fido ALLIANCE simpler stronger authentication

TeleTrusT Pioneers in IT security.
IT Security Association Germany

German/US Expert Meeting

IT Security Association Germany (TeleTrusT) in cooperation with FIDO Alliance

San Francisco, 30.04.2025

The European Digital Identity Wallet

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Paul Bastian, Senior Innovation Developer, Bundesdruckerei GmbH

The European Digital Identity Wallet is coming

What has happened so far: 2020 - demand for digital identity for all

*" Every time an App or website asks us to create a new digital identity or to easily log on via a big platform, we have **no idea what happens to our data** in reality. That is why the Commission will propose a **secure European e-identity**. One that we trust and that any citizen can use anywhere in Europe to do anything from paying your taxes to renting a bicycle.*
*A technology where we can **control** ourselves what data is used and how."*

Ursula von der Leyen, President of the European Commission, 16 September 2020

https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-digital-identity_en

EUDI Wallet - Secure identification, presentation of attestations and secure signing throughout Europe

→

Means of identification	Attestations	Signature / Seal	"Payment"

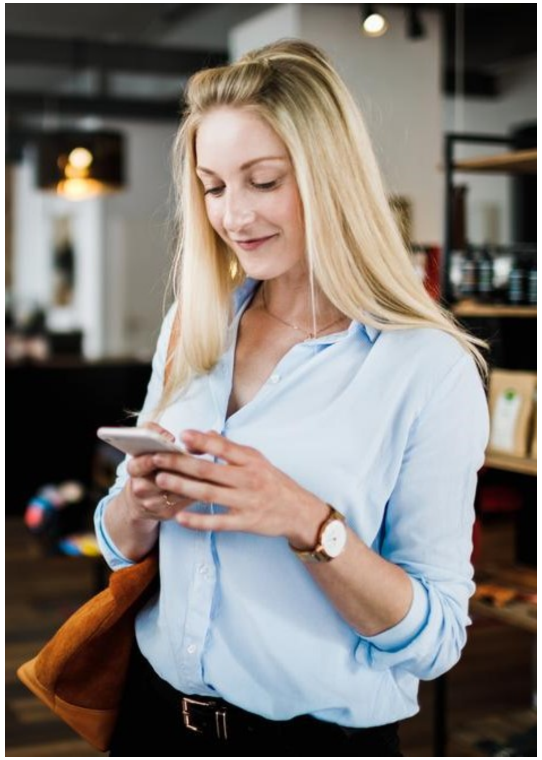
Main functions of the EUDI Wallet

https://ec.europa.eu/digital-building-blocks/sites/display/EUDIGITALIDENTITYWALLET/EU+Digital+Identity+Wallet+Home

Revision of the eIDAS Regulation - Europe-wide standardised legal framework for trustworthy electronic interactions

Goals

- **Strengthening the eID** by providing **EUDI wallets** for **natural and legal persons**
- **Facilitation of business and administrative processes** through many applications
- **Provision** and use of **further evidence** in the EUDI Wallet



Advantages

- European harmonized framework for **cross-border applications**
- **Free use of** the EUDI wallet and signature for citizens
- Safe and easy to use **with** full **user control**

eIDAS - electronic IDentification, Authentication and trust Services, EU-Verordnung über elektronische Identifizierung und Vertrauensdienste für elektronische Transaktionen im Binnenmarkt (eIDAS 2.0)

eIDAS 2.0 creates the basis for an ecosystem of digital identities

eIDAS 1.0
2014

- Administration
- Federated ID model
- Notification of the member states eID schemes
- population reach in Europe:

