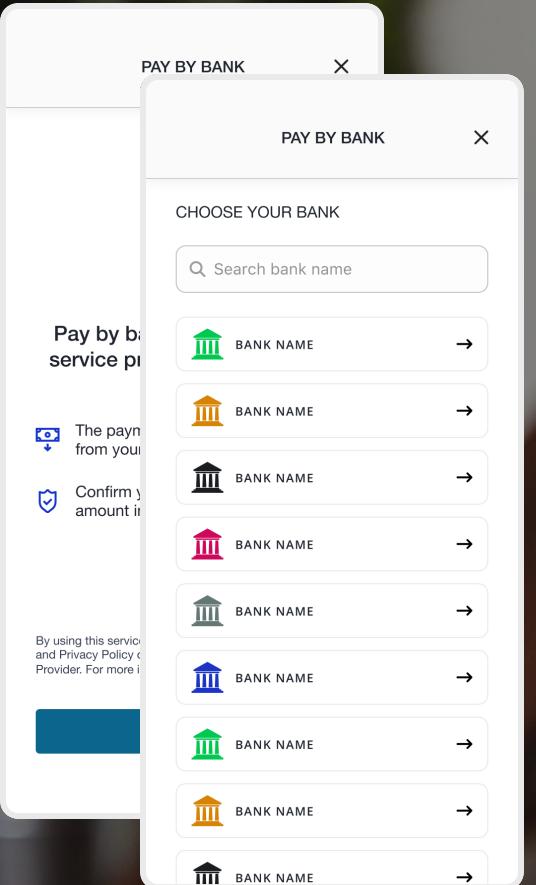
Vision for the EU DI wallet: secure and convenient payments

Simplifying and standardising payment authentication for pay by bank

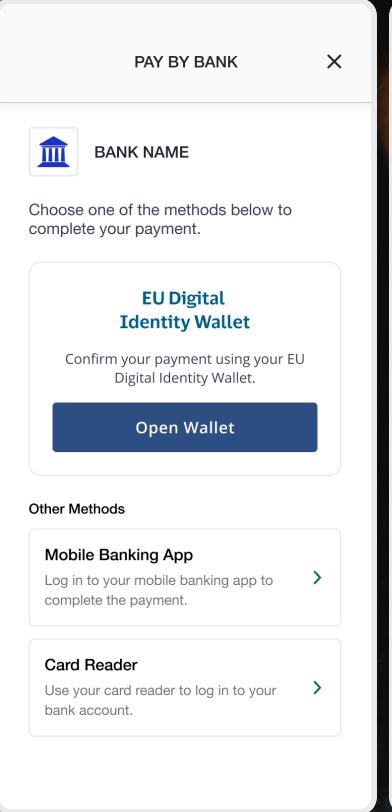
Payment method selection



Consent capture and bank selection



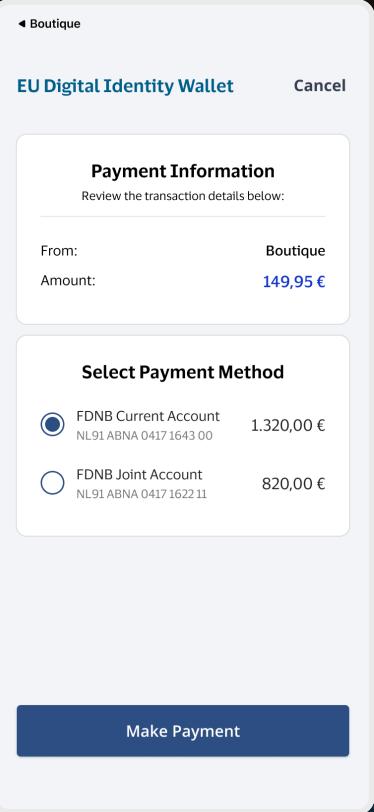
Bank authentication options



Log in to Wallet



Review and confirm payment



Order complete



For illustration purposes only

Deliverables



EWC Implementation Guides

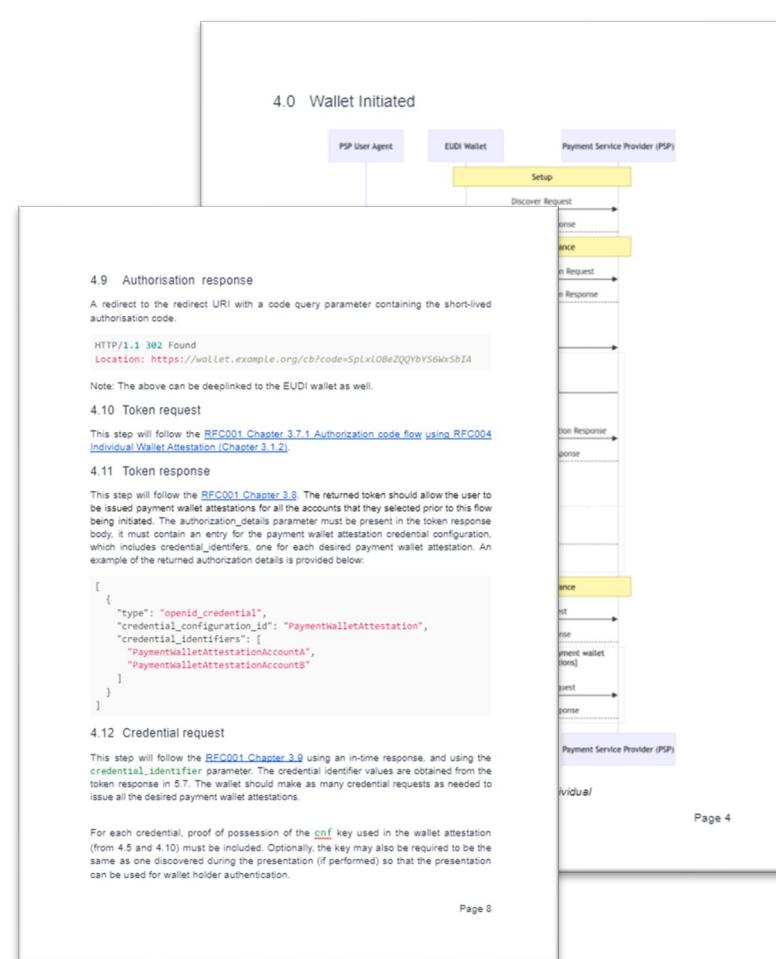
Functional specifications describing flows and UX/UI between all actors involved

