EUDI Wallet architecture and onboarding of business partners

27.11.2024

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Agenda

1   **Application areas for EUDI wallets for legal entities**

2   (Legal) person EUDI wallet solution architecture

3   Demonstration: Automated onboarding based on EUDI wallets and EU defined attestations

3   Question and Answers

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Problems and Motivation: Missing organizational identities create problems and costs in business to business interactions

Key question in supply chain management: Do we have high quality supplier and business partner data for our internal (e.g., financial, logistic, production,...) processes?

Problems today

Cost pressure and the need to increase processing time in B2B and B2G purchase scenarios

High manual effort for business partner master data management

No product instance/batch data from supplier plants

Process problems in finance and logistic processes e.g. incorrect bank transfers, bank account fraud, customs problems, ...

Challenges tomorrow

Supply-Chain and product pass related regulation will require verifiable credential exchange for

CO_2-certificates for products

Recycling percentage credentials for products

Additional environmental and social governance certificates (e.g. no use of child labor,...)

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Organizational digital identity based on eIDAS 2.0: Overview of the main roles and building components

## European Digital Identity Wallet (EDIW) for leg. pers.

...an organizational wallet owned by a legal person/organization

- **Stores the credentials/attestations** issued to organizations **in the Holder role**

- **Exchanges and verifies credentials** from other EUDI wallets (e.g. in supply chain) **in the Relying Party Role**

- **Provides issuing support** for Electronic Attestation of Attributes ((Q)EAA's) by handling the cryptographic keys and by sealing

Person Identification Data for legal person (LPID)

... an eID but for legal persons **used for mutual authentication to establish trust**

- Credential **issued as a LPID by Member State** or by a mandated QEAA providers

- **Is used for automated mutual authentication** between the wallets of legal entities to establish initial trust

- **Binds the wallet public key identifier or a public key to a unique legal entity identifier (EUID)**
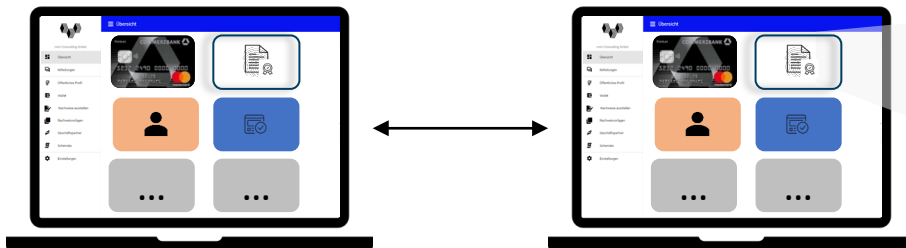
Legal PID

Unique Legal Entity Identifier = ..."EUID1"

Legal Entity Name = "Robert Bosch GmbH"

(Public Key Identifier/Public Key = "UID 1")*

*still to be agreed by EWC

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EUDI-infrastructure as the foundation for automated B2B, B2G and B2C transactions in the application areas …


Digital Product Passport (DPP) (ESPR)

CO$_2$ Reduction and Circular Economy (ESPR)

Env. and Social Governance Compliance (LkSG)

Projekt „Company Data"

Projektskizze

KyC/KyS/KyB in B2B und B2G Transactions (Company Law)

Fuel certificates

Remote vehicle configuration

In-car-payments

Automated shared parking & charging

eWallet for IoT and cars (CO$_2$ neutral fuels from 2035)

SCAN

eInvoice and Payment (Transakt. Meldesystem ab 2028)

eIDAS 2.0 identity infrastructure (EUDI wallets, trusted registries, PKI, revocation lists,…) as an interoperable foundation for use cases from X-projects (Manfucturing-X, Catena-X…)

