

Potential
For European Digital Identity

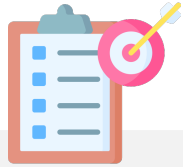


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Reflecting on POTENTIAL's results

29/09/2025

Strategic drivers behind the European Digital Identity framework



EU Digital Decade Strategy

Need for a universally accepted eID for citizen

The EU Digital Decade sets clear 2030 targets, including **universal access to a trusted and interoperable digital identity**.

→ Goal is to provide **every citizen** with a **secure**, widely **recognized** way to access both public and private **services**, online and offline, while reinforcing Europe's digital **sovereignty**.



Entry into force of eIDAS 2 regulation

European Digital Identity Framework and Union Toolbox (ARF & Reference Implementation)

The entry into force of the eIDAS 2 regulation sets a clear legal framework for digital identity. It includes:

- the European Digital Identity **Framework**, **harmonizing practices** across Member States;
- the **Union Toolbox (ARF)**, defining technical, security, and interoperability standards;
- a **Reference Implementation**, serving as a baseline for Member States to build their wallets.

→ This ensures **coherence**, **security**, and **interoperability** across Europe.



Digital Europe Programme

Deployment and acceleration of best use of digital capacities and interoperability

The *Digital Europe Programme* funds and supports the rollout of strategic initiatives such as the **Large Scale Pilots (LSPs)**. Its objectives are to strengthen Member States' digital capacities:

- **test concrete use cases** of the EUDIW;
- **accelerate** cross-border interoperability;
- **foster adoption** by citizens, administrations, and businesses.

→ It acts as the **practical driver** turning the EU's digital identity vision into reality.

Key values of the EUDIW

The EUDI Wallet embodies Europe's vision of a secure, trusted, and inclusive digital identity. Built on sovereignty, reinforced by certification, and enabled through interoperability, it ensures that citizens retain control of their data while fostering innovation and cross-border services.

1 Sovereignty

- The EUDI Wallet is **backed by EU Member States** and built within a **common legal framework** (eIDAS 2) ensuring neutrality and independence.
- The European approach is about **public control of identity and sensitive data**, unlike proprietary, commercial solutions.

2 Certification & Trust

- The EUDI Wallet will be certified at the highest assurance levels (substantial, high). The **EU is setting up harmonized certification schemes** covering strong authentication, biometric protection, and interoperability.
- Certification ensures that the Wallet can be used for **the most sensitive use cases** (public services, justice, healthcare).

3 Interoperability and Inclusion

- The EUDI Wallet is not a stand-alone app: it's a **common interoperable layer** connecting 27 Member States and **hundreds of public and private services**.
- Ongoing pilots bring together banks, payment providers, public administrations. It represents a **true ecosystem**, not a closed silo.
- The European Wallet is designed to be **accessible to every citizen, regardless of device or income**. It is a universal trust infrastructure.

Chronology of LSP deployment and regulation

- Regulatory milestones
- Large Scale Pilots (LSPs)



01/07/2023

20/05/2024

22/10/2025

End of 2026

End of 2027

Start of the first round of Large Scale Pilots projects to support the implementation of the European Digital Identity Framework

Publication of the eIDAS 2 Regulation

Start of the second round of LSPs

Obligation for Member States to offer a wallet

Obligation for VLOPs to recognize the wallet

4 Large Scale Pilots

2 Large Scale Pilots

DC4EU ➤ Educational and social security use cases.

Potential For European Digital Identity ➤ SIM eRegistration; Bank account opening; eDriving License; eGov Service; eSignature / ePrescription.

EWC ➤ Travel use cases, focusing on payment journey and organizational digital identities.

NOBID CONSORTIUM ➤ Payment use cases and use of eDriving licence.

EUDI Wallet
User centric



Business Wallet



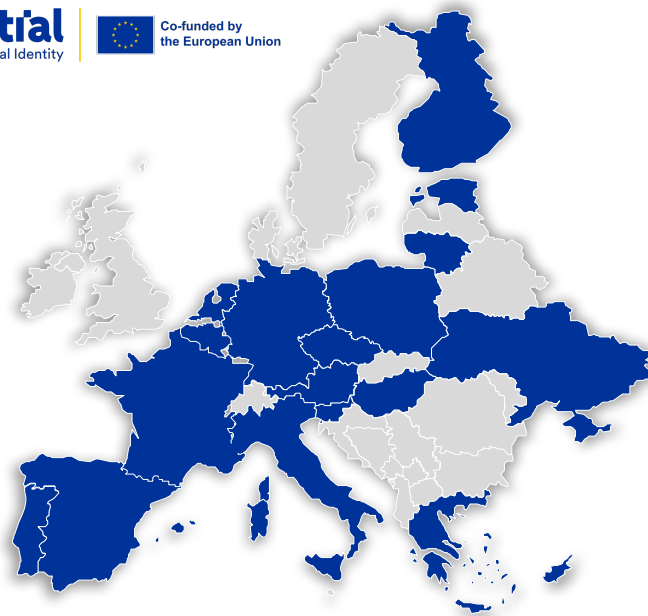
- Wallet for Travel
- Wallet for Payment



- Supply Chain
- Wallet for Payment
- Wallet for Business

POTENTIAL in figures

Potential
For European Digital Identity



19

Countries



161

Public and private partners

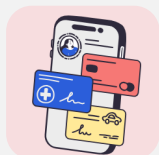
Ministries, state operators, research centres, major companies and start-ups acting as wallet issuers, credential issuers, and relying parties

58

Observers

Forming a broader community of external stakeholders from the digital identity ecosystem following the progress of the project and the EUDIW

→ All roles of the eIDAS 2.0 ecosystem were addressed during cross-border piloting:



Wallet providers



Issuers



Service providers

56 public administrations

105 private sector partners

→ Cross-border cooperation and shared insights, vital for the wallet's pan-European implementation.