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



EWC RFCs

Technical specifications based on IGs



EWC + NOBID Payment Rulebook

EWC and NOBID specifications have converged in a collective effort towards a « Payment Rulebook » that has been shared with the EC on the 27th of March

- The Commission plans to establish a dedicated repository for sector-specific rulebooks. We are invited to submit our contents for the Payments Rulebook. Within the next weeks, we will receive a template for this which we need to fill in.
- The Commission wants to publish “Use Case Manuals”, which are higher-level documents introducing the interested audience to a usage of the EUDIW. For payments, the EC will compile a draft version which we then will receive for comments and feedback.

Whitepapers and ecosystem engagement

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

<https://github.com/EWC-consortium/eudi-wallet-papers-and-discussions>



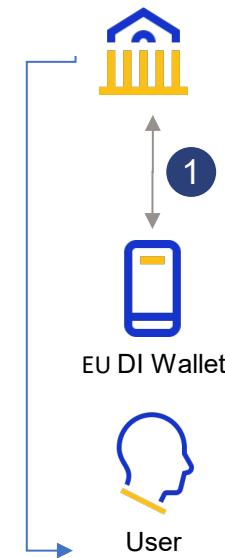
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Registration of the EU DI Wallet with the bank

Banks can take advantage of EU DI Wallets' capability to store and present attestations other than your national ID or your mobile driver's license. A dedicated attestation issued into the user's wallet acts like a secured note stating that "we as bank know this user and wallet, and they are registered to use services for this account".

Thus, the EU DI Wallet must be registered by the bank before first usage.

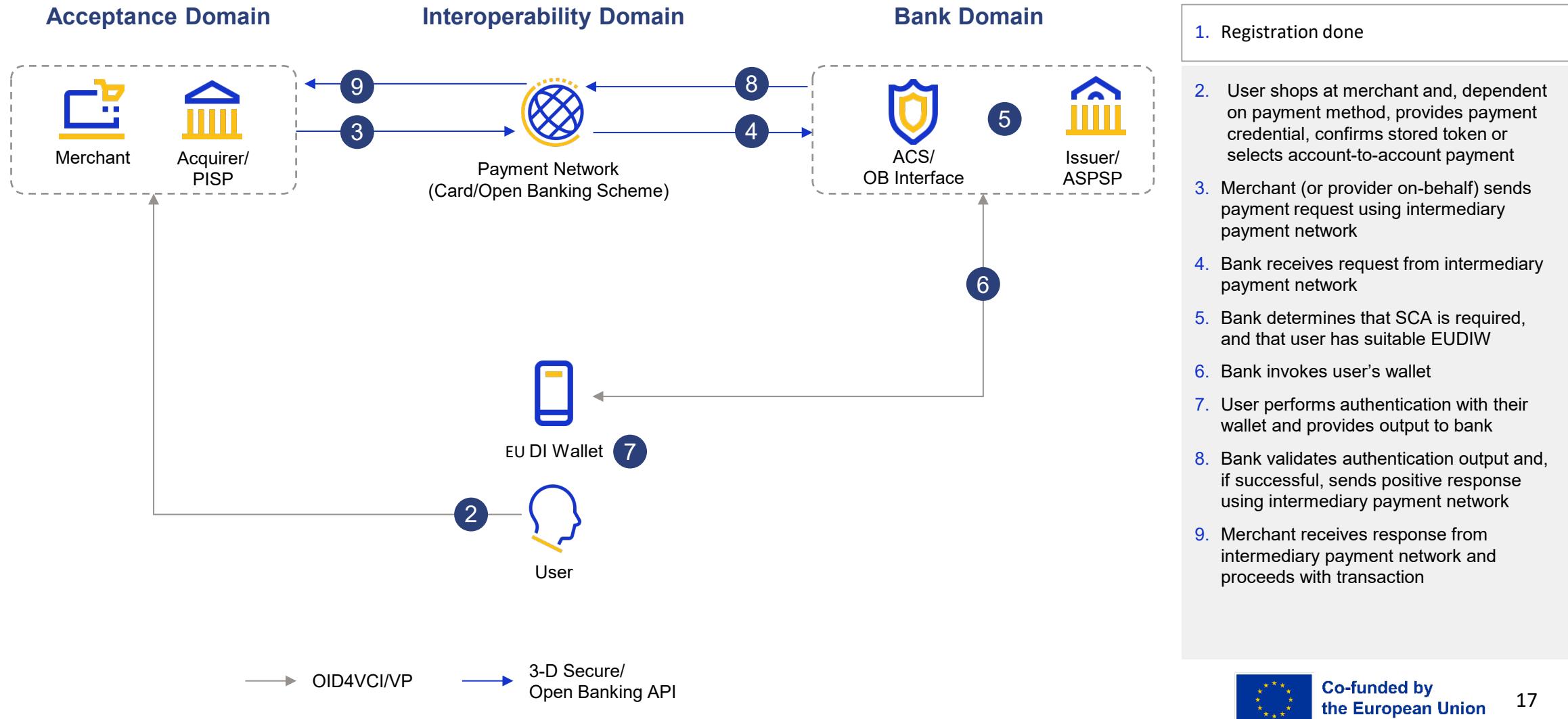
1. User requests his/her wallet to be registered for a given account
2. Bank performs user authentication **through existing, PSD2-compliant mechanism**
3. Bank checks the wallet for suitability
4. Wallet generates key pair – the private key is used to securely sign messages; the corresponding public key is disclosed to the bank and is used to verify these messages
5. The bank may optionally request the PID to perform additional verification against the data it has on file.
6. Bank **places an individual SCA attestation** ("payment credential") into user's wallet:
 - Device-bound: usage is always linked to the user's keys on a given device
 - 2FA: user needs to authenticate with another factor to activate key for signing
 - Resulting cryptographic signature is verifiable by the bank