59%

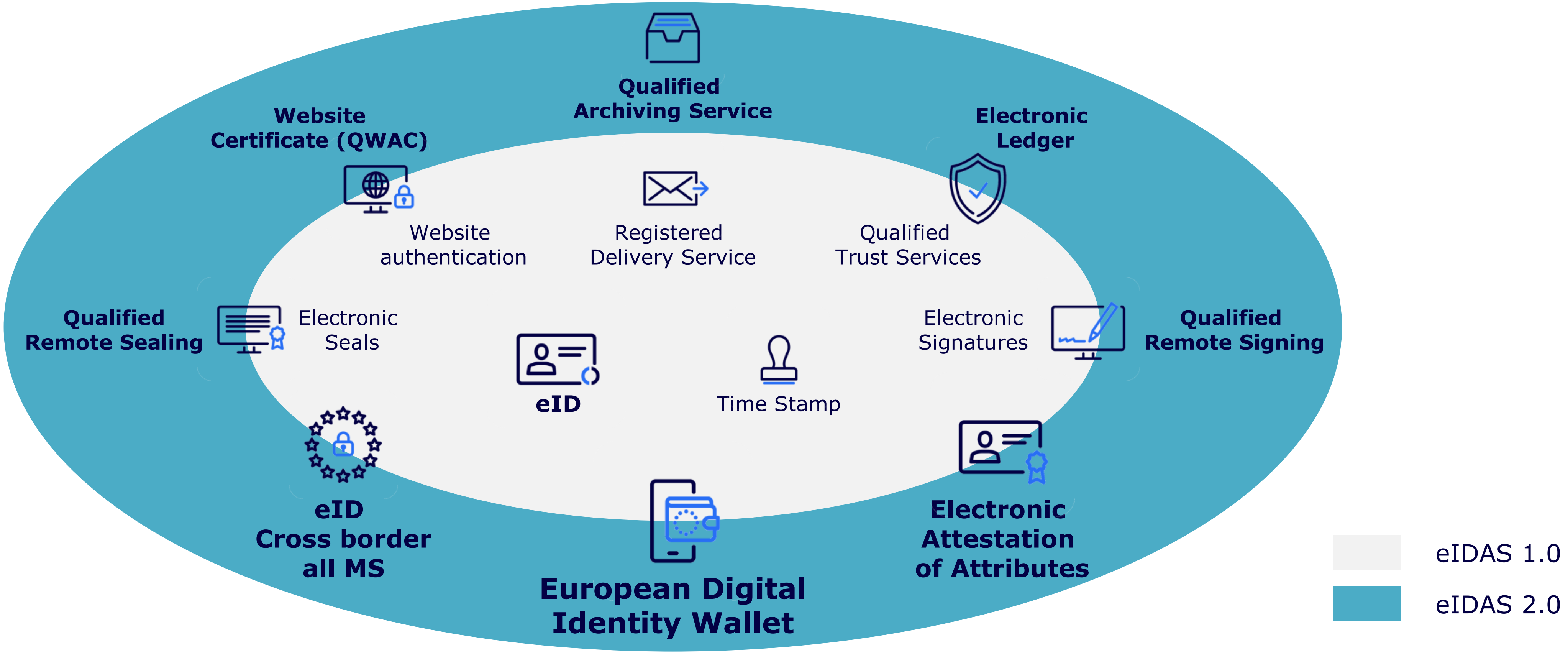
eIDAS 2.0
2024

- Administration and private sector
- Decentralized ID model
- Notification of eID/wallets
- Evidence - authentication of attributes
- Electronic ledgers, long-term archiving
- Population reach in Europe 2030:

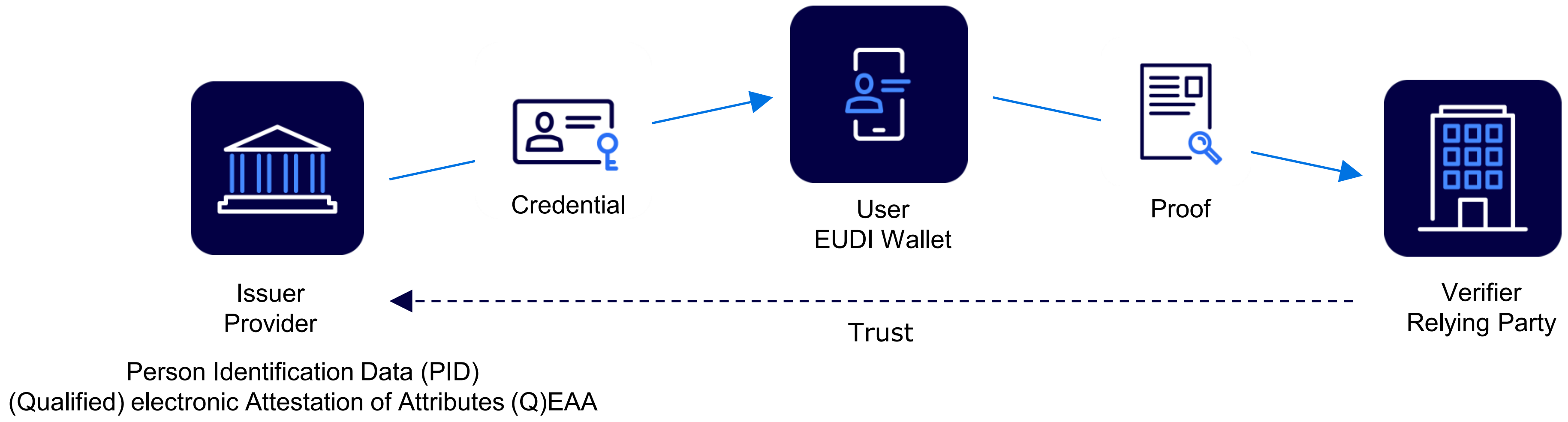
> 80%

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulation (EU) No 910/2014 as regards establishing a framework for a European Digital Identity

eIDAS 2.0 - an evolutionary development to increase applicability and practical benefits



