



# Decentralised Identities: a new reality for the EU citizens

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“ 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 soon 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 and how data is used.



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## Political focus and key issues of EU digital identity

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# EU digital identity



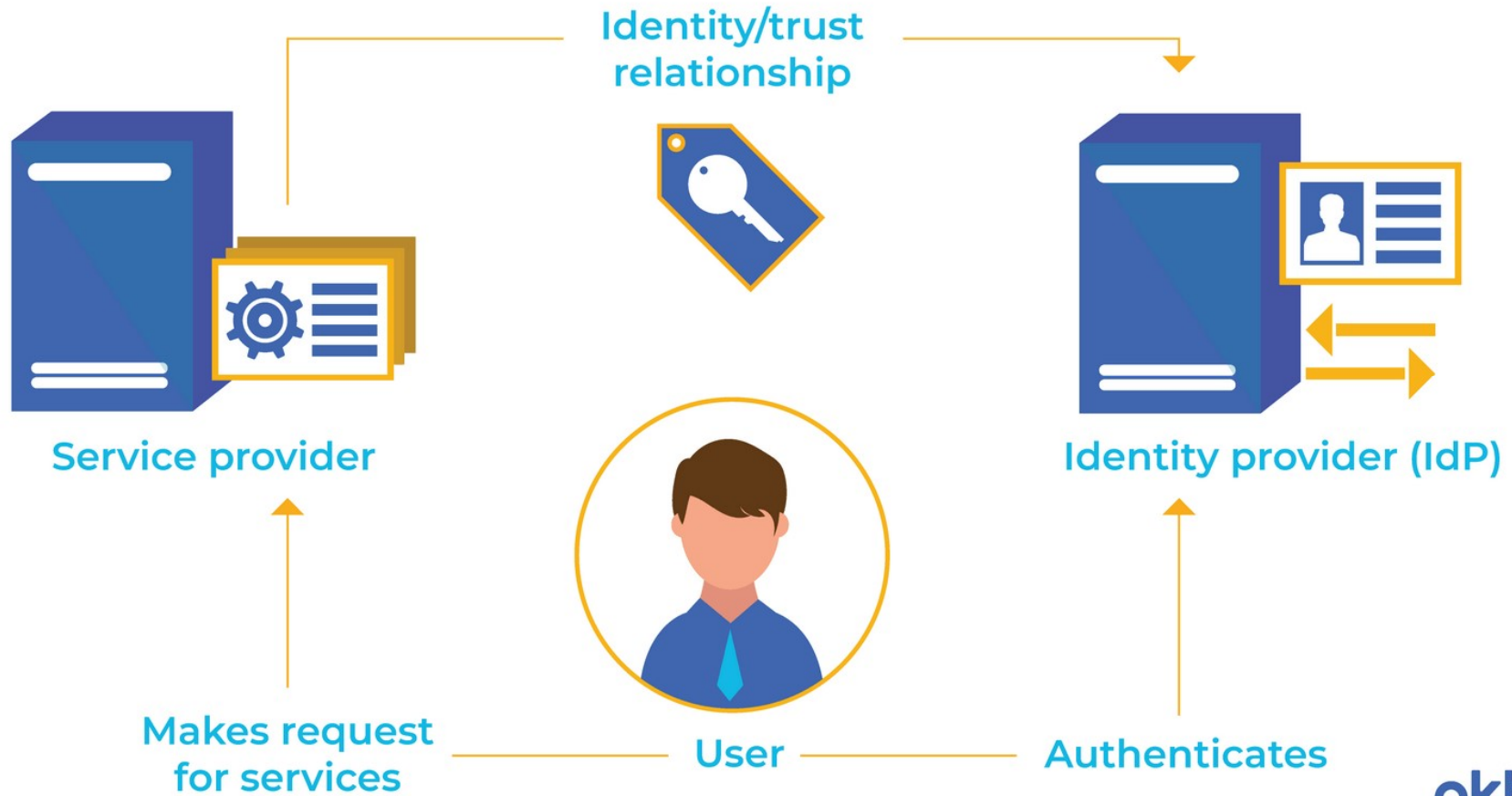
#DigitalEU



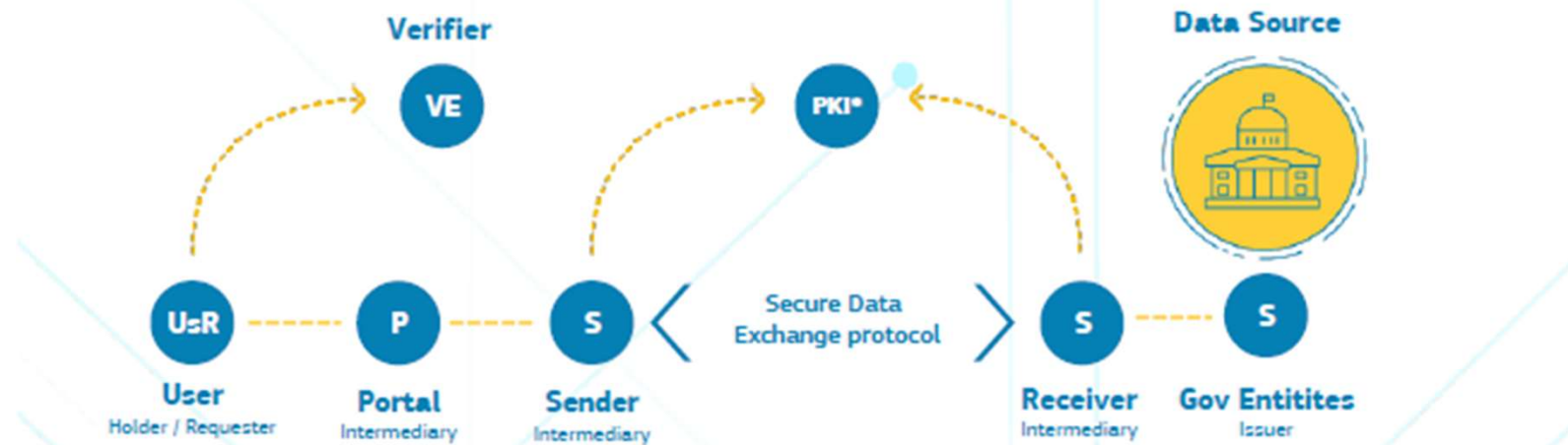
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Our current solutions?