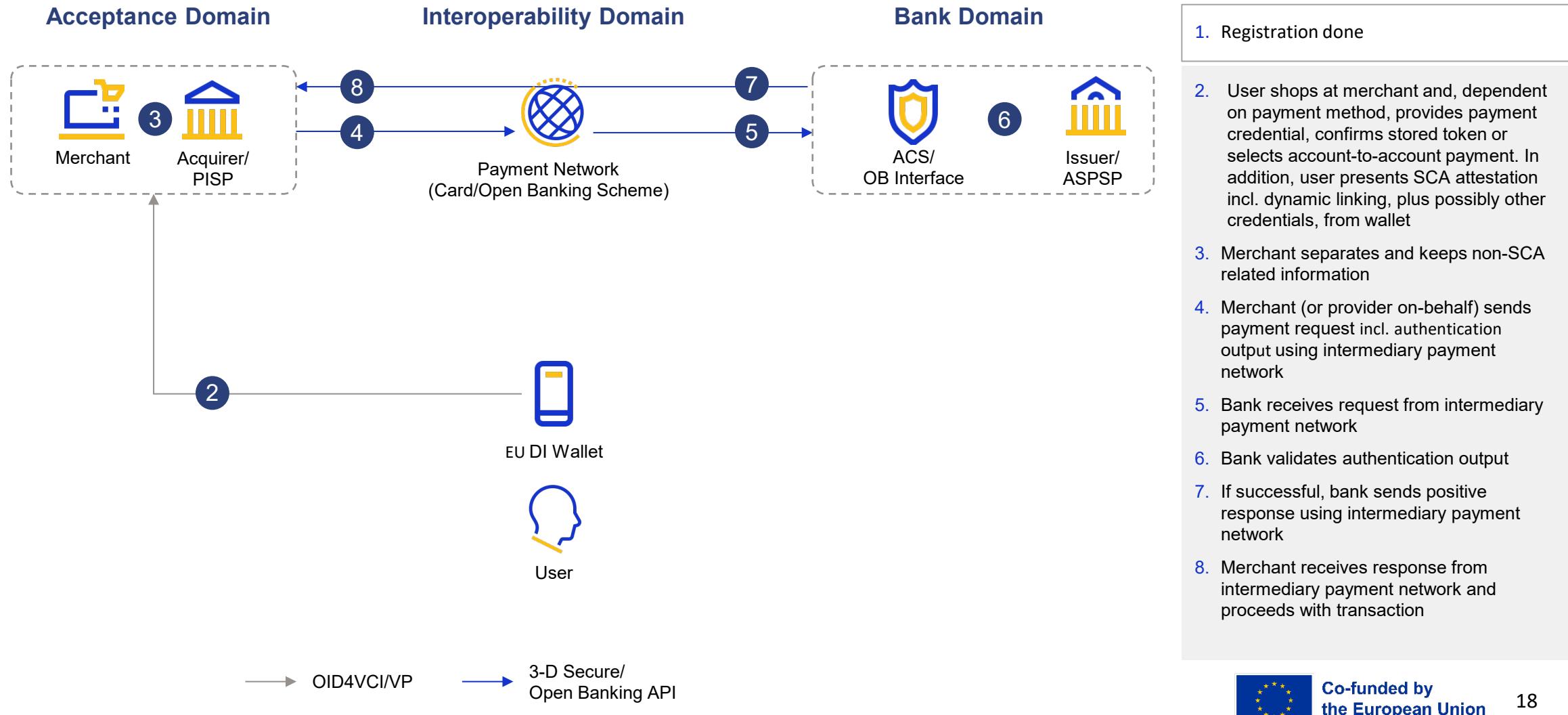
1. Payment Service Provider (ASPSP, Issuer or intermediary) places a "SCA Attestation" in user's wallet

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

Bank-led Strong Customer Authentication (SCA)



Merchant-captured Strong Customer Authentication (SCA)