POTENTIAL, a first glimpse of the future ecosystem of the EUDIW

Member States administrations



Wallet Issuers



Relying Parties



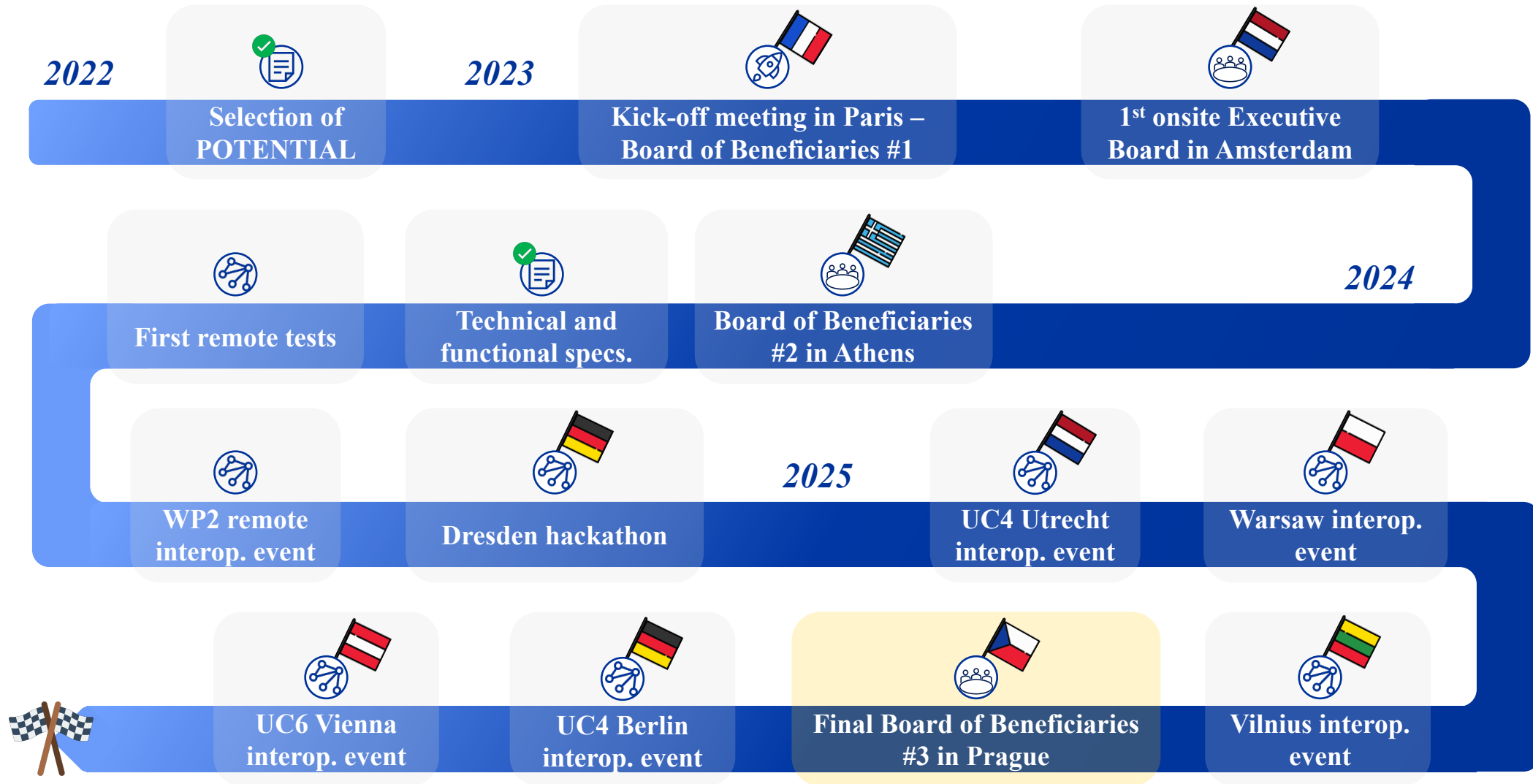
Technology Providers



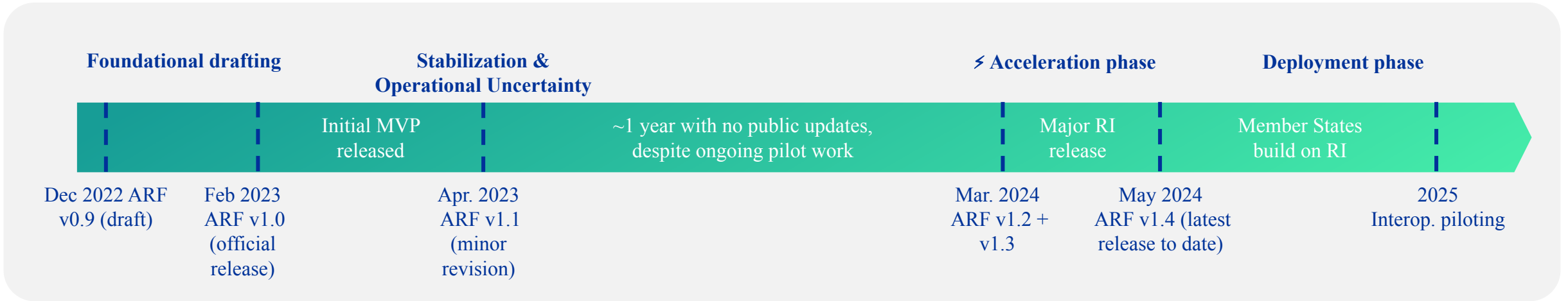
Credential Issuers



An overview of the project's main events



Technical readiness and adaptation



Delays in the publication of more complete and stable versions of the ARF and Reference Implementation during the first year of the project