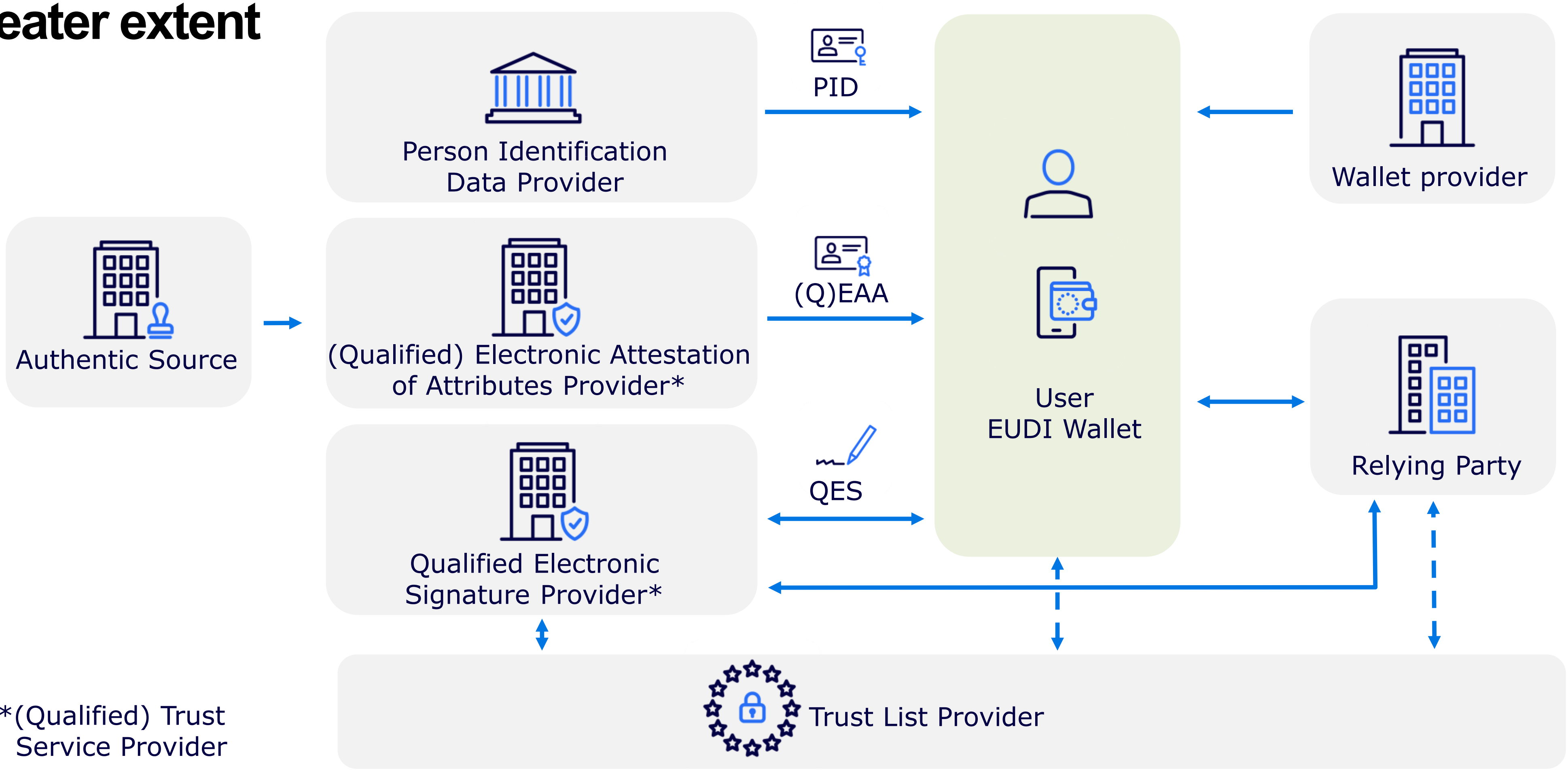
The role model based on the eIDAS 2.0 Architecture Reference Framework (ARF) enables a decentralised identity ecosystem



