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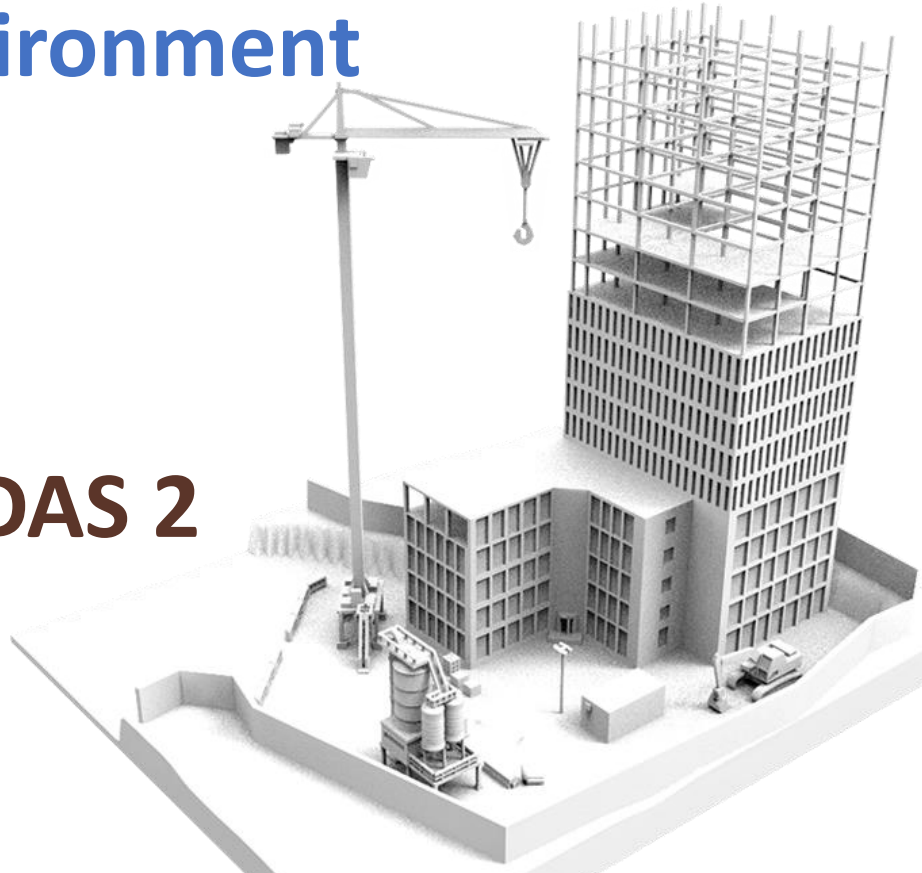
HYPERLEDGER
Identity
SPECIAL INTEREST GROUP

Stéphane MOUY

Digital Identities in the European Regulatory Environment

Arrivederci
Adios
Au revoir **eIDAS 1**
Auf wiedersehen
Tot ziens

Buongiorno
Holà
Bonjour **eIDAS 2**
Guten Tag
Hallo



The European regulatory scene is busy With eIDs

It's eIDAS of course, but not just eIDAS

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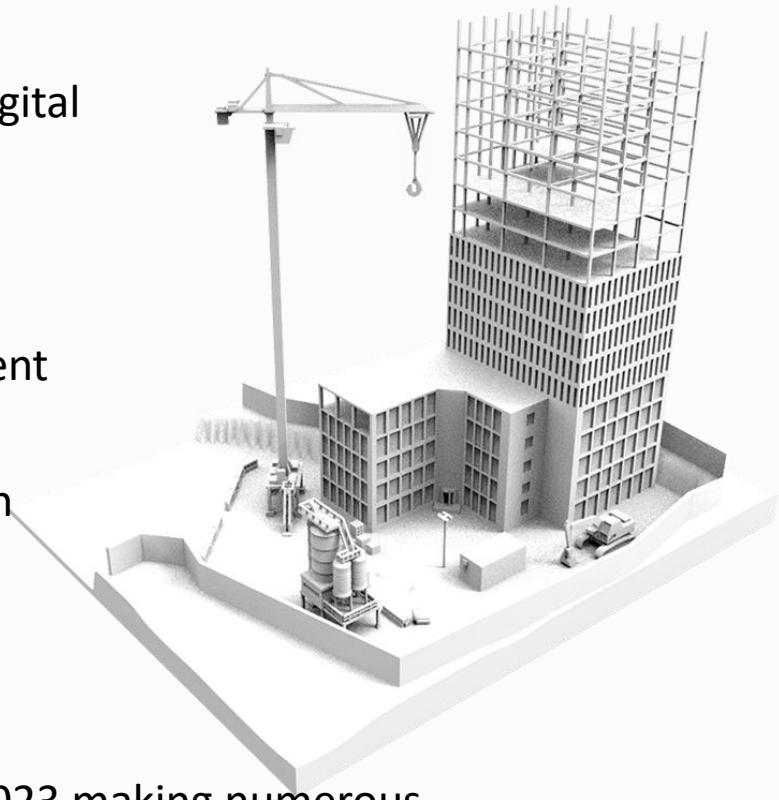
The main effort is the revised eIDAS regulation