Challenge of aligning all stakeholders to take informed decisions on key components for piloting



Demonstrated adaptability and importance of flexibility and proactive planning for maintaining stakeholder engagement in large-scale pilots

2 Major, consortium-wide interop events and many other WP/UC-specific interop events organized:

Warsaw Interop Event

- 135 participants
- 17 MS represented
- 20 WI
- 20 RP
- Launch of the Playground
- 258 tests performed
- 190 successful transactions

Vilnius Interop Event

- 100 participants
- 14 MS represented
- 17 WI
- 17 RP
- +1300 tests performed
- +1000 successful transactions
- 284 case of cross-border compatibility between WI and RP

WP/UC-specific interop events

- April-June 2024: WP2 remote interop event to test existing national implementation components
- 28-30/08/2024: hackathon event in Dresden
- 26-27/02/2025: UC4 interop event in Utrecht
- 2-3/07/2025: UC4 interop event in Berlin
- 07/2025: UC6 interop event in Vienna

+5700

Cross-border tests conducted:

➔ Showcasing the solutions' capability for cross border interoperability

➔ Highlighting the need for further harmonization of technical standards across MS

Contributions to ARF, Reference implementation and standards' refinements

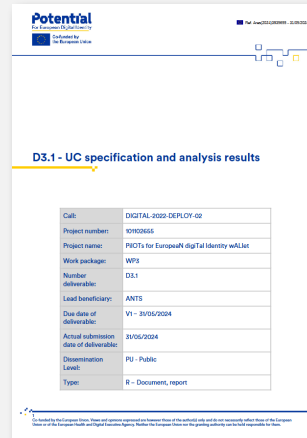
➔ Provided critical qualitative and technical feedback on the successive versions of the ARF and its technical and functional specifications, contributing to the development of a more robust digital identity framework

D2.1 – Functional and technical recommendation

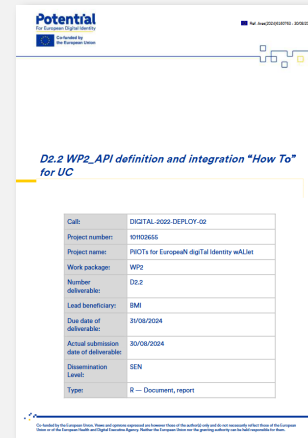


➔ Provided a comprehensive and UC-relevant set of technical, non-technical and business requirements, notably regarding the trust model, including API specs. on proximity and remote presentation and issuance

D3.1 – UC specifications

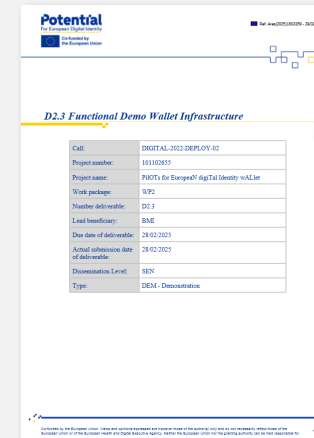


D2.2 – API definition and integration "how-to" for UC



➔ Provided lessons learned on best practices for future implementations through detailed checklists for national ecosystem implementation, setting up the playground, and organizing interop. events

D2.3 – Functional demo wallet infrastructure



A user-centric approach

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Ref. Area/2024/0160942 - 30/08/2024

D2.4 WP2_ Recommendation on security and data privacy analysis provided by EUDIW contractor

Call:	DIGITAL-2022-DEPLOY-02
Project number:	101102655
Project name:	PIOTs for EuropeAN digiTal Identity wAlllet
Work package:	WP2
Number deliverable:	D2.4
Lead beneficiary:	BMI
Due date of deliverable:	31/08/2024
Actual submission date of deliverable:	30/08/2024
Dissemination Level:	SEN
Type:	R — Document, report

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D2.4 – Recommendation on security and data privacy analysis provided by EUDIW contractor



POTENTIAL pro-actively developed a comprehensive risk analysis of the EUDIW ecosystem as described in the available versions of the Architecture and Reference Framework (ARF v1.4)