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Wallet conceptual model based on ARF defined roles and concepts extended with wallet core component and application
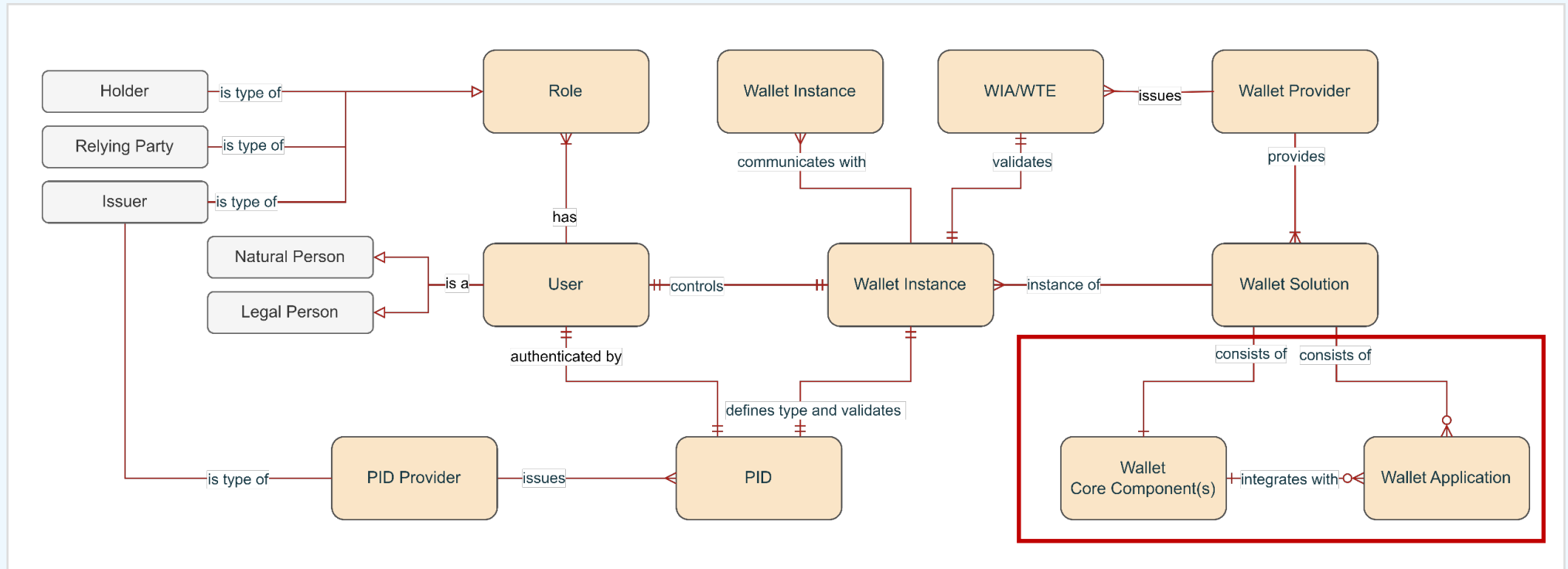
PID – Person Identification Data

WIA - Wallet Instance Attestation

WTE – Wallet Trust Evidence

Trust model

Mutual exchange of (L)PID and WIA/WUA

- A not revoked (L)PID ensures:
  - Issuer is on a trusted list for (L)PID Providers
  - Authenticity of person

- A not revoked WIA ensures:
  - Wallet provider is on a trusted list for certified wallet providers
  - Wallet instance isn't revoked

When both PID and WIA validates, a wallet can be considered *Valid* i.e. trusted.