- **eIDAS 1 :** voted in 2014, came into effect in 2016 (2018 for digital identity schemes)
- **An imperfect construction : (i)** mutual recognition of digital identity schemes and (ii) e-trust services
- A clearly positive impact for e-Trust Services but disappointment on the digital identity side
- **A major revamp announced in June 2021** – expected to reach the statute books in 2023 (eIDAS 2)

But this is not the only piece of regulation making reference to digital identities

- A **Digital € draft proposal regulation** was presented in June 2023 making numerous references to digital identities
- Also, the **European Anti-money laundering framework** is being reformed, with a proposal for uniform Know-Your-Client (KYC) rules centered around digital identities for remote ID-proofing

There is no direct reference to DLT in eIDAS 2 (nor in eIDAS 1)

- No explicit reason, but not entirely surprising in the European context
- '*Electronic ledgers*' initially presented as a new e-Trust service, but removed by EU Parliament

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What's wrong with eIDAS 1?

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An uneven construction : two houses under the same roof, really

The e-Trust services side : Common standards and certification process

- **E-Trust services :** e-signatures & e-seals , e-stamps, e-registered messages, e-web authentication
- **Common rules and technical specifications** usually prepared by ETSI
- **Services primarily offered by private sector** : e-Trust Services Provider status available to all applicants (certification process)
- **All e-Trust services legally recognised in EU-EEA countries without discrimination**, irrespective of where provided

The e-ID side : An inter-governmental mutual recognition process

- **Voluntary framework** : Member States are not required to notify eID schemes
- **Public-sector focus** : A framework primarily for public services. Private sector needs are ignored
- **Few common technical specifications** : Member States have considerable freedom to implement digital identity schemes, hence interoperability issues
- Clearly « **Shows its age** » : no integration of mobile device usage

But in spite of many deficiencies, eIDAS 1 remains a landmark regulation for digital identities

- First - and so far only – set of rules organising the **cross-border recognition of digital identities**
- Enshrines the « **Level of Assurance » concept** for digital IDs

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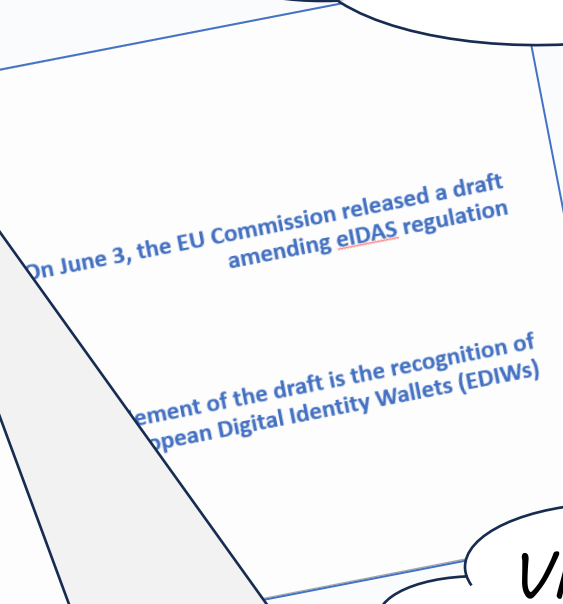
So what has happened since June 2021?

This looks like a repeat of the presentations he made on the same topic...



Vipin may think it's the same but it's not...

Hey Stéphane, what's the latest news on eIDAS 2?

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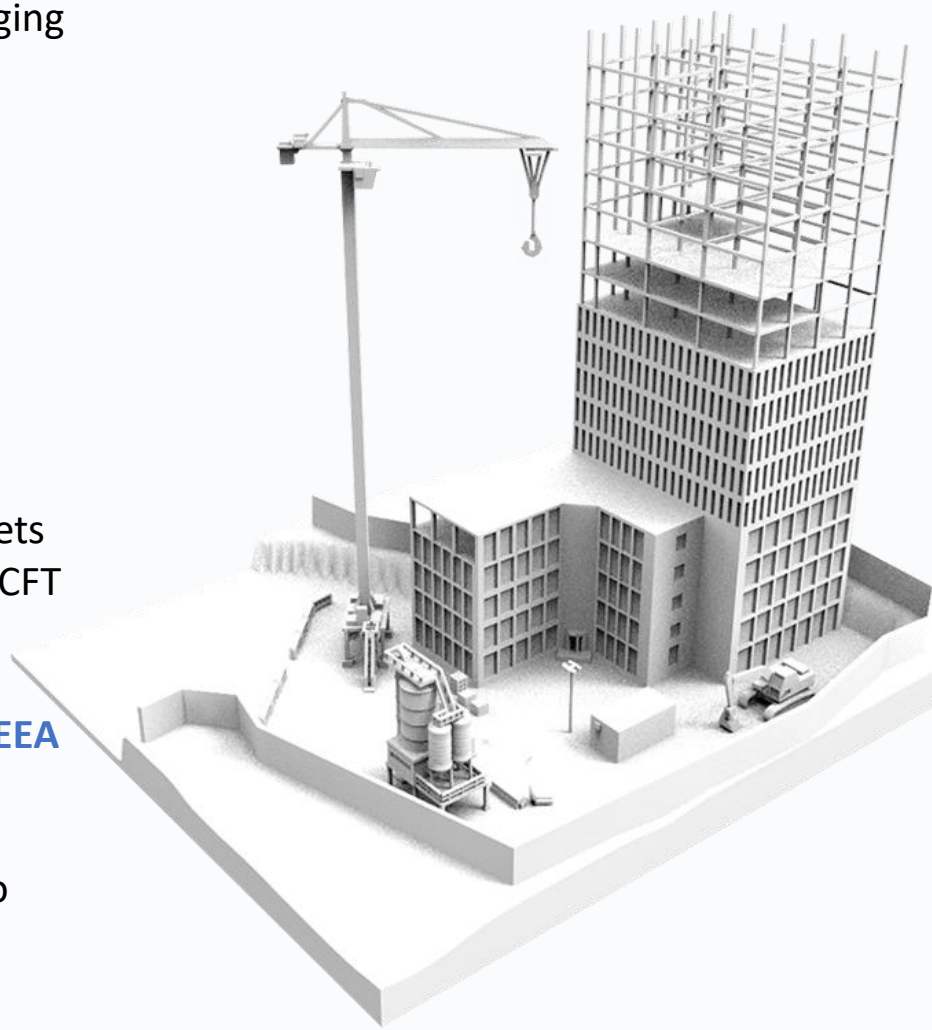
eIDAS 2