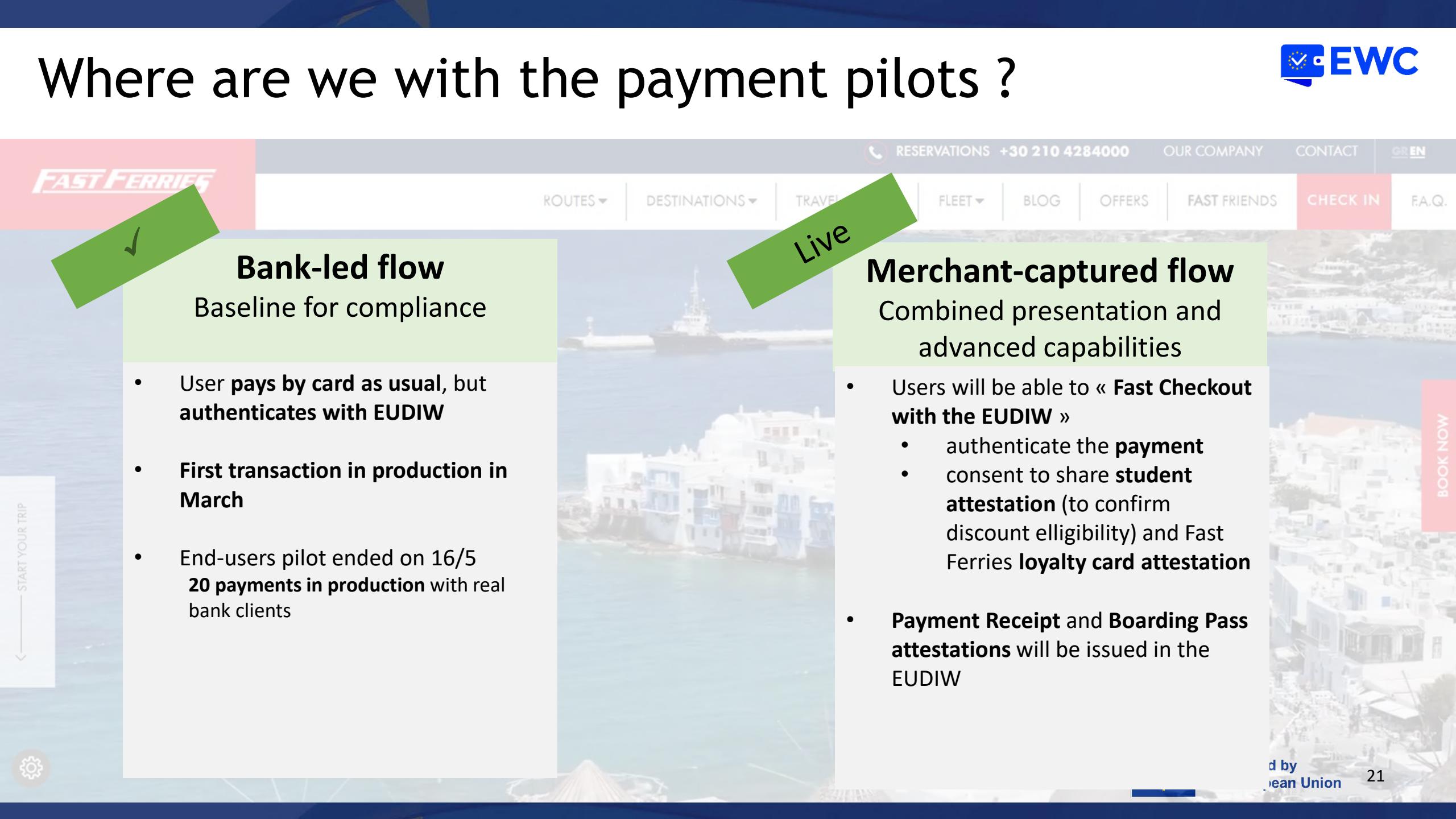
EWC Payment pilot

EWC Payment Pilot description

- **Scope**
 - Strong Authentication with EUDIW for online card payments
 - Production environment
 - Based on EWC specifications (*)
- **Objectives**
 - Technical PoC: demonstrate that EWC payment specifications work technically and collect early feedback from few end-users
- **Expected outcomes and success criteria**
 - 50+ transactions in production in Q2 2025
- **2 phases approach**
 - Bank-led authentication (March): baseline for compliance
 - Merchant-captured authentication (June): fast checkout + eReceipt + Boarding pass



Where are we with the payment pilots ?



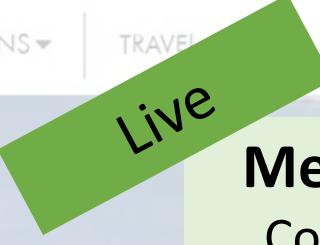
✓

Bank-led flow

Baseline for compliance

- User **pays by card as usual**, but authenticates with EUDIW
- First transaction in production in March**
- End-users pilot ended on 16/5
20 payments in production with real bank clients