Robert Bosch Question:

Can we achieve this based on x.509 certificates and issuer instances?
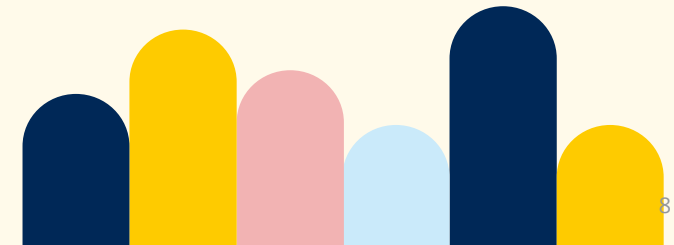
User and role variation
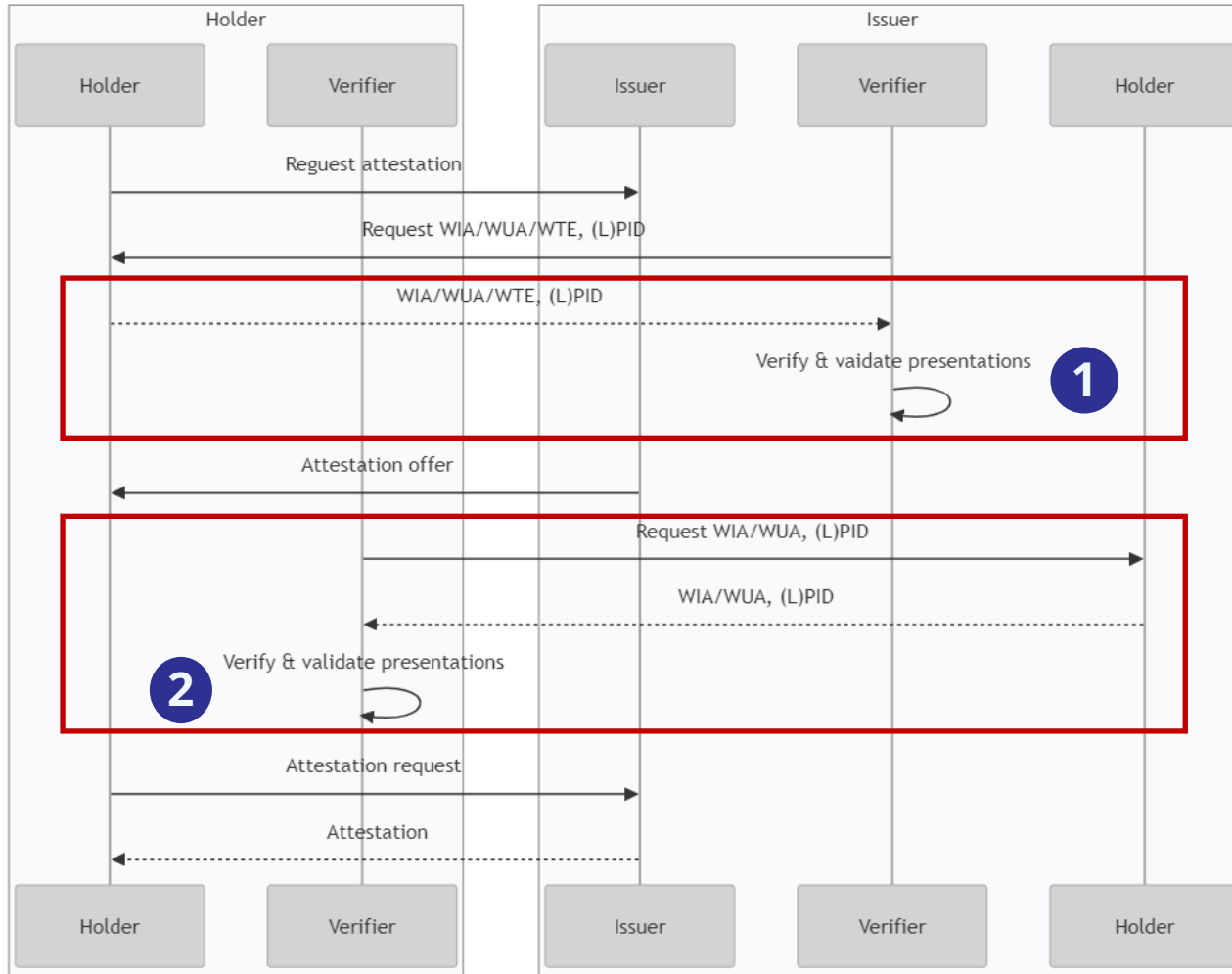
Key conclusions*