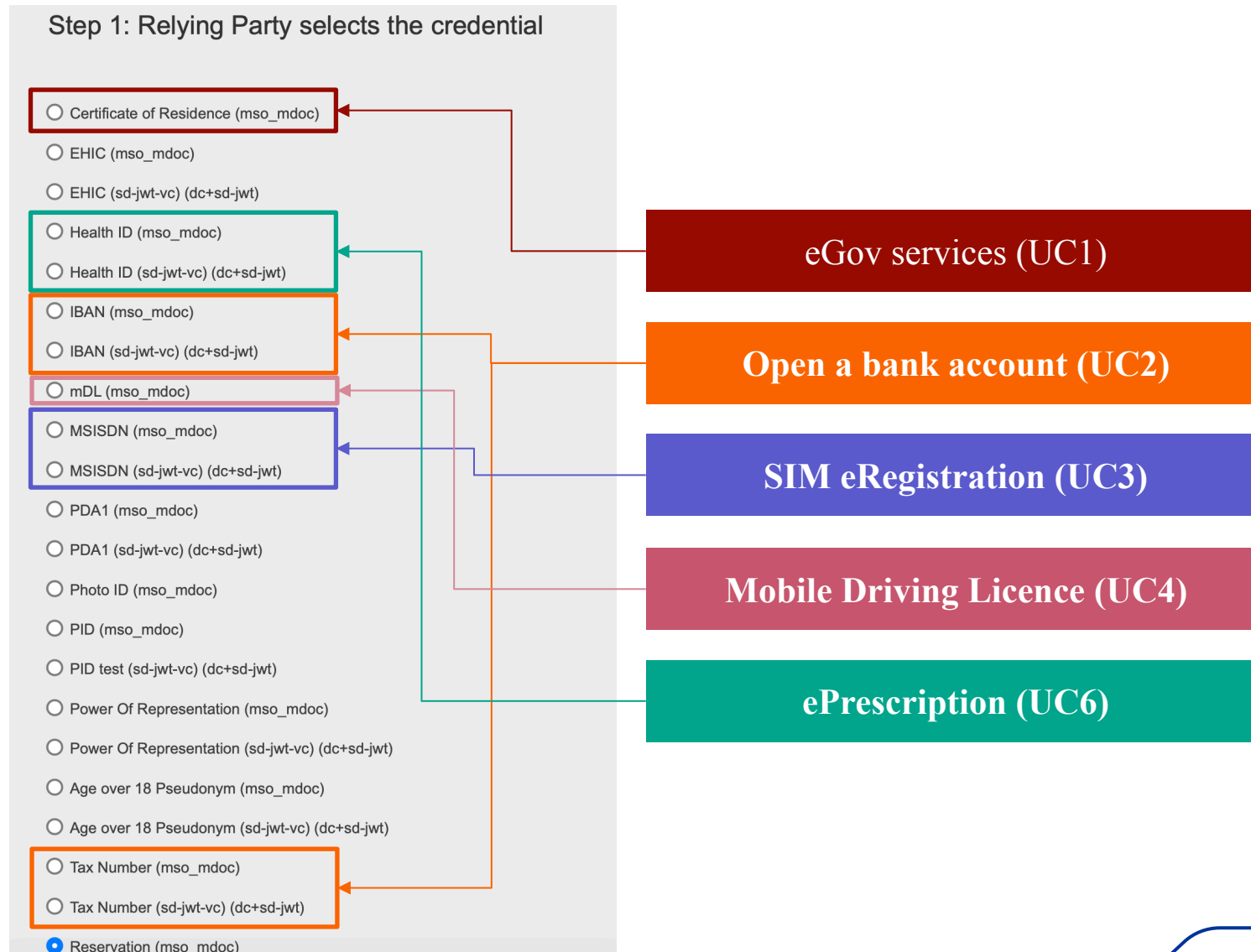


Prioritized user consent and transparency, aligning with EU data protection regulations and emphasized data sovereignty, ensuring users have control over their personal information





Implemented privacy-by-design principles to enhance trust and security and pave the way for broad user adoption

POTENTIAL was a major contributor to the EUDIW framework as we know it





eGov services (UC1) 



13
Member States

+350
Tests performed

Open a bank account (UC2) 



10
Member States


+680
Tests performed


SIM eRegistration (UC3) 



6
Member States


+1300
Tests performed

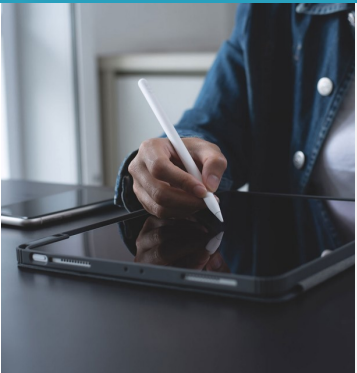
Mobile Driving Licence (UC4) 



16
Member States


+2890
Tests performed


Remote QES (UC5) 



12
Member States

+270
Tests performed

ePrescription (UC6) 



11
Member States

+260
Tests performed

A diversity of every-day life UC piloted

eGov Services



- PID successfully issued from the wallet and retrieved by the RP to authenticate the user for accessing public services online and in proximity, nationally and abroad
- Successful wallet authentication and presentation of a certificate of residence as (Q)EAA remotely

355+ transactions completed

Bank account opening



- PID successfully issued from the wallet and retrieved by the RP to authenticate the user for opening a bank account 100% online, nationally and abroad
- Successful integration in the banks' system of the wallet or QTSP-driven QES

682+ transactions completed

SIM eRegistration



- Successful use of the wallet to allow the user to register for a SIM 100% online, nationally and abroad.
- Successful integration of the personal MSISDN in combination with the PID inside the wallet as authentication mean.

1300+ transactions completed

Mobile Driving Licence



- Successful issuing of the mDL in the wallet
- Successful presentation and verification of the mDL online and in proximity

2892+ transactions completed

Qualified electronic signature



- Successful QES of RP-provided or local documents using QSCDs operated by a QTSP
- Wallet-driven (hub controlling all transactions) or QTSP-driven

271+ transactions completed

ePrescription



- Successful proximity HealthID presentation to a device.
- Successful remote HealthID presentation.

264+ transactions completed

➔ Covering both public and private sectors, ensuring the wallet's applicability across various domains

➔ Demonstrated the wallet's versatility in addressing everyday-life digital identity needs



UC1

Wallet usage for eGovernment services



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IT



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UC1 | Progress made and next steps

■ Moving towards 500+ unique cross border transactions (test + pilot)

- In more than 50 country combinations
- Running proximity and remote scenarios
- For identification, authentication, representation and residence
- And counting ...

■ Which already provides a solid basis for

- Lessons learned from various perspectives, being users, relying parties, issuers and wallet providers

Potential

For European Digital Identity



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UC2

Electronic identification for account opening
for the financial industry



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UC2 | Scenarios

■ Use case 2 has worked on 3 scenarios

Scenario	Setting	Description
1. Identification and authentication of the user	Remote	Authenticate a person and present the mandatory information to the bank of his/her choice via PID and if needed other (qualified) electronic attestation of attributes from his/her wallet.
2a. Wallet-driven QES	Remote	The same as scenario 1 with the additional step of digitally signing the documents related to the opening of the bank account. The signing process is initiated by the user from within the wallet.
2b. QTSP-driven QES	Remote	The same as scenario 1 with the additional step of digitally signing the documents related to the opening of the bank account. The signing process is initiated by the bank.