A word of caution for non-Europeans

- **A very ambitious project**
  - Highest LoA, Highest Privacy, Greatest diversity of use cases
  - Reconciling these requirements is guaranteed to be challenging and fraught with difficulties
  - Some technical specifications are in draft form or not fully stable
- **A clear political dimension (and backing)**
  - The most tangible EU initiative for European citizens in the digital area
  - A public-led project controlled by member States who will remain legally responsible for the deployment of EUDI Wallets
  - Already interfaced with key regulations – for example AML/CFT rules (amongst many others)
- **No surprise this should take time, especially when involving 30 EEA countries.**
  - Consider at least a 5-year horizon - starting in June 2021 - to reach full deployment
- **Full success is by no means guaranteed… but complete failure is very unlikely**



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The eIDAS 2 ecosystem

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The **eIDAS 2 Regulation**
(proposal near final adoption)
+
Delegated/Implementation acts
(not drafted yet)

The eIDAS 2 Construction site

The ARF
Architecture and Reference Document

A work-in-progress document
(First outline 2022 02
current version 2023 04)

Reference implementation
of the EUDI wallet

The LSPs
Large Scale Pilots
Testing real-life use cases

Priority use cases
- Identification & authentification to access online services
- Mobile driving licence

Other use cases
- Health, Educational credentials, Digital finance, Digital travel credentials

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Eidas 2 where are we now?

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The end of the eIDAS legislative process is finally in sight

29 June 2023 - *A provisional political agreement of the European Parliament and the Council of the EU has been reached on the key elements of the proposal for a* ***legal framework for a European Digital Identity****. The central innovative element of this framework is a personal digital wallet in the form of a secure and convenient mobile app. This will allow all EU citizens, residents and businesses to have trustworthy access to public and private online services all over Europe.*

The ***EU Digital Identity Wallet*** *will revolutionise digital identification by giving Europeans control over their personal data with the full convenience of mobile apps. They will be able to use online services and provide identity credentials in full control of their personal data.*
*(****EU Commission website****)*

It's already been a lengthy journey …

- Commission draft presented in June 2021
- eIDAS Expert Group set up in October 2021
- First version of **Architecture & Reference Framework document** presented in February 2022
- First considered by EU Parliament in October 2021
- **4 Large-Scale Pilot (LSP) projects** launched to test the EUDI Wallet – December 2022
- Wallet design consortium (NiSCi) selected – December 2022
- Draft regulation approved by European Council in December 2022
- Draft regulation approved by European Parliament in March 2023
- '*Trilogue process*' aiming to reconcile EU Council and EU Parliament positions initiated April 2023
- Final version of the regulation expected in coming weeks and likely to be finally approved within 3-4 months.

We do not yet know what the 'political agreement' involves, although it is likely to be a compromise between the EU Council and EU Parliament approved versions

- To illustrate, it is unclear whether (DLT-based) 'Electronic Ledger' services will be in the expanded list of e-Trust services.

And this is just the beginning of the EUDI Wallet implementation journey

EUDI Wallets

What you need to know

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EUDI Wallets will allow users to store, manage and validate identity data and other e-credentials and securely communicate them to relying parties as well as sign with qualified electronic signatures