START YOUR TRIP



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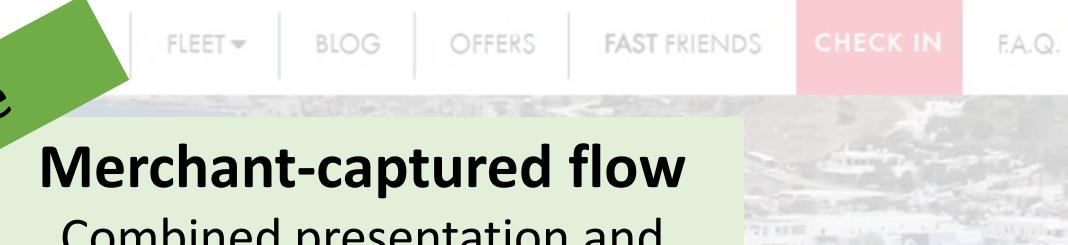
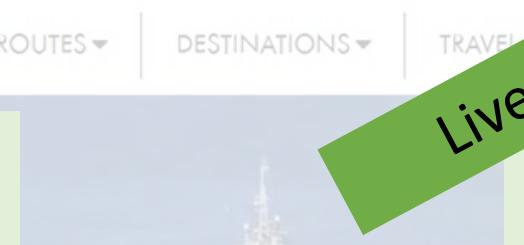
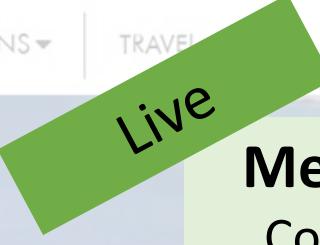
ROUTES DESTINATIONS TRAVEL FLEET BLOG OFFERS FAST FRIENDS CHECK IN FA.Q.

Merchant-captured flow

Combined presentation and advanced capabilities

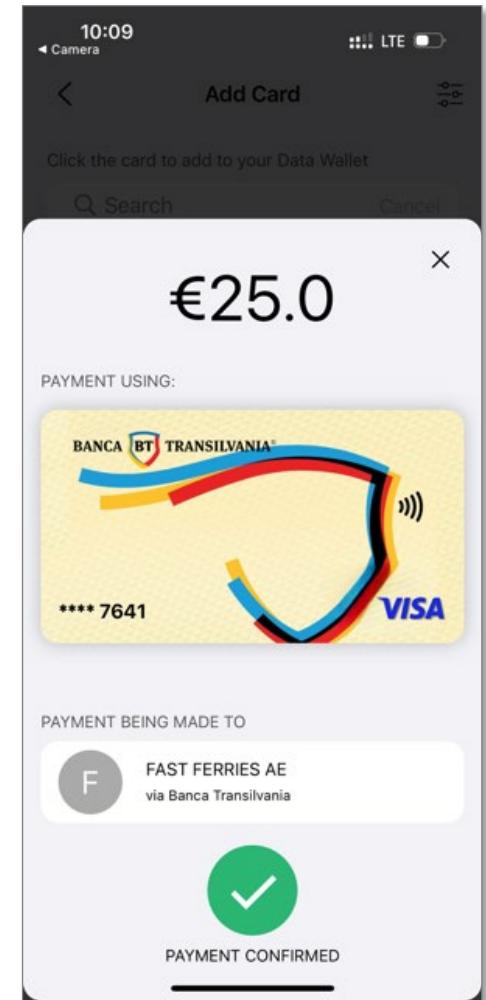
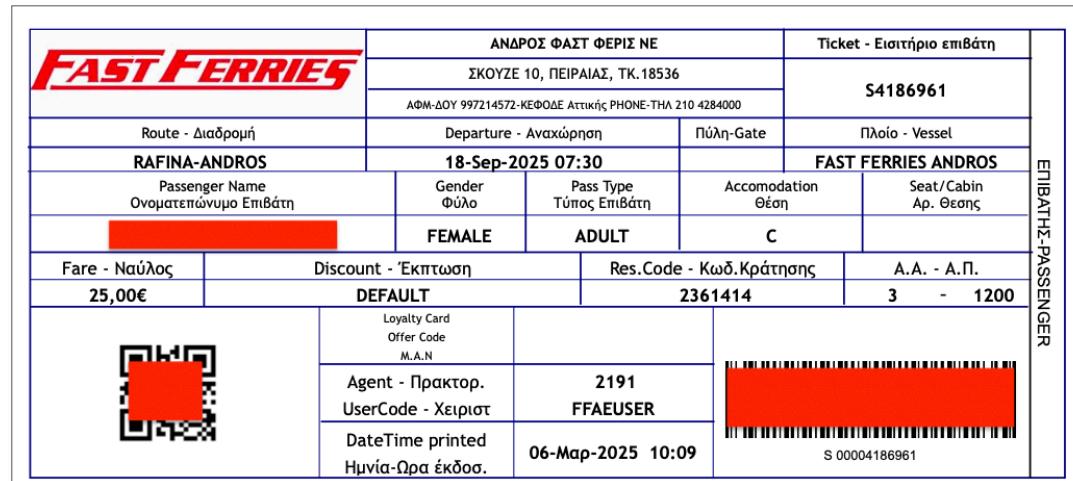
- Users will be able to « **Fast Checkout with the EUDIW** »
 - authenticate the **payment**
 - consent to share **student attestation** (to confirm discount eligibility) and Fast Ferries **loyalty card attestation**
- Payment Receipt and Boarding Pass attestations** will be issued in the EUDIW