1 Each issuer/Provider software needs also verifier/RP and Holder functionality.

2 Each EUDI wallet needs holder **and** verifier/RP functionality!

Therefore each issuer/provider needs an EUDI Wallet Core Component

*Conclusions added by Robert Bosch GmbH
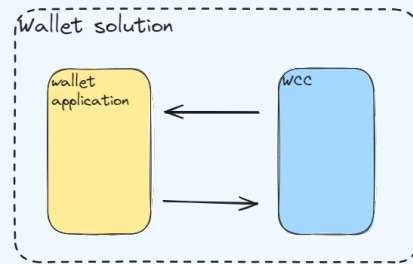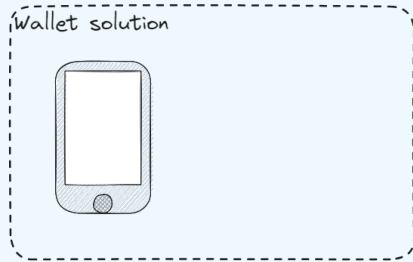
Bolagsverket

Wallet solution components

Wallet solution

Wallet application

GUI	Authentication
Localization	Authorisation
Display attetstaions	Display presentations

Wallet core components - tbd

| Communication | Storage |
| APIs | Encryption/Decryption |
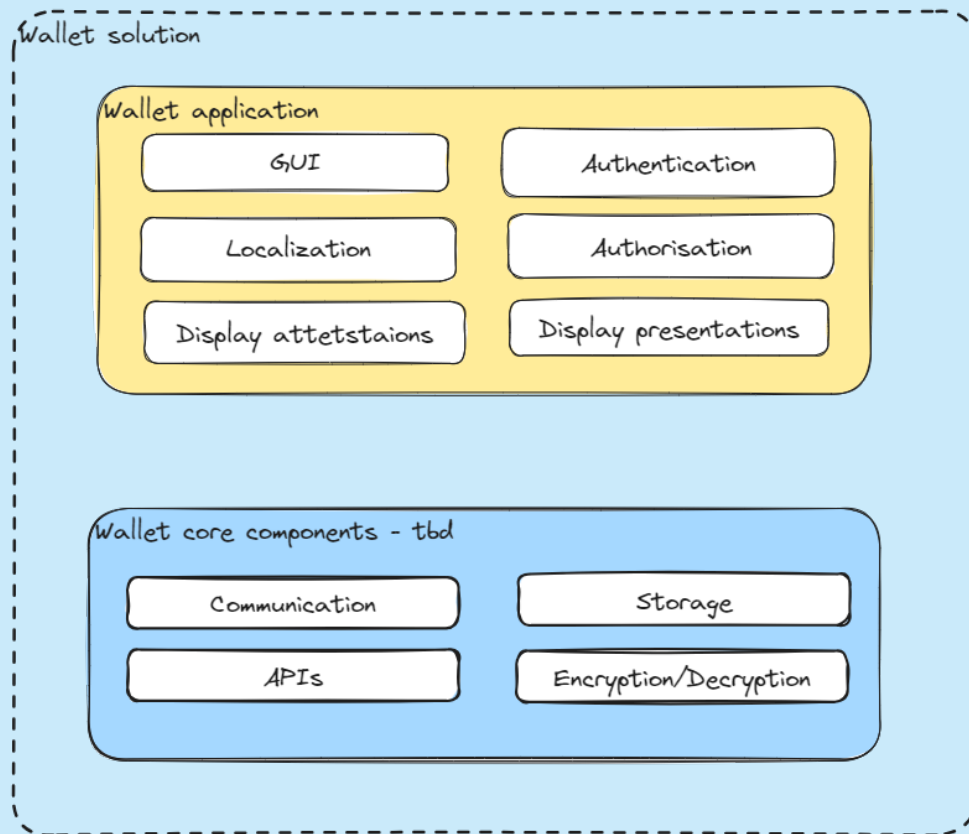
Wallet communication
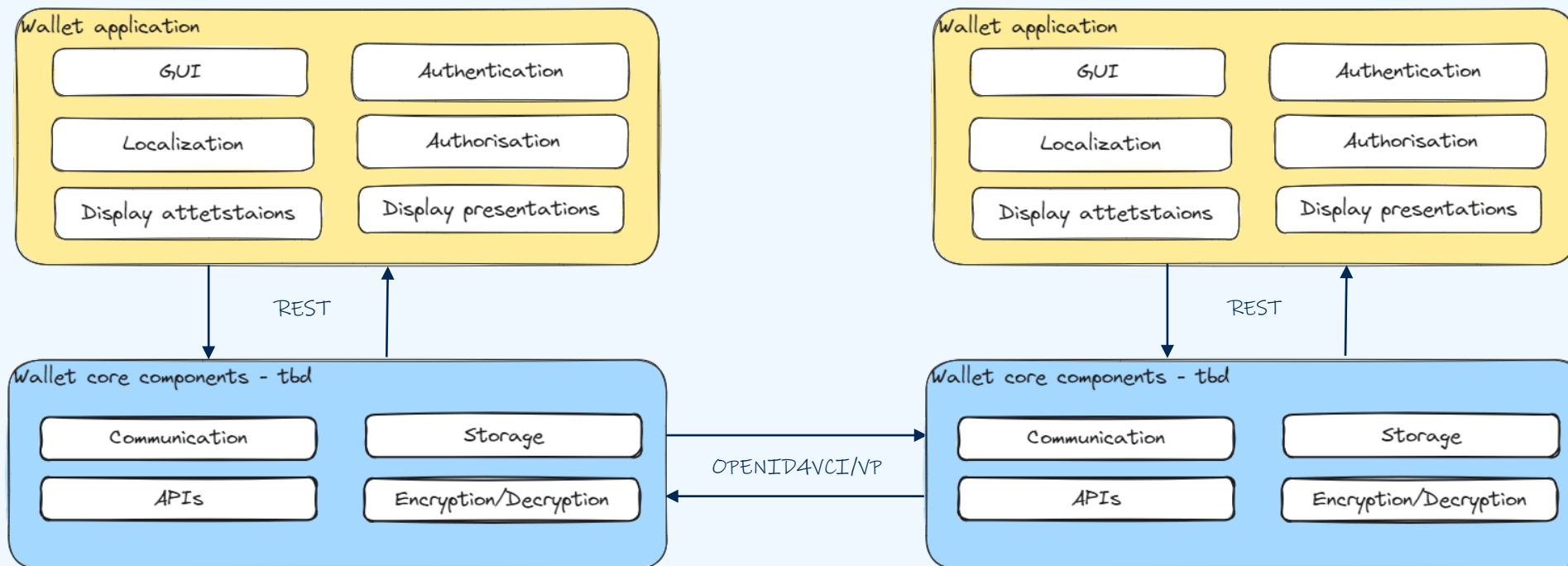
Wallet types and wallet use cases

Wallet solution combinations
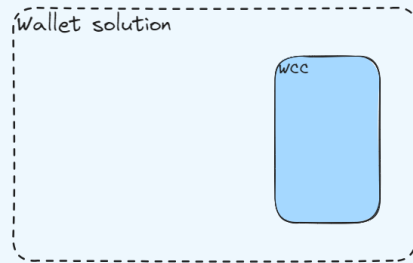
Wallet solution