# Federated Identity Solutions



# The traditional data sharing pattern



In the classic pattern of information sharing, the citizen, or the verifier of the information, receives the information directly from the authentic source in real time (e.g. a population register, a land register or a business register). This pattern creates and maintains a number of intermediaries that ensure that the exchange of information can be trusted.

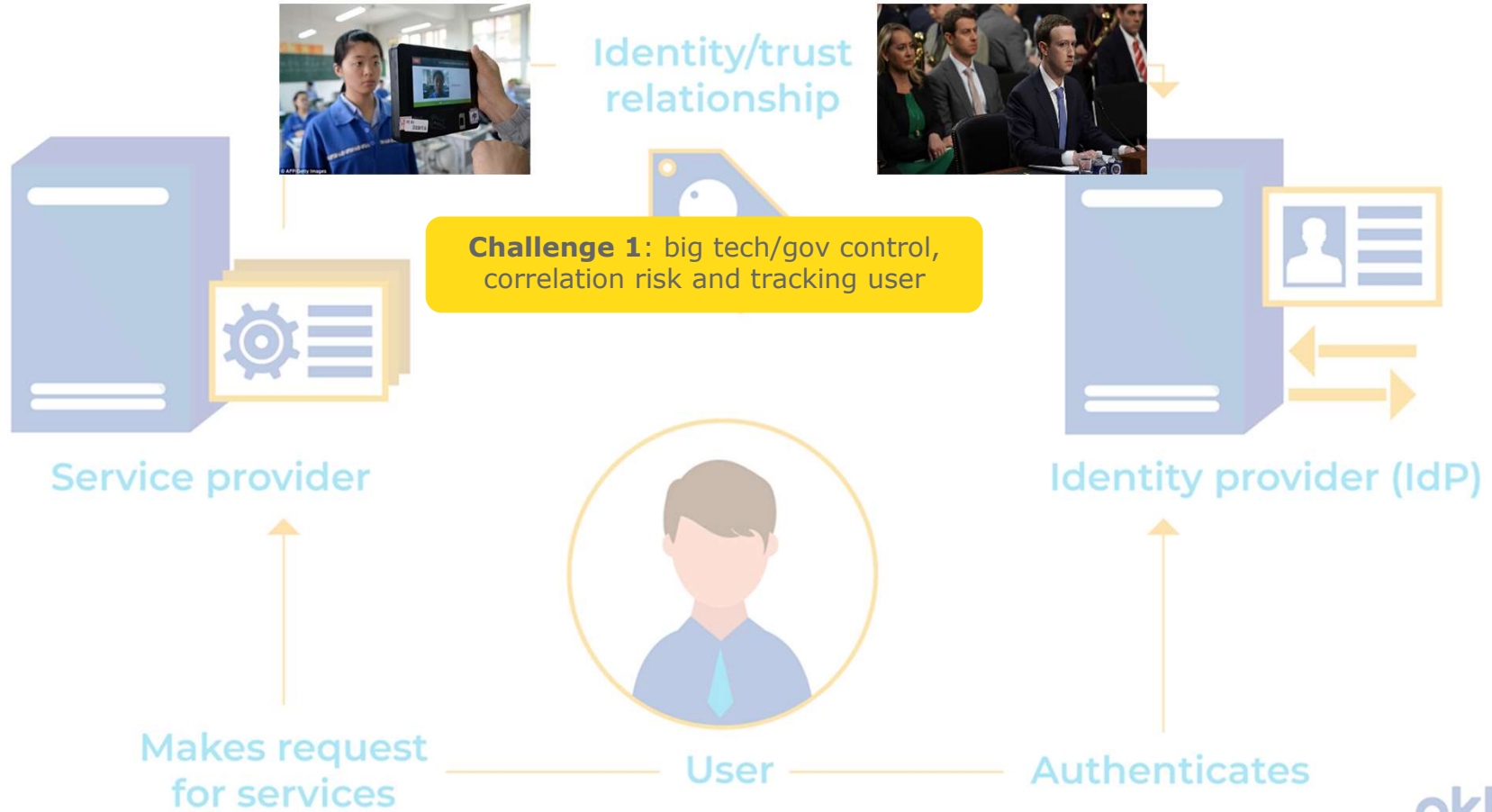
For example, to provide digital documents through an online platform, one must use a secure protocol to exchange information with the data source and make sure that the right person receives access to the document. For cross-border exchange of data, these networks get even more complex with the growing number of network participants and intermediaries.