- ✓ Storage and cross-border use of credentials under the full control of the user
- ✓ Security and high usability based on common standards (e.g. ISO, IETF, OpenID, CEN, ETSI, W3C/FIDO)
- ✓ The online ID function of the German ID card forms the basis for the implementation of PID

https://digital-strategy.ec.europa.eu/en/library/european-digital-identity-architecture-and-reference-framework-outline
https://github.com/eu-digital-identity-wallet/eudi-doc-architecture-and-reference-framework/blob/main/docs/arf.md

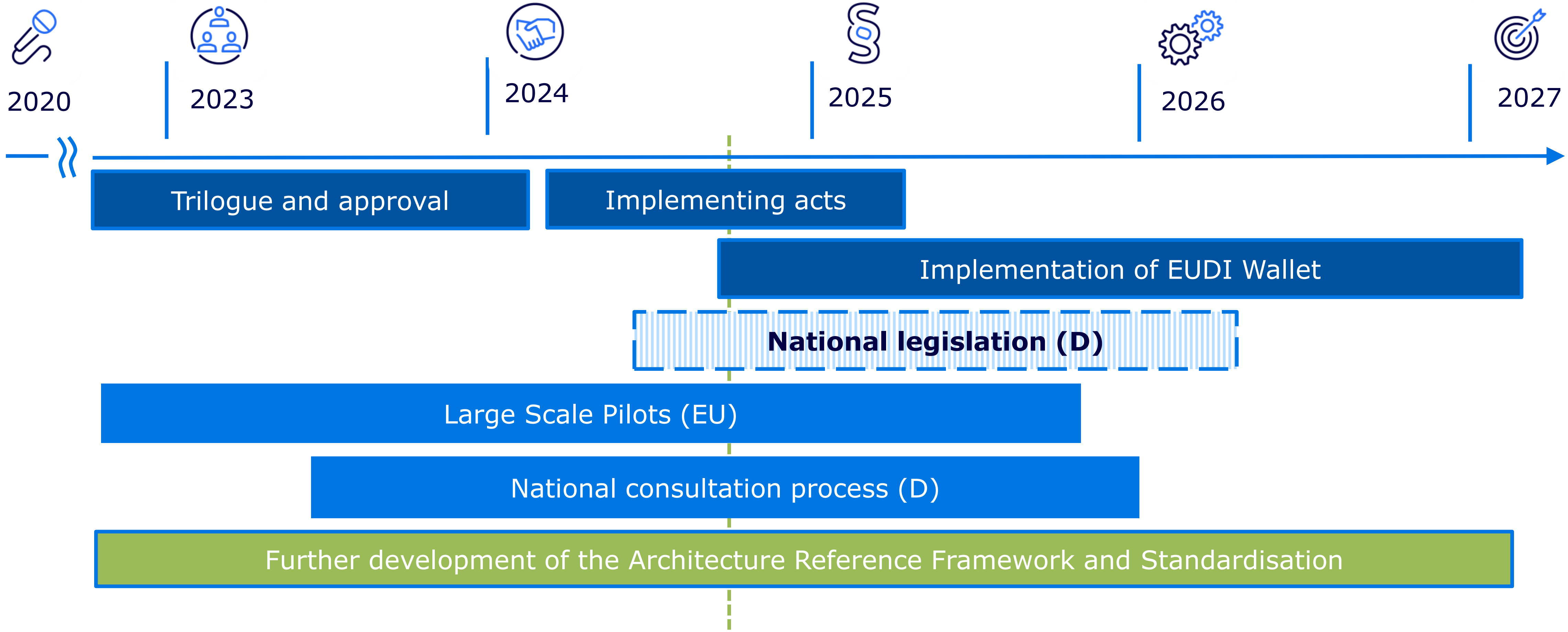
eIDAS 2.0 involves digital service providers and qualified trust service providers to a greater extent



*(Qualified) Trust Service Provider

https://github.com/eu-digital-identity-wallet/eudi-doc-architecture-and-reference-framework/blob/main/docs/arf.md

Timetable eIDAS 2.0 - more than halfway there



Large Scale Pilots - Demonstration of added value based on cross-border applications

In the POTENTIAL LSP consortium, Bundesdruckerei ensures interoperability and six use cases

The 4 Large Scale Pilots in Europe

- NOBID CONSORTIUM
- DC4EU
- EWC
- Potential – For European Digital Identity

The 6 applications of the LSP Potential

- eGovernment Service
- Online bank account opening
- SIM card registration
- Digital driving licence (mDL)
- Electronic signature (QES)
- Digital prescription (ePrescription)

https://digital-strategy.ec.europa.eu/en/policies/eudi-wallet-implementation
https://www.digital-identity-wallet.eu/