Wallet solution

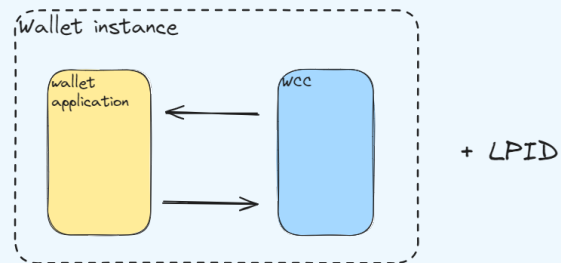wallet application

wcc

Wallet solution
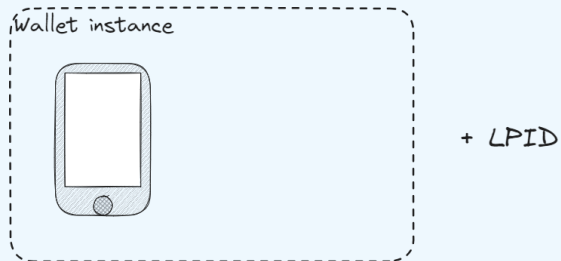
wcc

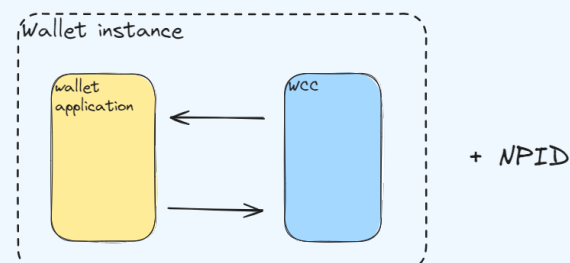# Wallet types defined by PID type
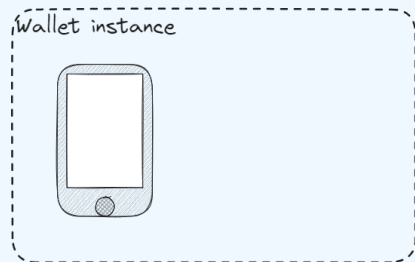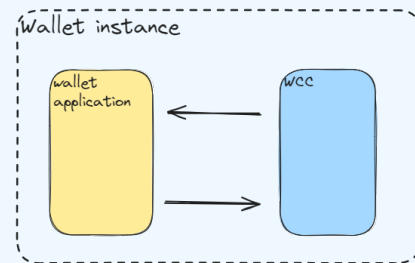