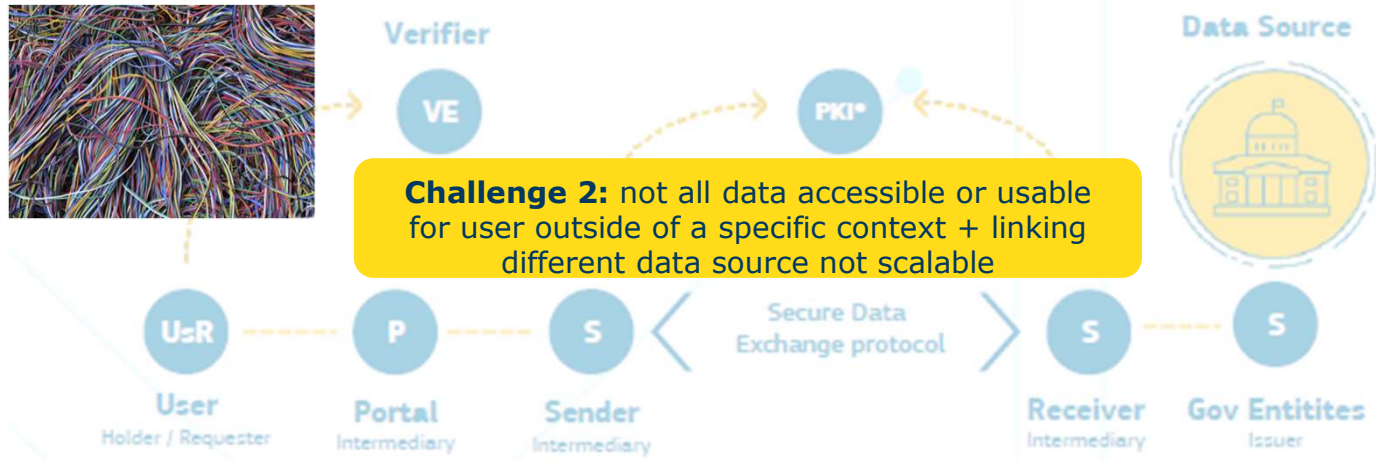
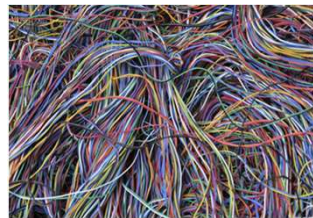


2 → The challenges and limitations of the current approach for the EU digital identity program?