Transparent and participatory consultation process - The path to eIDAS implementation in Germany

Comprehensive involvement of relevant stakeholder and the public

Realisation of extensive workshops on operating models and applications

Provision of the work and results via OpenCoDE

Publication of Architectural concepts, Innovation competition for wallet solutions

Open architecture and consultation process to provide a validated, interoperable, widely accepted and sustainably financeable concept for eIDAS implementation in Germany

Federal Ministry of the Interior and Community

M. Richter, M. Heuberger, Solutions for Digital Identities in Europe. *SCCON,* 2023.
https://bmi.usercontent.opencode.de/eidas2/start/
https://gitlab.opencode.de/bmi/eudi-wallet

More than 60 organisations are involved in the consultation process lead by Federal Ministry of the Interior and Community

Selection

Deutsche Rentenversicherung
Stadt Köln
Dresden.
bankenverband
PKV
GDV
verbraucherzentrale Bundesverband
ING
Google
COMMERZBANK
T · ·
Die DK
TeleTrusT Pioneers in IT security.
PD
Finanzgruppe Deutscher Sparkassen- und Giroverband
VISA
amadeus
Deutsche Post
KAPRION
Capgemini
united internet
FZI
Bundesamt für Migration und Flüchtlinge
comuny
GOVERNIKUS
AUTHADA
bank-verlag
HSH KOMMUNALSOFTWARE
EWC
BCCM
NIFIS
Fraunhofer FIT
iDunion
ID IDEAL
DATABUND
Innovationsverbund Öffentliche Gesundheit
STATE FREE
// buergerservice.org e.V.
openPetition
EPICENTER .WORKS
SICHERE DIGITALE IDENTITÄT
OpenWallet FOUNDATION
Westernacher solutions
esatus
IDnow.
geocapture
verimi
SPHERITY
STROMDAO
NECT
twilio
TICE
ubique
ANIMO
sphereon
SUNET
GUnet
yubico
lissi
SAMSUNG ELECTRONICS

Germany will issue a government-provided EUDI wallet and open the market to non-governmental providers

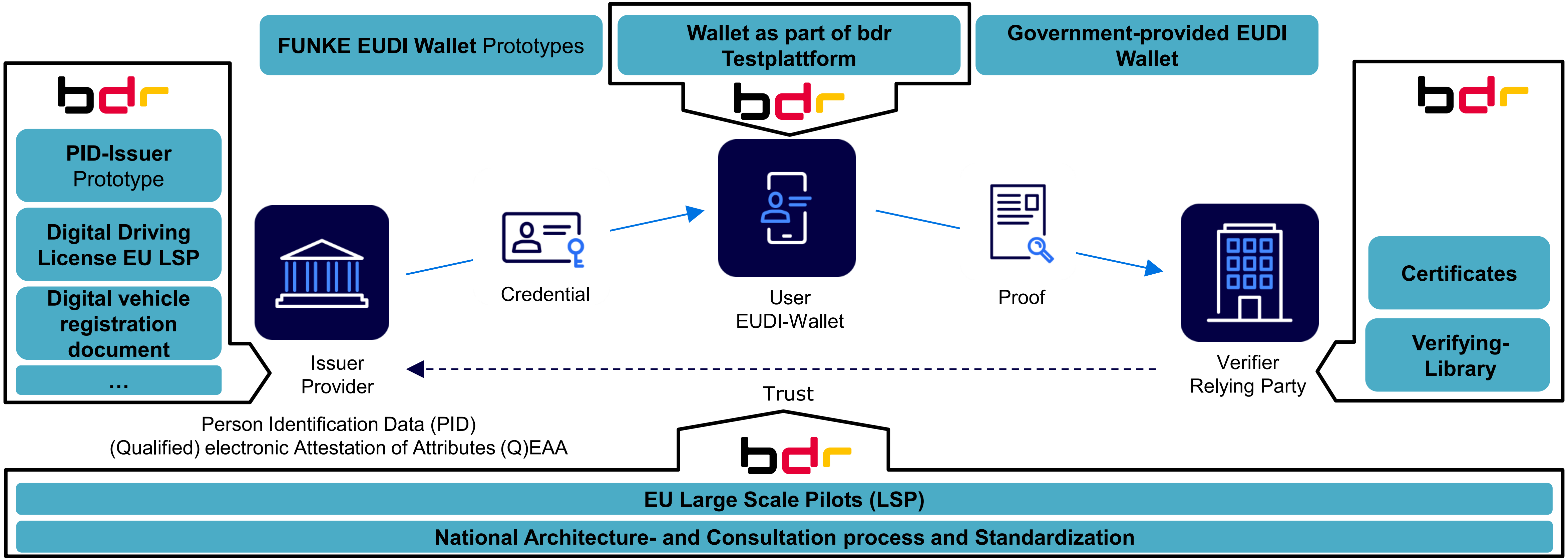
- Germany will offer a **government-provided EUDI Wallet** to ensure the certification and issuing of at least one EUDI Wallet by 2027 as stipulated by the eIDAS regulation.
- Conditions will be created for **non-governmental providers** to have their own EUDI Wallets certified and recognized. This should promote choice and innovation
- The decision was made in an interministerial exchange. Input was given from various consultation formats, specifically the "**Ecosystem Governance and Operating Models**" (EGOM) Working Group