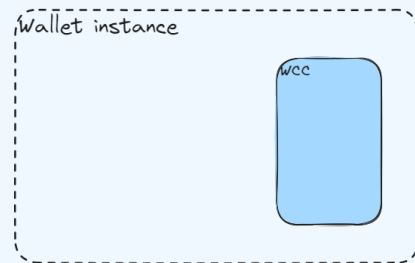
Legal person wallet
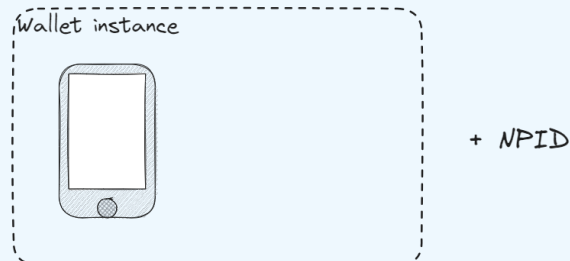
Wallet types defined by PID type
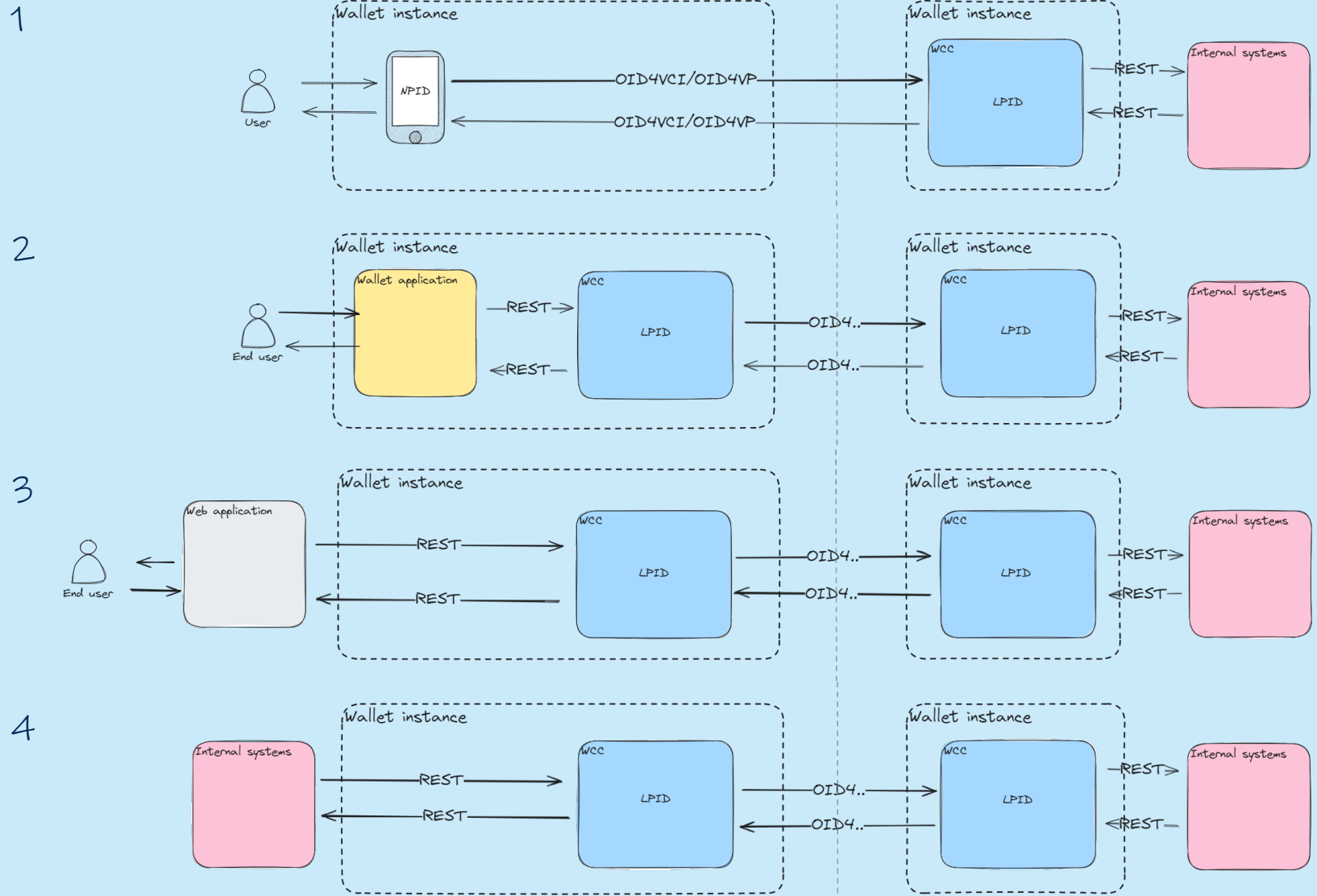
Legal person wallet
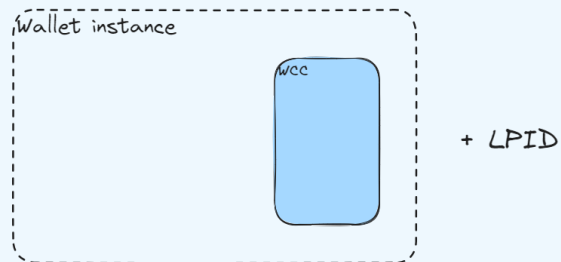
Natural person wallet