BOOK NOW

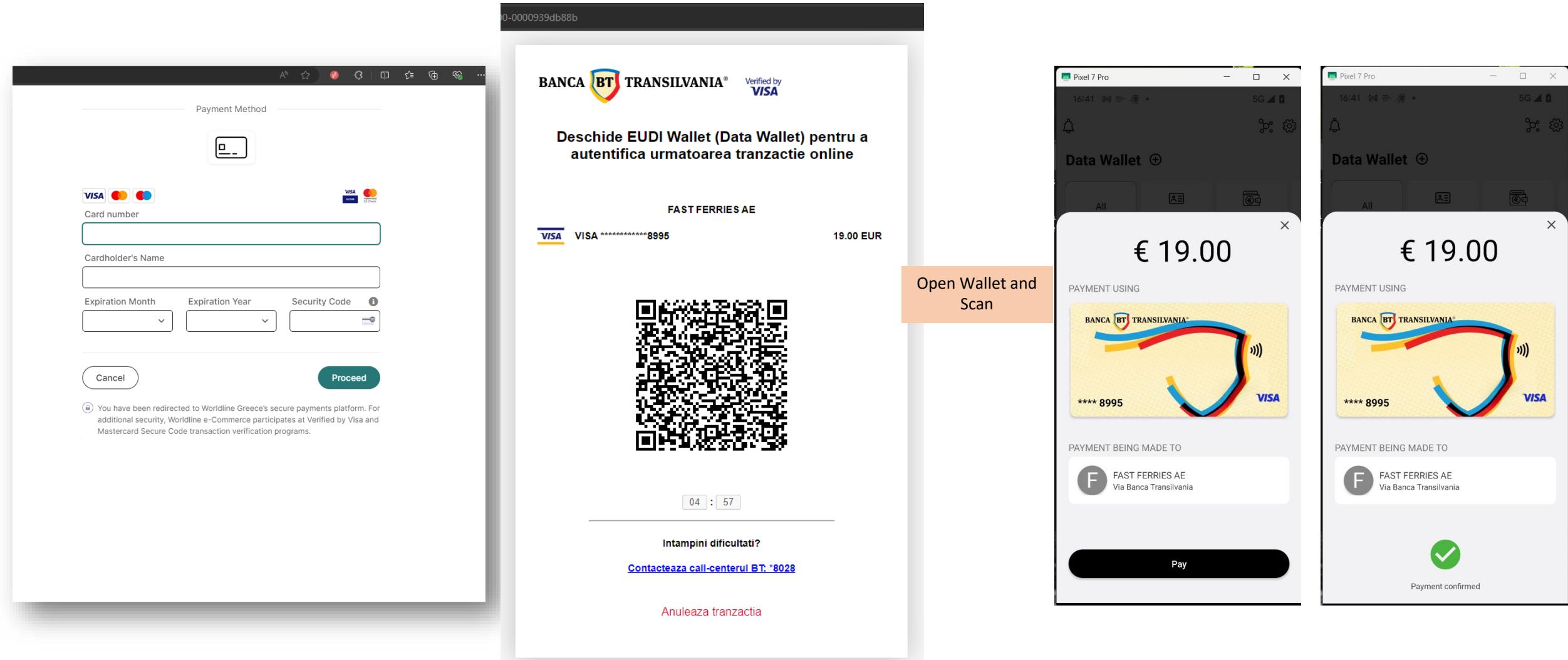


First ever EUDIW payment in production !

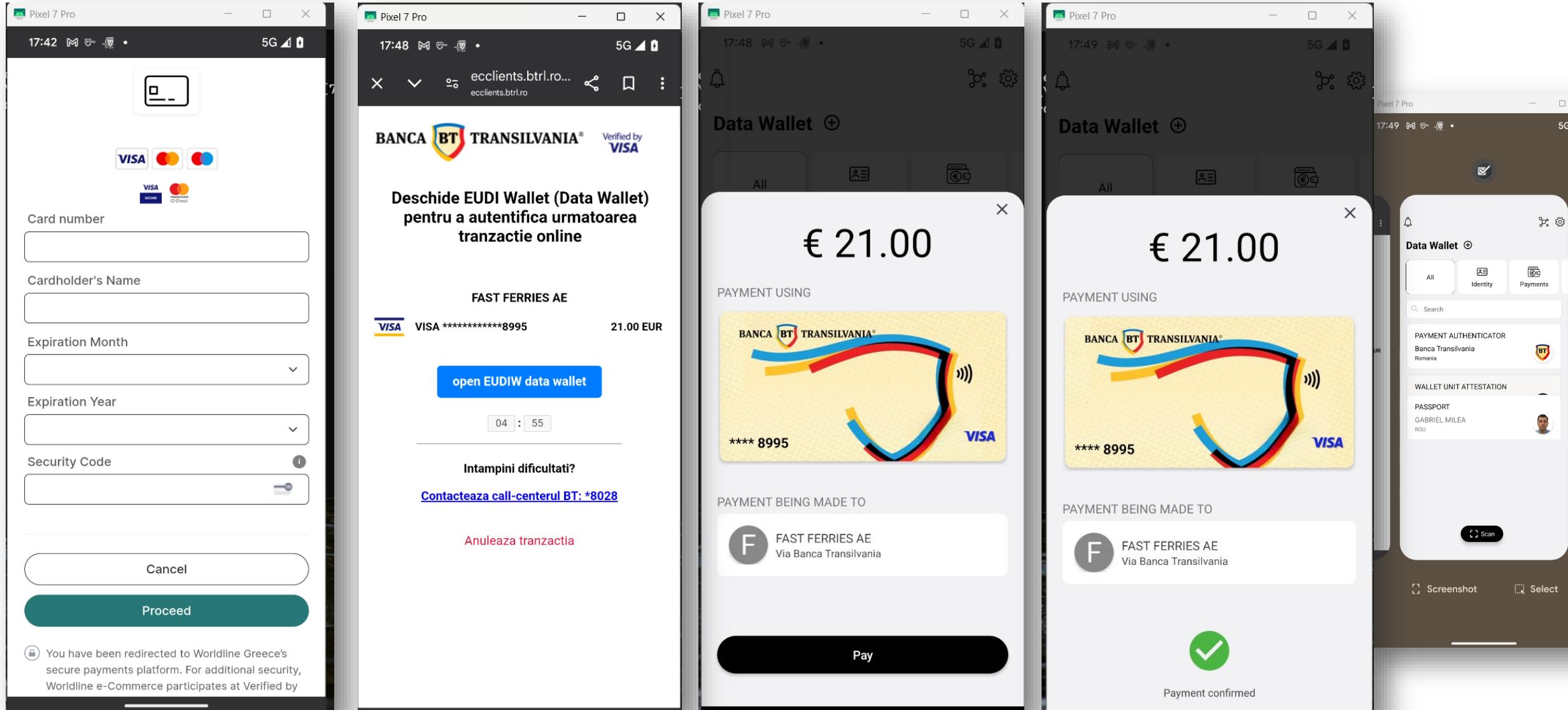
- On the 6th of March 2025, EWC delivered its first **online payment in production**: a € 25 Ferry ticket
 - Bank led flow
 - Online card payment SCA authenticated with an EUDIW