Involved ministries and institutions in the decision Process:

Federal Ministry of the Interior and Community
Bundeskanzleramt
Federal Ministry of Labour and Social Affairs
Federal Ministry for Digital and Transport
Federal Office for Information Security
Federal Ministry of Finance
Federal Ministry for Economic Affairs and Climate Action
Federal Ministry of Health
Federal Ministry of Justice

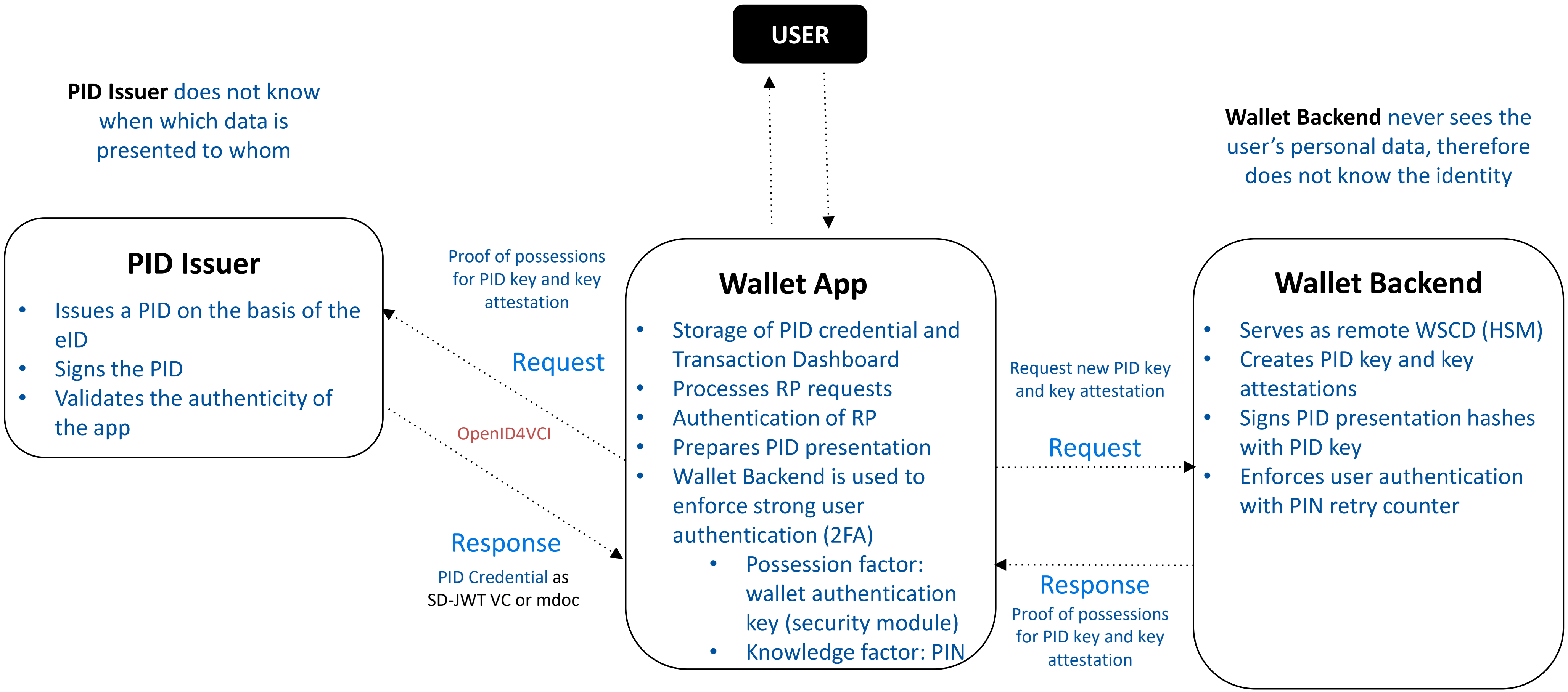
M. Heuberger, EUDI Wallet Project Update, *BMI Open Online Consultation*, 09.10.2024.
https://gitlab.opencode.de/bmi/eudi-wallet
https://www.bmi.bund.de/SharedDocs/pressemitteilungen/DE/2024/09/eudi-wallet-sep.html