MUST-HAVES	Must be accredited – complies with common specifications	Common specifications co-constructed with eIDAS Expert Group
	Must be issued or 'approved' by a Member-State	Digital equivalent of national ID cards & passports
	Must offer ***High*** Level of Assurance	For remote ID-proofing - will likely imply using biometric-based ID-proofing processes (CIR 2015/15002 & ETSI 119 461)
	Must put EDIW users in full control of EDIWs	
	Must be accepted for identity-proofing by relying parties offering **financial** and other key services as well as '*very large online platforms*' (GAFAM + BATX)	Private-sector focus. Cannot be refused by key private and public service providers Relying parties will need to be authenticated
	Must accept eAAs (electronically attested attributes)	Range of attributes goes beyond core ID attributes (extends to status, qualifications, **financial data**, etc)
	Must be free of charge for users	(but not necessarily for other participants)
	Must create Qualified Electronic Signatures/seals	**CRITICAL REQUIREMENTS**
	Must allow offline as well as online interactions	
	Must support Strong Customer Authentication requirements (inc. for payment authorisation)	**WITH STRUCTURAL IMPLICATIONS**
VERY NICE-TO-HAVEs	**Strengthen privacy**	… but will need to communicate the 'Unique identifier' whenever required (when?)
	Allow several identity profiles	Use for private/professional context
	Support CBDCs	

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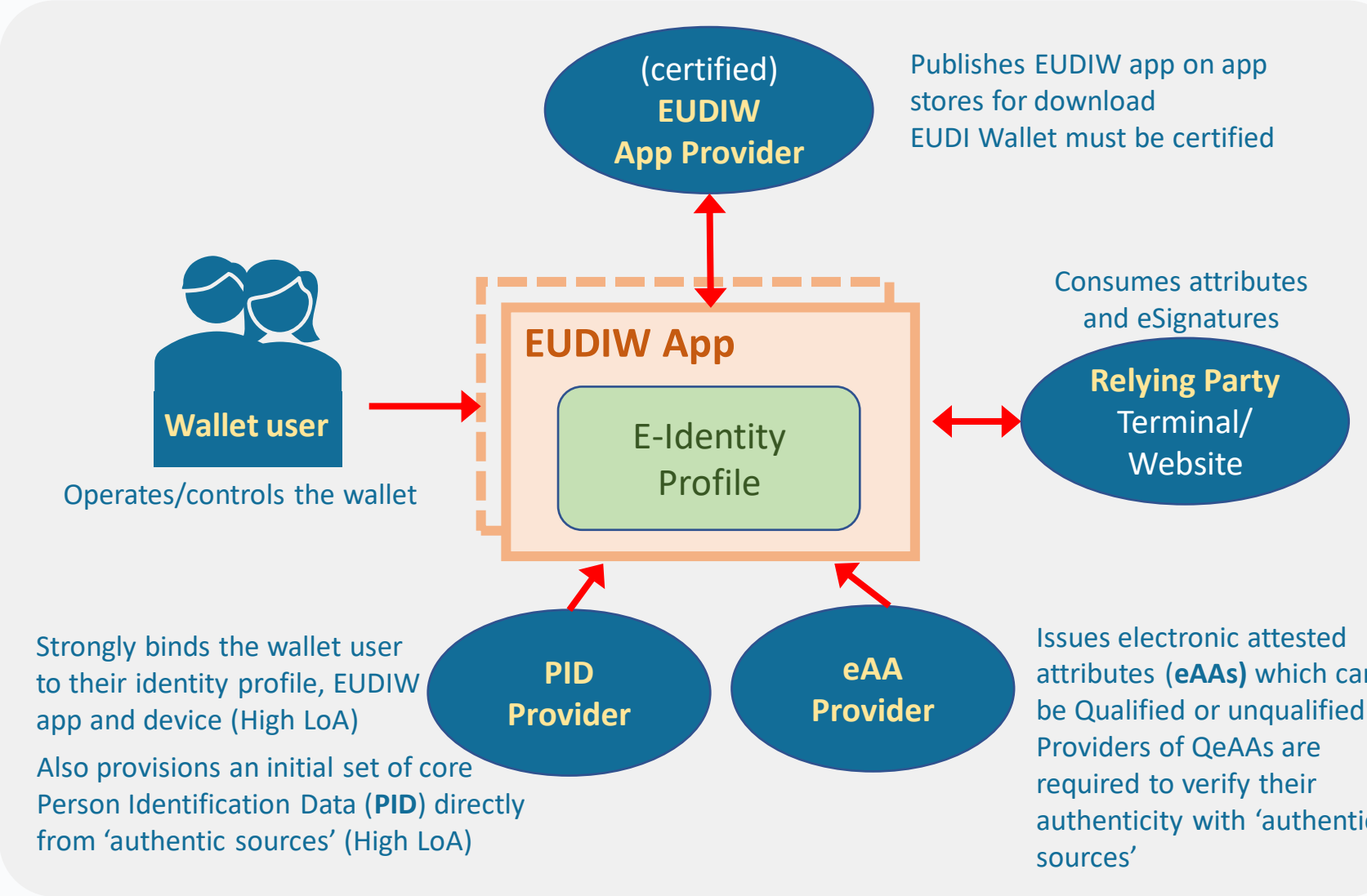
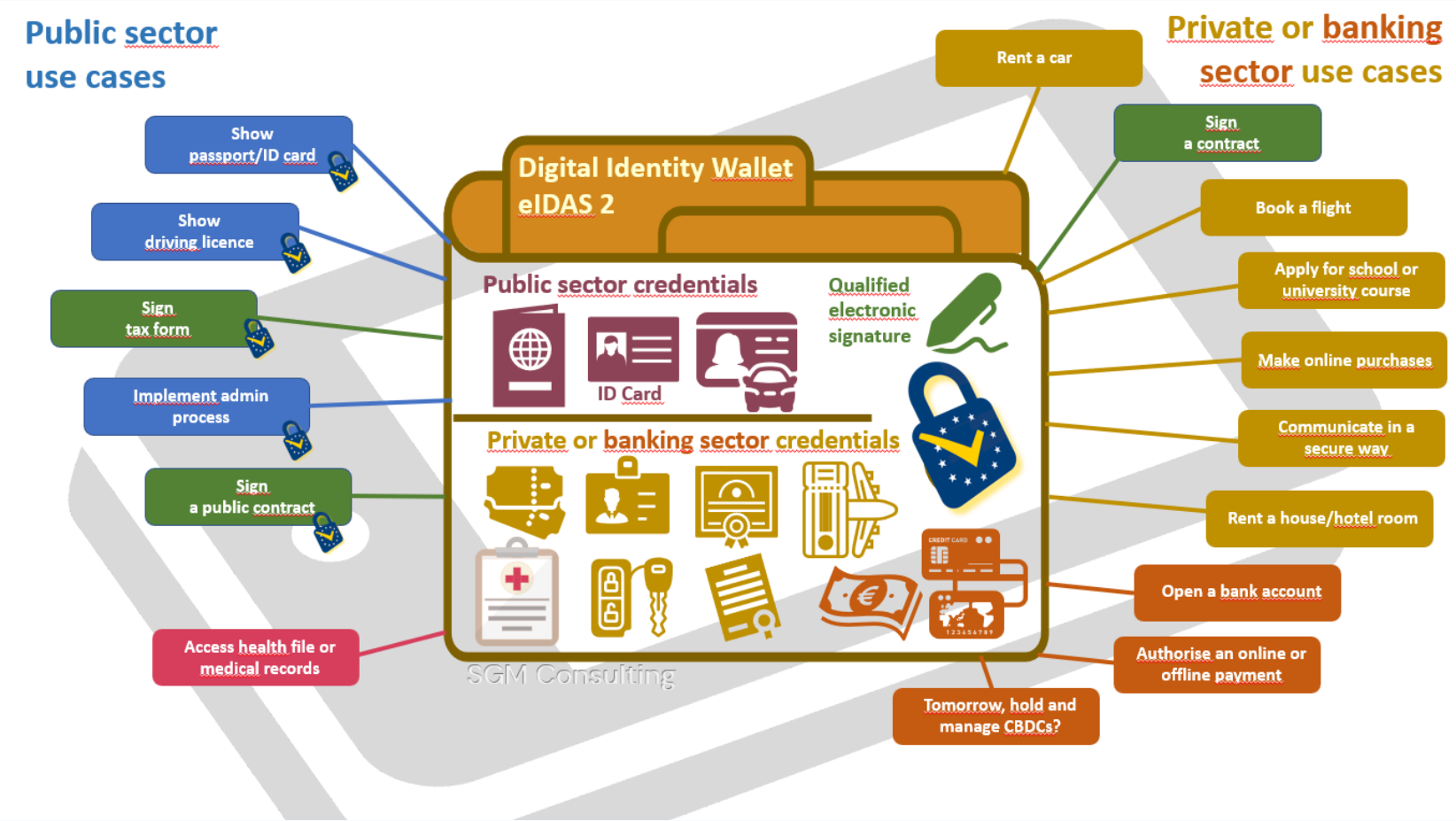
The EUDI Wallet ecosystem