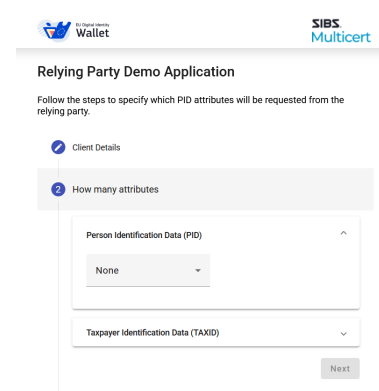
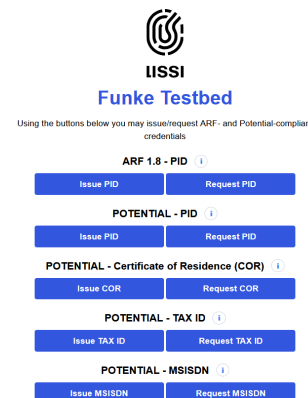
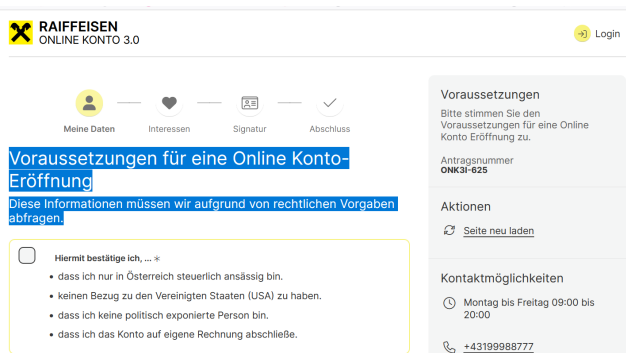
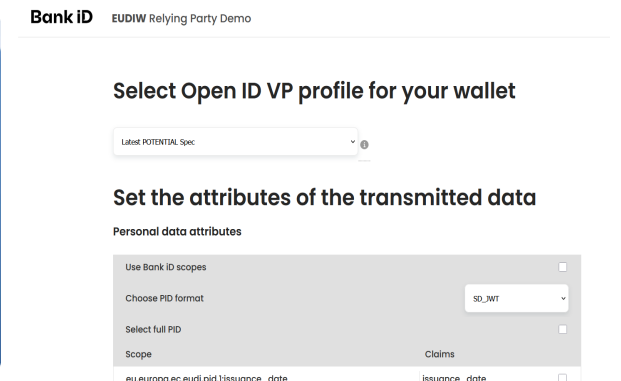
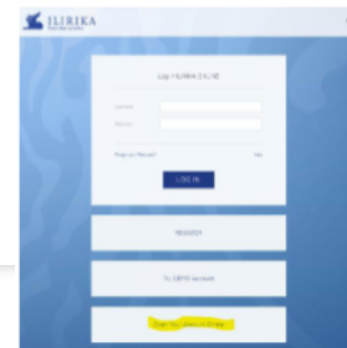
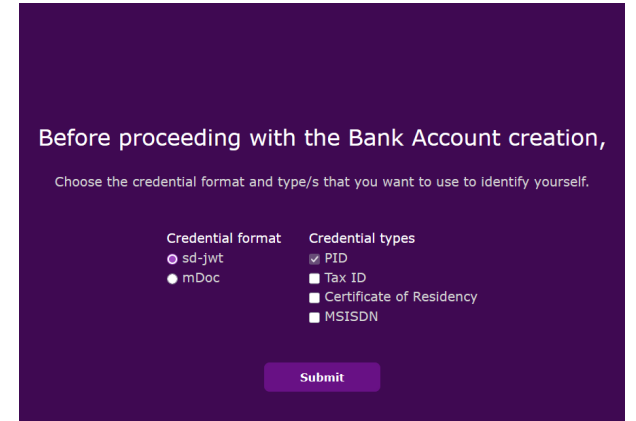
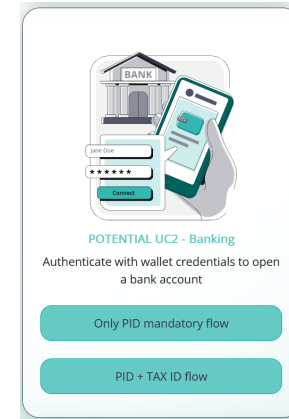
- Certificate of Residence (issued by UC1),
- MSISDN (issued by UC3) and,
- Tax ID (issued by WP2 national teams).

UC2 demo | Bank account opening

■ Up to the 15th of June 2025 in UC2 nine relying parties demonstration portals participated in cross border testing. Indicative screenshots are depicted in this slide.

■ Five of the dem. portals are accessible through the public internet :

- <https://rp-demo.lab.euwallet.cz/>
- <https://teste.multicert.com/eudiw/portal/>
- <https://playground.lissi.io/funke>
- <https://pilot.didaas.entrust.com:11443/>
- <https://demo.wallet-gw.namirial.com/playground/login/>



UC2 | Progress made and next steps

- In total 13 countries were actively involved in UC2 and 10 of them with the role of the relying party.
- Well defined testing scenarios,
- Various remote and f2f testing events were organized
- Starting from January 2025, tests were organized to confirm technical readiness of the national solutions, as well as the interoperability between these solutions
- A total of 722 (by the 15th of June 2025) tests - and pilot runs in pre-production environments have been conducted with success rate around 76%
- Final Report including result as well as KPIs and lessons learned will be fulfilled by end of June
- The fulfilment of the self evaluation questionnaire has been performed and updated will be made by end of September by participating entities

Potential

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UC3

Electronic identification for mobile SIM
registration



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Online SIM Registration

- Purpose: EUDI Wallet-based identification for online SIM registration (eSIM activation)
- Value prop: Substitution of incumbent service targeting improved customer experience and cost reduction
- UC3 setup: 9 Relying Parties acting as Verifiers, 9 EUDI wallet products involved in CBT (incl. 2 private wallet products)

MSISDN issuing (optional)

- Purpose: Issuing of the Mobile Number as verifiable EAA
- Value prop: User friendly authentication (number verify), increase of process security
- UC3 setup: Demonstrator implemented by DT so far.