Bundesdruckerei is driving forward harmonized solutions for digital credentials through active project work at national and EU level



https://www.bmi.bund.de/SharedDocs/pressemitteilungen/DE/2024/09/eudi-wallet-sep.html | https://www.bmi.bund.de/SharedDocs/pressemitteilungen/DE/2023/11/digitale-brieftasche.html | https://www.sprind.org/de/challenges/eudi-wallet-prototypes/ | https://www.bundesdruckerei.de/de/newsroom/news/cyberseclunch-26

UNDER THE HOOD (FOCUS ON ISSUANCE)



UNDER THE HOOD (FOCUS ON PRESENTATION)

USER

PID Issuer does not know when which data is presented to whom

Wallet Backend never sees the user's personal data, therefore does not know the identity

PID Issuer

- Issues a PID on the basis of the eID
- Signs the PID
- Validates the authenticity of the app

Relying Party

- Verifies the PID
- Validates the authenticity of the app

PID Presentation Request

Request

OpenID4VP

Response

PID Presentation Response with SD-JWT VC or mdoc

Wallet App

- Storage of PID credential and Transaction Dashboard
- Processes RP requests
- Authentication of RP
- Prepares PID presentation
- Wallet Backend is used to enforce strong user authentication (2FA)
  - Possession factor: wallet authentication key (security module)
  - Knowledge factor: PIN

Hash of PID presentation + proof of possessions for wallet authentication key and PIN

Request

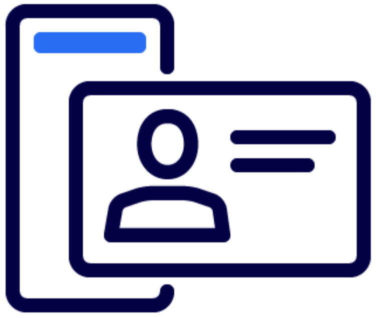
Response

Signed Hash

Wallet Backend

- Serves as remote WSCD (HSM)
- Creates PID key and key attestations
- Signs PID presentation hashes with PID key
- Enforces user authentication with PIN retry counter

Gartner Predicts At Least 500 Million Smartphone Users Will Be Using a Digital Identity Wallet by 2026



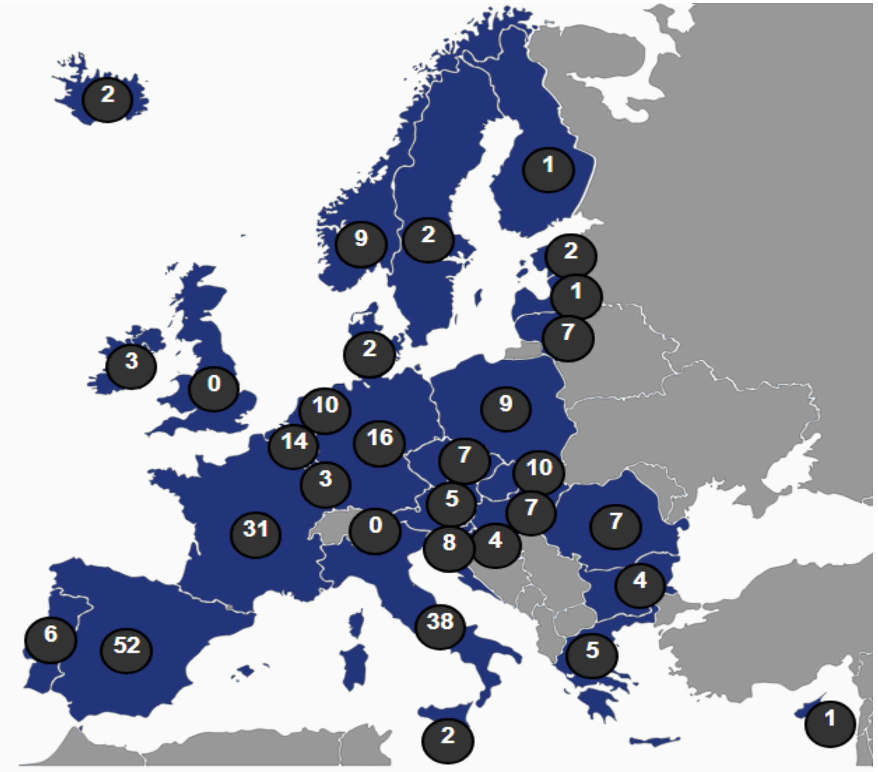
https://www.gartner.com/en/newsroom/press-releases/2024-09-24-gartner-predicts-at-least-500-million-smartphone-users-will-be-using-a-digital-identity-wallet-by-2026

eIDAS 2.0 completes the European trust space and strengthens European digital sovereignty