EUDI Wallets – the ecosystem (simplified presentation)



The EUDI Wallet use cases

EUDI Wallets – the use cases



The key use cases are more specifically considered by the eIDAS *Large Scale Pilot* projects explored by industry consortia

Link to **EWD Consortium**
Link to **POTENTIAL Consortium**
Link to **NOBID Consortium**

Authorizing online/offline payments is key to the smooth deployment of many use cases

The EUDI Wallet technology specs

ARF technology specifications focus on mdoc ISO 18013-5/23220-4 format and REST API

- ISO/IEC 18013-5 on mobile driving licence (mDL) applications (2021 09)
- ISO/IEC 23220-1/4 on building bocks for identity management via mobile devices (draft version)

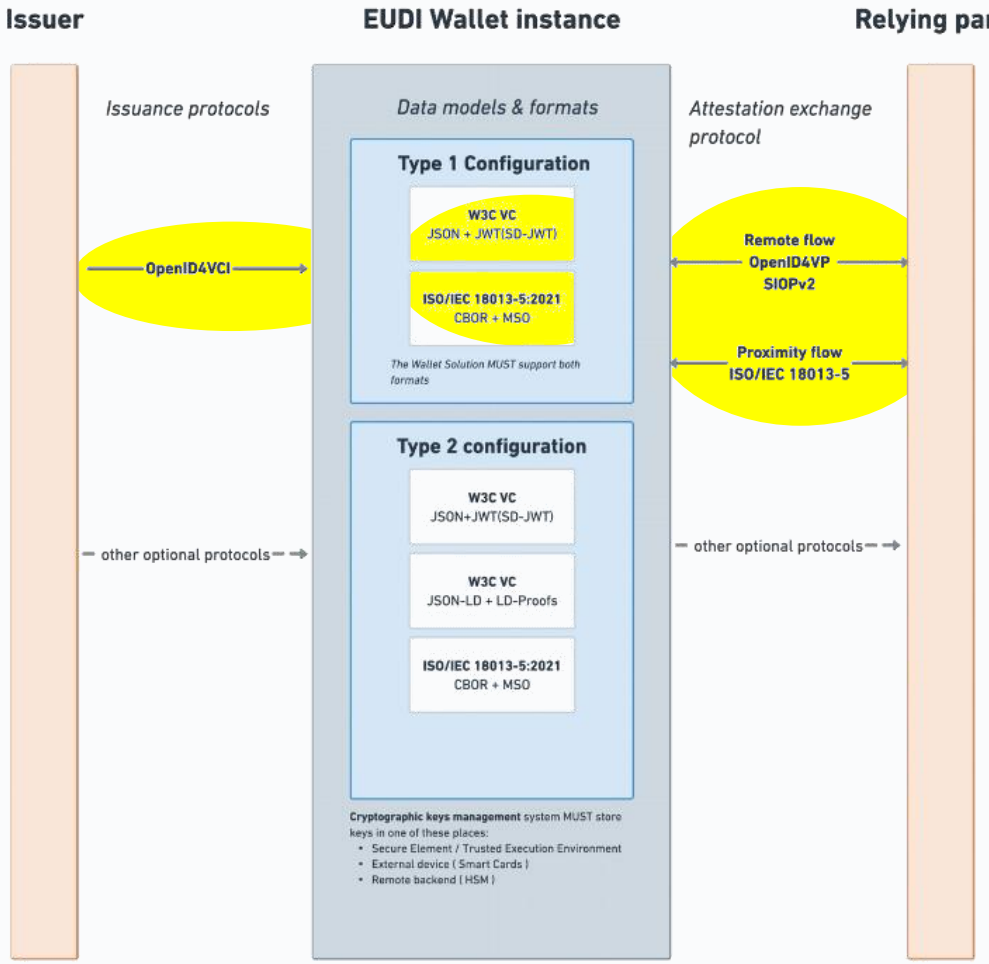


Figure 7. EUDI Wallet configurations.

Type 1 configuration : High LoA essential
Type 2 configuration: High LoA NOT essential, hence more flexibility

The reference to **ISO/IEC 18013-5** for proximity flows is consistent with the Mobile Driving Licence use case, but raises privacy concerns when relying parties cannot be assumed to be trusted.

OpenID for Verifiable Presentation uses VP tokens a container with Verifiable Presentations expected to be in the **mdoc ISO 18013-5 format**.

The **W3C Verifiable Credentials Data Model 1.1** is also mentioned but may be given second priority (to be confirmed)

There is no mention of DLT in the EUDI Wallet specifications. DLTs have not been considered at all

These specifications are not addressing the relying party authentication – a key requirement for digital interactions

On the other hand, this is still *work-in-progress* and changes may be made in the future.

Payments are also in scope

The overall eIDAS 2.0 paradigm is to move to a user-controlled identity-based ecosystem

Payments are a key part of most wallet ecosystems

Payment-enabling EUDIWs will provide convenience and value to end users

Will strengthen security and sovereignty

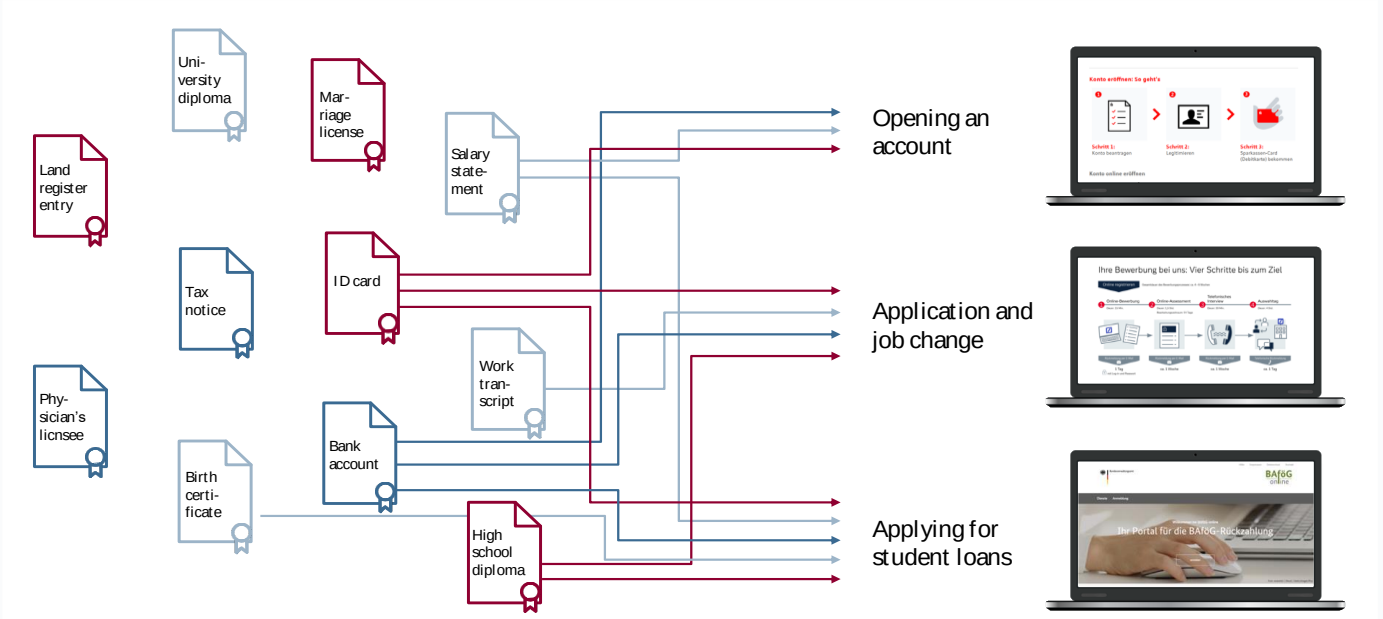
Support for the retail payment strategy and the digital finance initiatives