UC3 | Progress made and next steps

Progress

- CB KPI testing ongoing, probably until end of July
- UC3 evaluation conducted, contribution to D3.3 submitted

Preliminary findings / lessons learned

- Positive Test User feedback wrt EUDI Wallet and benefits of SIM registration use case
- UC3's RP are very positive about the business perspective for EUDI-enabled SIM registration
- However, to make this positive perspective happen, significant issues need to be addressed

Next steps

- Based on their mobile network operations expertise, UC3 Partners proposed major improvements to ensure a successful production launch of the EUDI Wallet system.
- UC3 suggests a dedicated workshop where these proposals can be explained and discussed

Potential

For European Digital Identity



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UC4

Electronic attestation of mobile driving license



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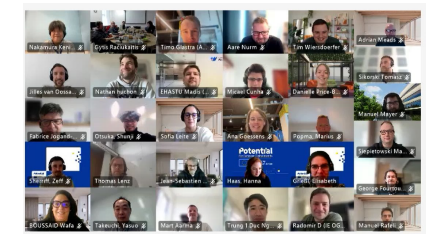
UA



UC4 | Progress made and next steps

Progress made:

- Participation in 4 test events (3 onsite/ 1 online)
- Inclusion of ISO partners to demonstrate interoperability beyond POTENTIAL
- Total of 14 Wallet Apps tested | total of 8 RP tested (status 17 June)
- > 3000 KPIs and counting



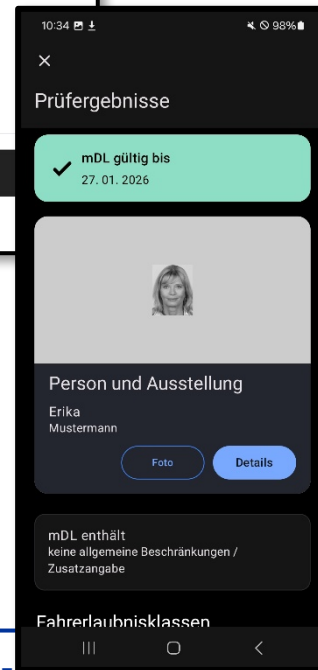
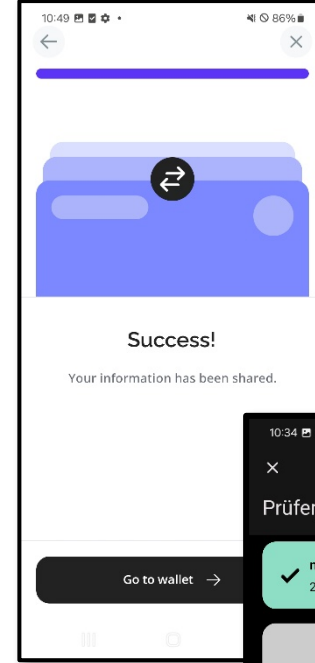
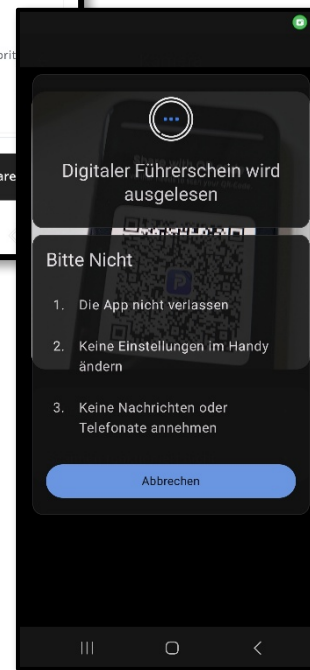
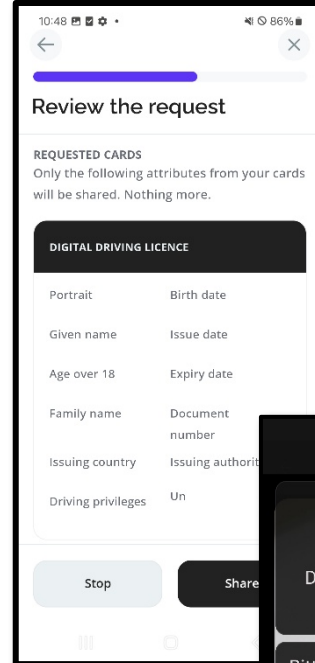
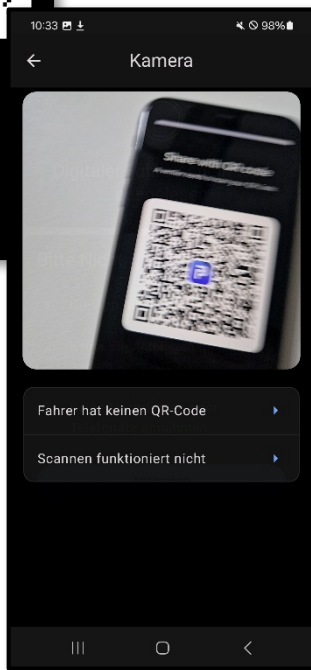
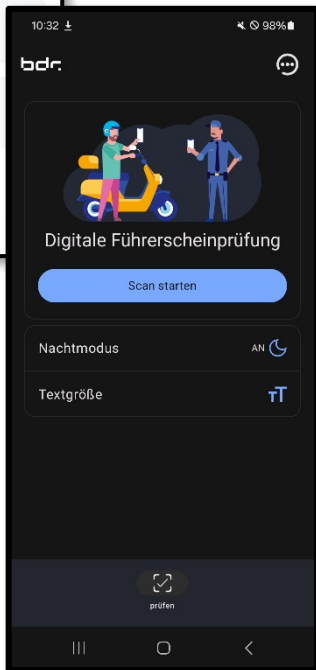
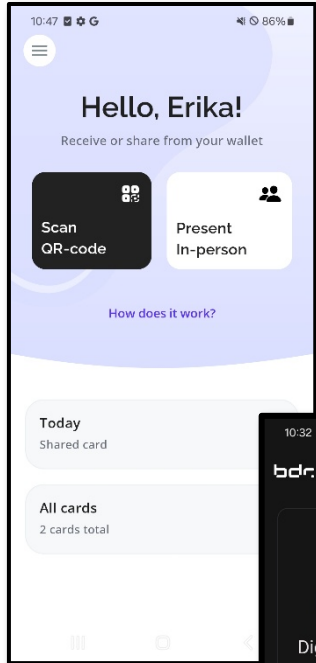
Next steps:

- Final interop event in Berlin 2-3 July
- D3.3 workshop at Prague BoB and finalisation of report in progress



UC4 demo | Proximity Presentation - Police Check

Wallet



UC5

Remote qualified electronic signature



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UC5 | Objectives and achievements

■ Core objectives were to ...

- use EUDI to authorize remote qualified electronic signatures
- support Wallet-centric and QTSP-centric flows

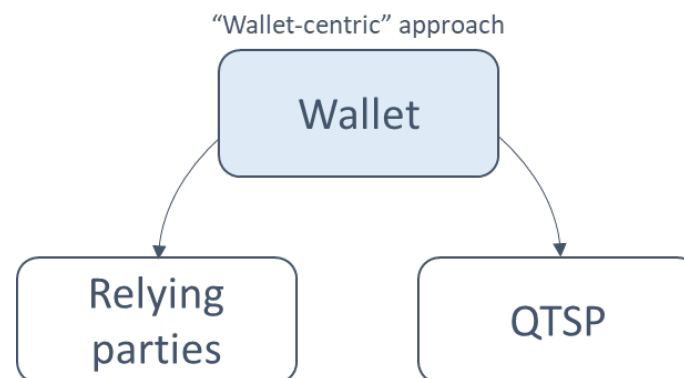
■ We achieved ...

- a solid specification that relies on proven standards (CSC, ETSI)
- have proven it in the pilots, and got lessons that allow to improve
- provides findings to stakeholders (NiScy, CSC, ETSI, and OpenId)

UC5 | Models for remote QES creation

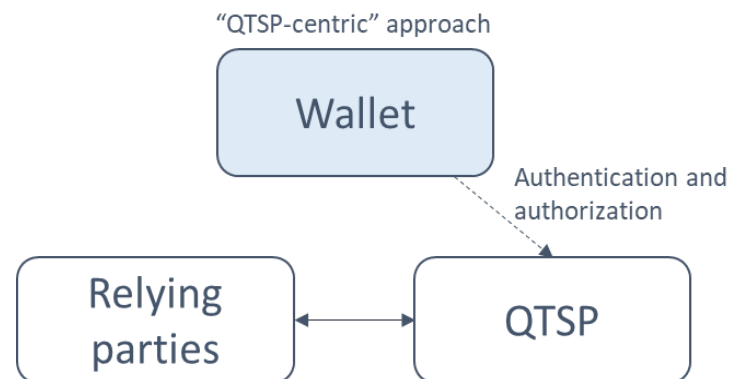
■ Wallet-centric model

- **Principle:** Wallet as a means for the user to initiate, control, and approve all transactions
- **QTSP selection:** By the User
- **Interfaces:** RP-Wallet and Wallet-QTSP



■ QTSP-centric model

- **Principle:** Wallet as a means to authenticate and authorize signatures
- **QTSP selection:** By the RP
- **Interfaces:** RP-QTSP and Wallet-QTSP



UC5 | Technical foundations

- Profiles are based on:
 - ETSI TS 119 432 – **Protocols** for remote digital signature creation
 - CSC API v2 – **Cloud Signature Consortium** specifications
 - **OpenID4VP** for signer authentication and authorization
- Scope of specifications **goes beyond** these standards to include signing key creation and enrolment processes
- Signing keys must be used, with a high level of confidence, under the sole control of the signer (**SCAL2** - CEN EN 419 241-1)

UC5 | Demo of Wallet-centric model

Wallet-centric model:

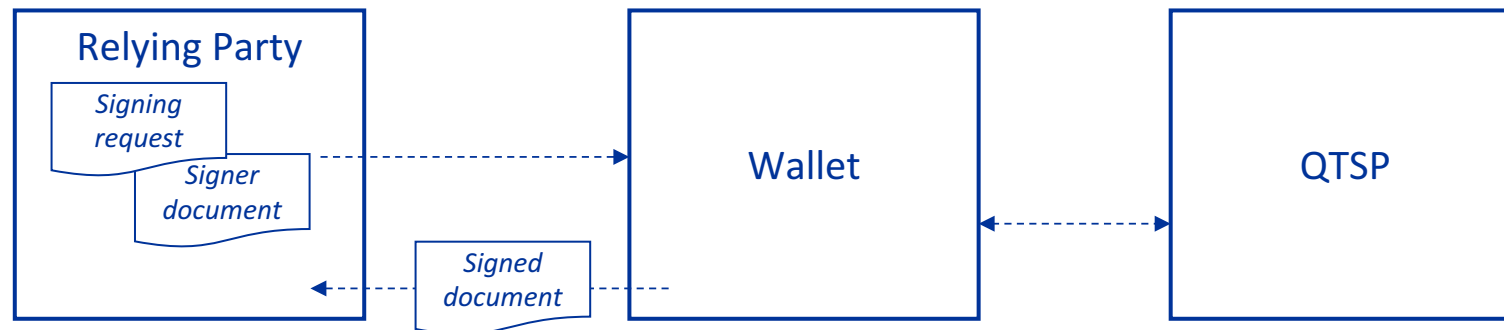
 **User Control:** Transactions are started and approved by the user