Key remarks*

- The issued PID type (NPID or LPID) defines the type of the wallet
- One wallet instance can not hold a NPID and a LPID
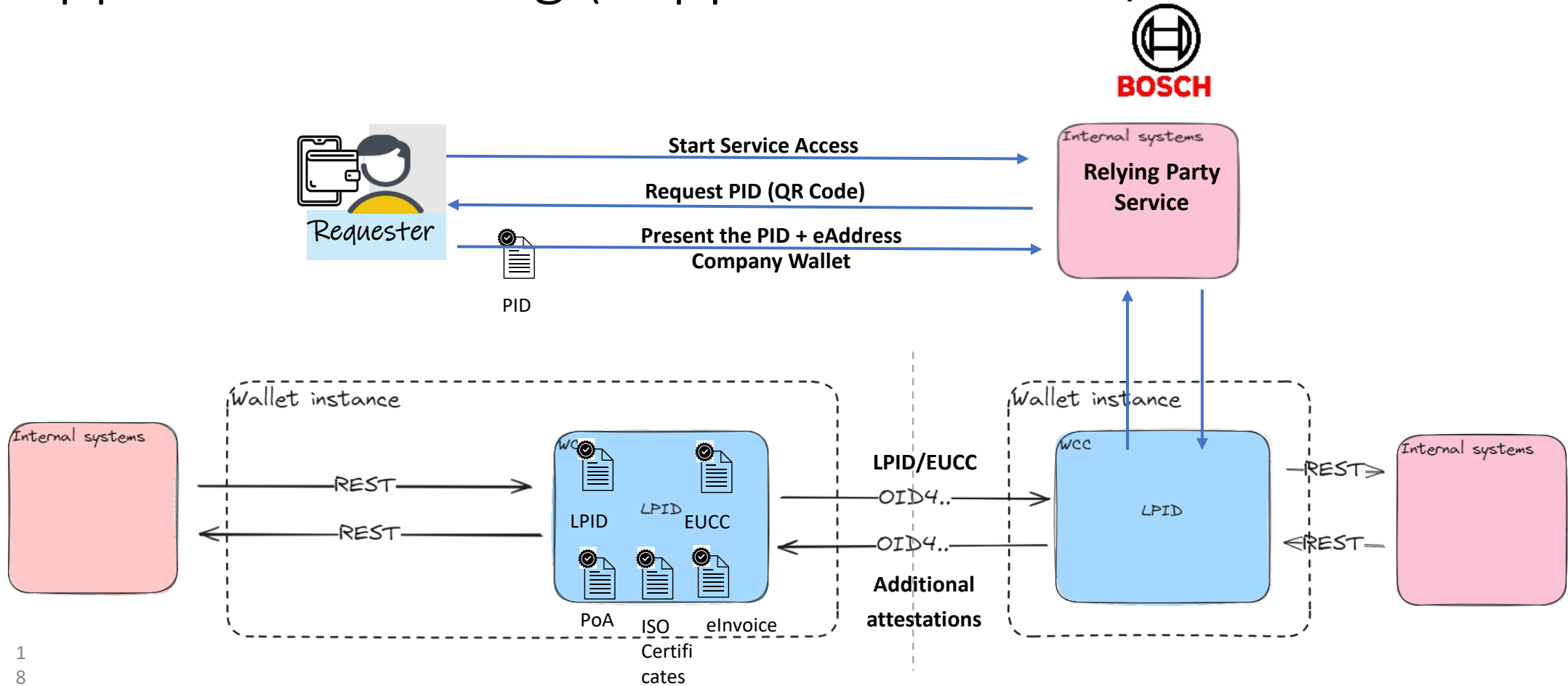
*Remarks added by Robert Bosch GmbH

Generic use cases

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Supplier Onboarding (Supplier <-> Bosch)

KYS – supplier onboarding
Interaction Diagramm (wallet dance)