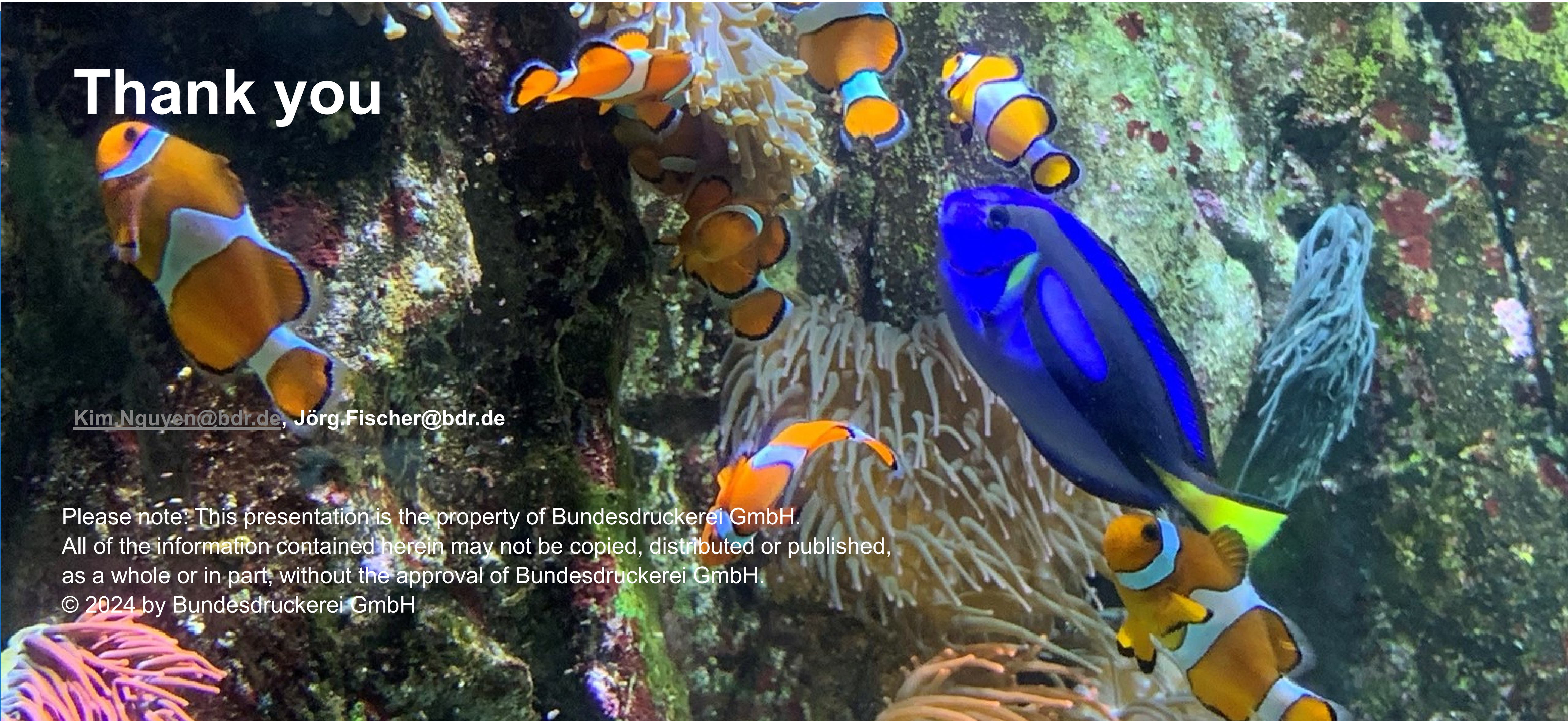
EUDI-Wallets available throughout Europe by 2027

Harmonized solutions for cross border applications

Facilitation of business and administrative processes with added value for people, administration and economy



Trust Service Providers https://www.eid.as/tsp-map/#/



Thank you

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