Cross-device flow



Same-device flow

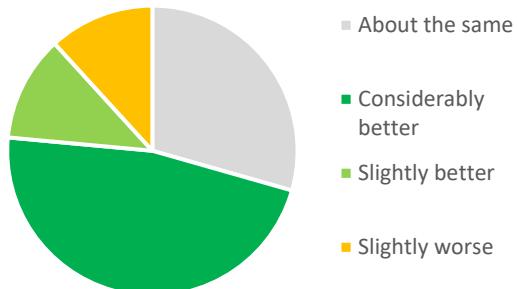


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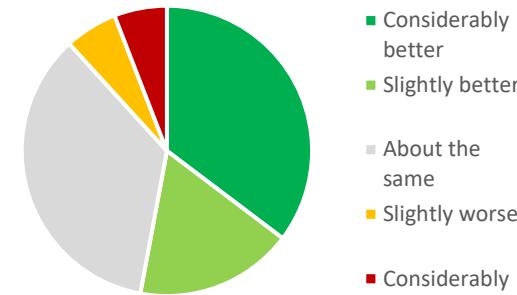
Pilot user feedback overwhelmingly positive

"How would you rank the EU digital wallet experience versus the way you currently authenticate online payments with the Banca Transilvania app today ? (Please only take into consideration the payment phase, not the registration with the bank phase)"

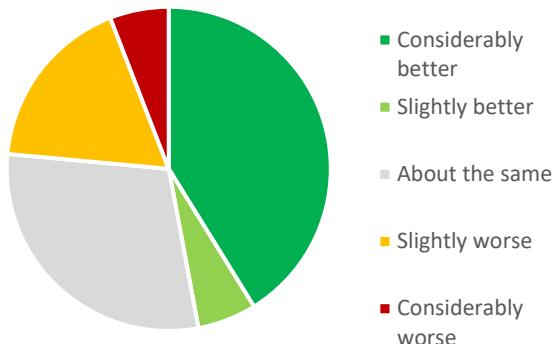
Overall experience



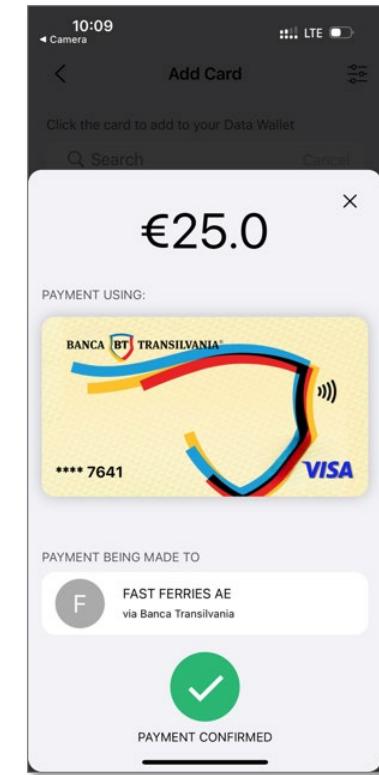
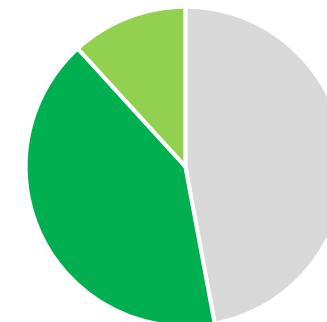
Ease of use