 **Transparency:** All exchanges are visible in the Wallet

 **Privacy:** Documents never shared with QTSP (hash only);
QTSP does not know the RP

 **Simplicity:** RP provides signing request and document only

 **Interoperability:** RP compatible with any compliant Wallet;
Users freely choose their QTSP



UC6

Health credentials for electronic prescription

 **ESZFK**



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UA



UC6 | Progress made and next steps

Progress made:

- Participation in 2 in-person test events and regular Health ID-specific bilateral tests
- Successful integration of the eIDAS2 and EHDS framework in 3 MSs
- Total of 11 Wallet Apps tested | total of 8 RP tested (status 17 June)
- ≈ 200 transactions

Next steps:

- Proximity piloting event in Vienna 23-24 June
- Remote bilateral testing transaction during July
- D3.3 workshop at Prague BoB and finalisation of report in progress



Potential's key dates

- 🇪🇺 December 2022 – Selection of the Potential consortium by the European Commission
- 🇫🇷 **July 2023 – Board of Beneficiaries, Paris**
- 🇳🇱 November 2023 - Onsite Executive Board, Amsterdam
- 🇪🇺 May 2024 – First remote tests
- 🇬🇷 **April 2024 – Board of Beneficiaries, Athens**
- 🇩🇪 August 2024 - Hackaton, Dresden
- 🇵🇱 February 2025 – First in-person interoperability tests, Warsaw
- 🇱🇹 May 2025 – Interoperability tests, Vilnius
- 🇨🇪 **June 2025 – Board of Beneficiaries, Prague**
- 🇵🇱 **September – 2025 Pairing Europe's Potential, Wrocław**



19 languages spoken

without counting the accents

0 on-site meetings that should have been emails



45 ink cartridges saved by UC5



68,5 GB of NextCloud storage

PID
QEAA
WSCD
WUA
RP
AEAA
ARF
...

60+ acronyms

Potential

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0g of CO²

due to hosting NextCloud



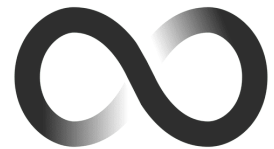
568 times “Sorry I was on mute”

said during our meetings



50 bank accounts

opened by Erika Mustermann



business models found

235 participants

during the 2025 interop events



500+ meetings

sometimes on different timezones

86% of events in full sun



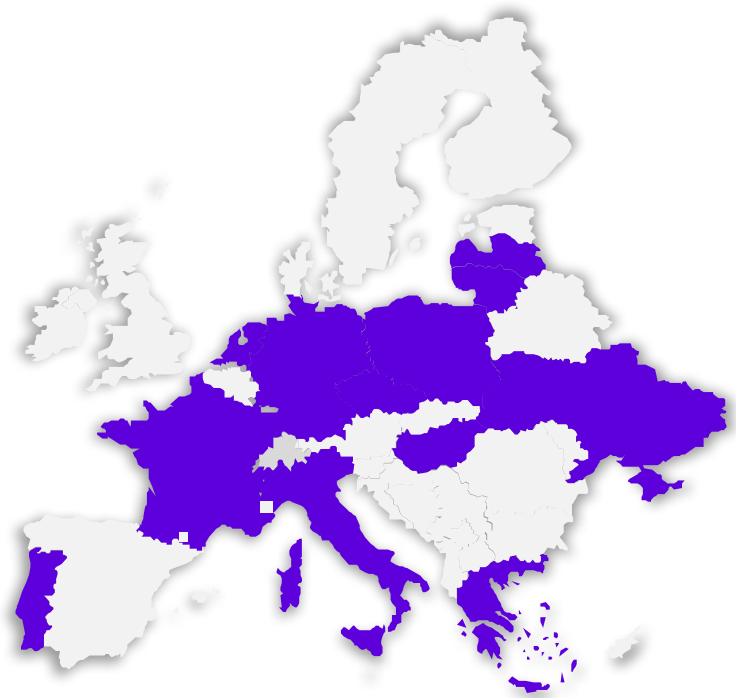
New EC call for proposals under the DIGITAL program, providing co-funding for new experiments involving the use of sovereign digital identity across Europe.

28 public
administrations

20 M€ of global
budget

87 private sector
partners

10 M€ of funding



12 Pays représentés



115

Public and private
partners

Ministries, public operators,
research centers, large
companies, and start-ups
acting as wallet or attestation
providers and relying parties.

29

Observers

Entities outside the
consortium but with a
recognized advisory role in
the APTITUDE project,
called upon to contribute
their expertise or provide
strategic insight on key topics
addressed in the project.

A multitude of partners brought together within the Consortium

Member States administrations



Wallet Issuers



Relying Parties



Technology Providers

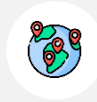


Credential Issuers





Sovereignty



International development (beyond Europe)



Prioritized sectors



Digital Travel Credentials



Key challenges related to synergies with international actors



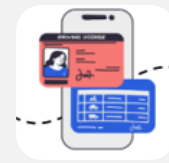
Tickets and Check-in



Fonctions bound to DTC usage (Digital Travel Credential)



mVRC



Challenges related to mDL (mobile Driving Licence)



SCA and payments



Identity and sovereignty as pillars of this required use case

Participating Member States



WILLING TO JOIN THE APTITUDE OBSERVER COMMUNITY?



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The next EUDIW Unfold sessions will also be the opportunity to share the latest updates from Aptitude.

If you are interested in being in the loop, please reach out to us!