Will provide support for the digital euro

But overall, there is a recognition that many interactions need to mix financial and other attributes, such as, notably, ID and status attributes.

- Civil & family status
- Professional status
- Licences or eligibility status

This opens the way to new value-added services offered by financial institutions



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EUDI Wallet Payment specs

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The payment use case is relevant for EUDI Wallets

- Ability to store and communicate PII and [Q]eAA data to relying parties
- Strong User Authentication (SCA) in line with PSD2 requirements
- Online and offline connectivity
- Sign with Qualified electronic signature/seal offering highest legal protection
- Required to be accepted by payment service providers (including banks)

The ability to mix identity, status and payment attributes heralds a new (disruptive) era for customer journeys

And the June 2023 Digital € draft proposal makes clear references to EUDI Wallets for CBDC interactions


EUROPEAN COMMISSION

Brussels, 28.6.2023
COM(2023) 369 final

2023/0212 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the establishment of the digital euro

{SEC(2023) 257 final} - {SWD(2023) 233 final} - {SWD(2023) 234 final}

Recitals

- *The EU-wide interoperable **EUDI Wallet** allows users, on a voluntary basis, to on-board and perform strong customer authentication when making payments […] The same functionalities should be offered to digital euro users.*
- *Users should be able, if they so wish, to onboard and authorise payments with the digital euro by using EUDI Wallets."*
- *Payment service providers should also accept the use of **EUDI Wallets** if the payer wishes to use the wallet for payment authorisation of digital euro payment transactions. Further, to facilitate offline proximity payments in digital euro, it should be possible to use **EUDI Wallets** for the storage of digital euros in the payment device.*

Substantive provisions

- *Front-end services shall be interoperable with or integrated in **EUDI Wallets**.*
- *On request by digital euro users, payment service providers distributing the digital euro shall ensure that those users can rely on the functionalities of their **EUDI Wallets***

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Is this fit for payment purposes?

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At the heart of payment interactions…

- **'Zero trust by default' :** Mutual authentication is required for fraud prevention purposes
- **Legal irrevocability** of payment instructions must be achieved with both payer and payee fully committed
- **Audit trail of payment messages** that can be archived and presentable as legal evidence in court proceedings
- **Strong User authentication** in line with PSD2 requirements (with '*Dynamic linking*' using authentication code)

It is not obvious that these requirements can be met with the current set of contemplated specifications

- Binding with wallet user is privacy-invasive with ISO/IEC 18013-5 specifications (implies transfer of facial image for offline interactions)
- W3C Verifiable Credentials specifications struggle with mutual commitments and do not support offline interactions
- REST API request-response are not tailored to meet audit-trail requirements