Data protection



Payment security

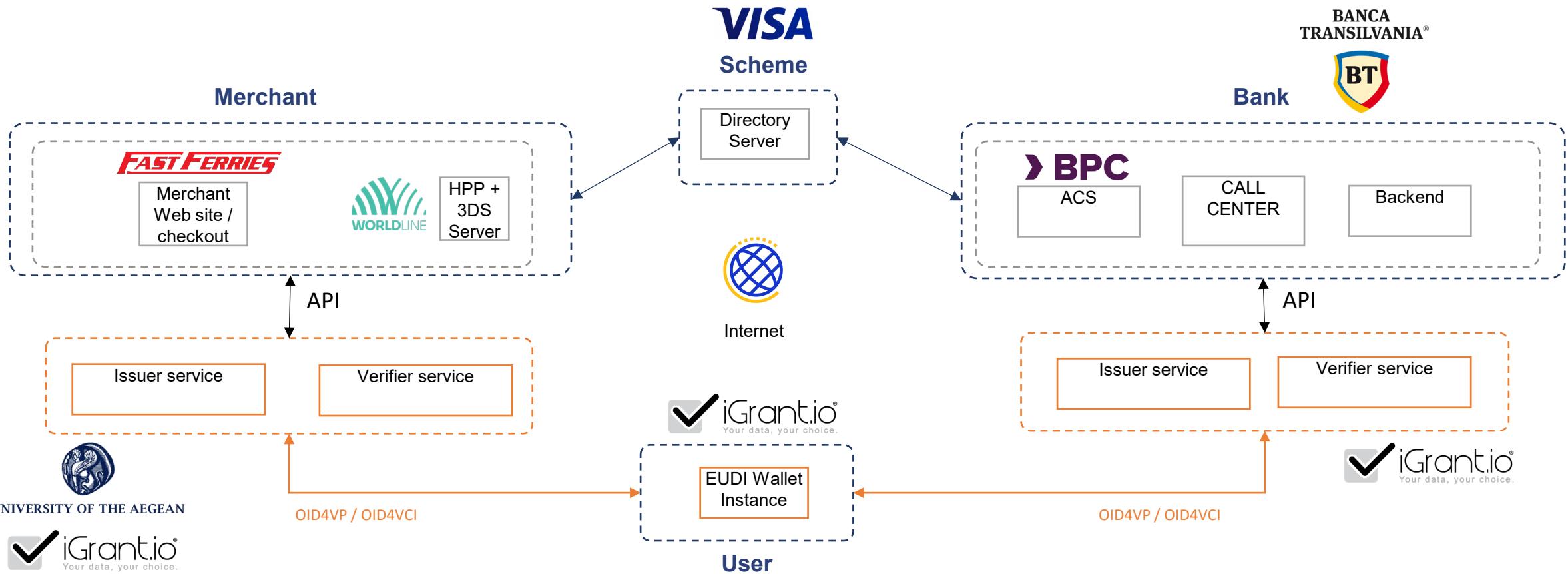


Results from using the EUDIW to authenticate payment donations at a romanian charity merchant in production / bank-led flow – DISCLAIMER: results are based on only 17 digital payment savvy respondants, briefed individually on EUDIW and are therefore not necessarily representative of the actual market situation



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Pilot architecture



This architecture reflects the components involved in the SCA – it does not include the actual money movement (acquiring/authorisation for card, SCT/SCT Inst for PIS)



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Regulatory considerations

The solution is designed to satisfy the requirements for SCA according to PSD2

- **Two factor authentication (knowledge or inherence and possession):**
 - Wallet locally authenticates user through **knowledge** (e.g. password/PIN) or **inherence** factors (e.g. device biometrics)
 - **Possession** realised through the “SCA attestation” – a verifiable credential linked to the holder’s private key, which in turn is bound to the wallet instance (i.e. the device), and signed with the bank’s private key
- **Dynamic Linking:**
 - Supported with the latest enhancements for signed transaction data in OID4VP. The wallet will display the transaction details when the user is asked to confirm

The solution is designed to avoid delegating authentication and hence outsourcing should not be necessary

Under PSD2, the bank can delegate authentication to another party. Delegated authentication requires an outsourcing agreement between the bank and the party that authentication has been delegated to.

The **solution is designed to avoid delegating authentication and hence outsourcing is not necessary** for the following reasons:

- To issue an “SCA Attestation”, the **bank authenticates the account holder** using an existing SCA-compliant mechanism under the control of the bank and securely associates them with his/her wallet
- The bank (or an intermediary on behalf of the bank) issues an “SCA Attestation” to the EU DI wallet of the account or card holder, which means that the bank relies on the wallet as “**third party technology**” only – similar to how banks today are utilising a phone’s fingerprint reader or Face ID capability for their SCA solutions
- **The decision on SCA stays with the bank** – in the case where the payee/PISP captures the authentication output, it is passed on to the payer’s bank. In either case the bank remains in control and can decide whether to accept, step-up with additional measures, or to decline



WE BUILD

WE BUILD at a glance



- Positive decision European Commission on Feb 7 2025
- WE BUILD is led by the Dutch and Swedish government authorities Ministry of Economic Affairs (Netherlands), KVK (Netherlands) and Bolagsverket (Sweden).
 - 197 participating organisations
 - 24 Member States and 4 other countries
- Use cases
 - Wallets for Businesses
 - KYS/KYB, create company branch, eInvoicing, foreign tax declaration, ..
 - Wallets for Payment and Banking
 - Consumer and Business payments, Consumer (KYC) and Corporate Banking (KYB)
- WE BUILD is expected to start work in September 2025, running for 24 months.

Use cases for banking and payment

Consumer banking



Demonstrate value of EU DI wallet in everyday consumer banking services – from account opening, log-in to online banking, banking services like setting up direct debit

Corporate banking

Demonstrate value of EU DI wallet in business banking including power of attorney – cross-border account opening, issue payment credentials and attestations for KYS



Consumer payments

Demonstrate how EU DI can enable in-person payments, ecommerce, and peer-to-peer payments with cards and account; enrich payments with identity attributes



Business payments



Demonstrate how EU DI can bring value to business payments related to supply chain such as eInvoicing, eReceipts and government disbursements

WP3 Payment & Banking organisation

WP3: Wallet for Payments and Banking

- ICTU, Netherlands
- Visa Europe, UK/Norway

Use case	Lead	Co-Lead
PA1: Consumer Banking	Greek Ministry of Digitalisation - Greece	IDNow - Germany
PA2: Consumer Payments	Dutch Payment Association - Nederlands	Visa Europe – UK/France
PA3: Corporate Banking	Bundesanzeiger – Italy	Intesa San Paolo - Italy
PA4: Corporate Payments	State Treasury of Finland - Finland	OnePoint - France



Thank you