But this is by no means the end of the story. Wait & see…

The four-corner model remains relevant for payment interactions

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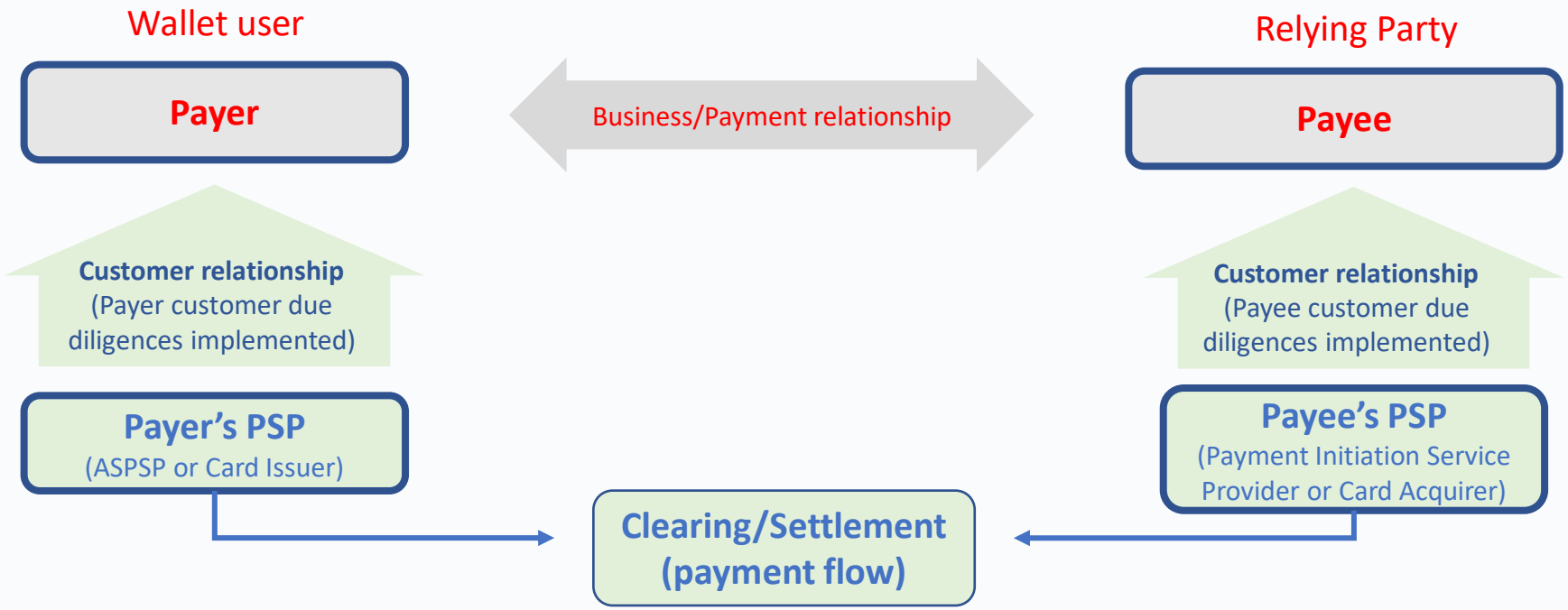
Four-Corner Model
(summary presentation)



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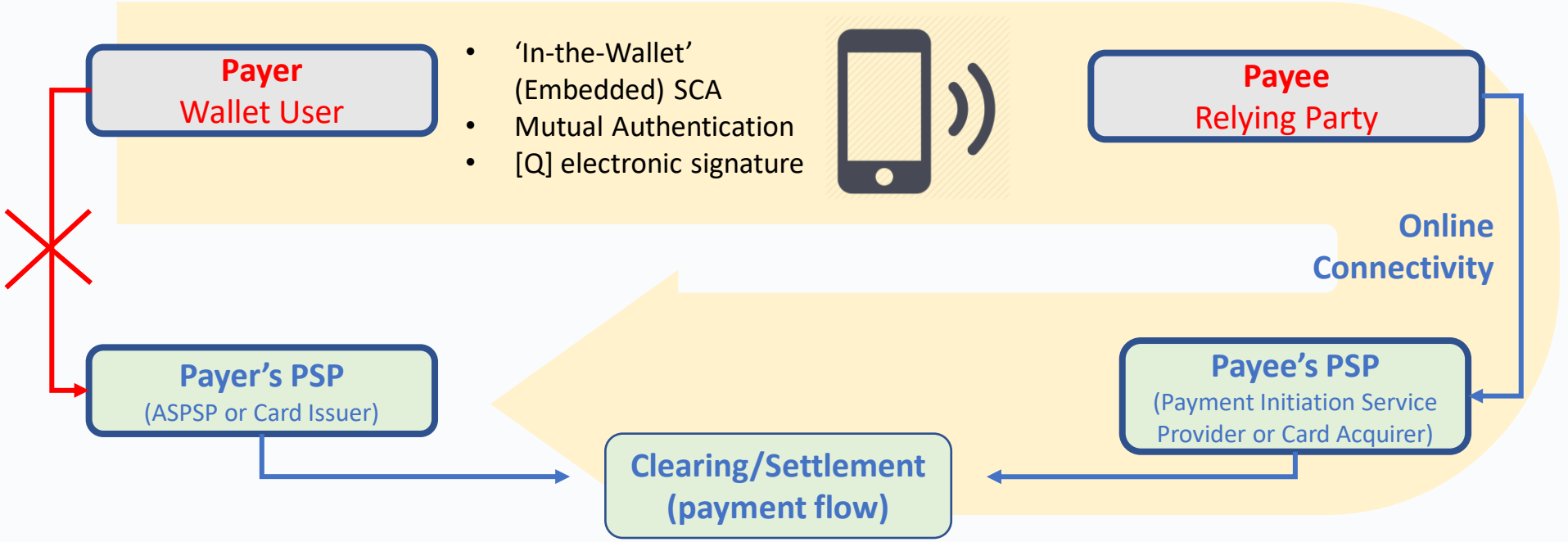
Why offline payment interactions matter

OFFLINE/PROXIMITY CONNECTIVITY: the wallet user has no internet access

… and no connection with and access to his/her PSP

… but is able to interact with the relying party (via QR code, NFC, BLE, UWB)

(On the relying party's side (payee), there is an online connection)



- Internet access still a problem, especially in remote and crowded areas
- Proximity connectivity offers better UX at POI
- Cards and Wallet-based X-Pay solutions support offline interactions
- Retail CBDCs will need a wallet supporting offline interactions

But offline connectivity is :
- not supported by all technical standards
- Disruptive for ASPSPs (banks)

Thank you for your attention

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