# Federated Identity Solutions



# The traditional data sharing pattern



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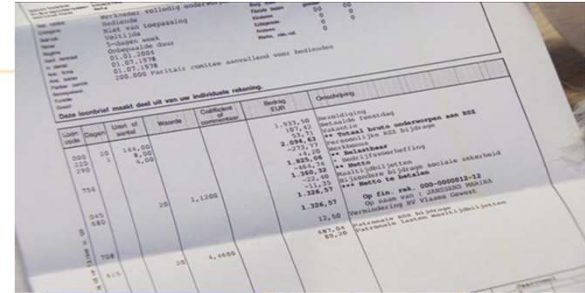
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# Federated Identity Solutions



Identity/trust relationship



**Challenge 3:** selective disclosure or discrete information sharing difficult



Service provider



Identity provider (IdP)



User

Makes request for services

Authenticates

# The traditional data pattern



**Challenge 4:** User consent? Multiple identities? Trusting information outside the own business domain?



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→ Is there an alternative?

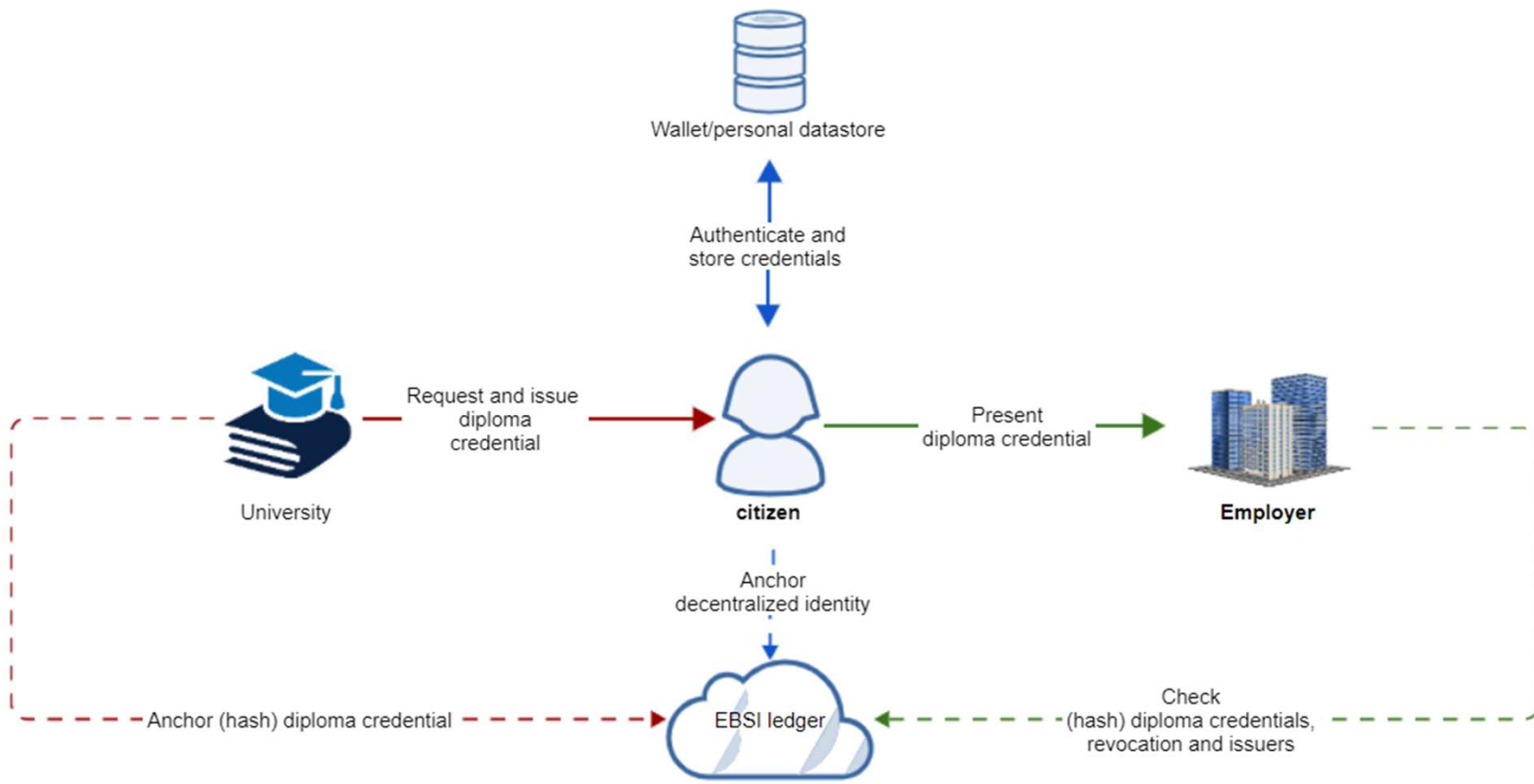






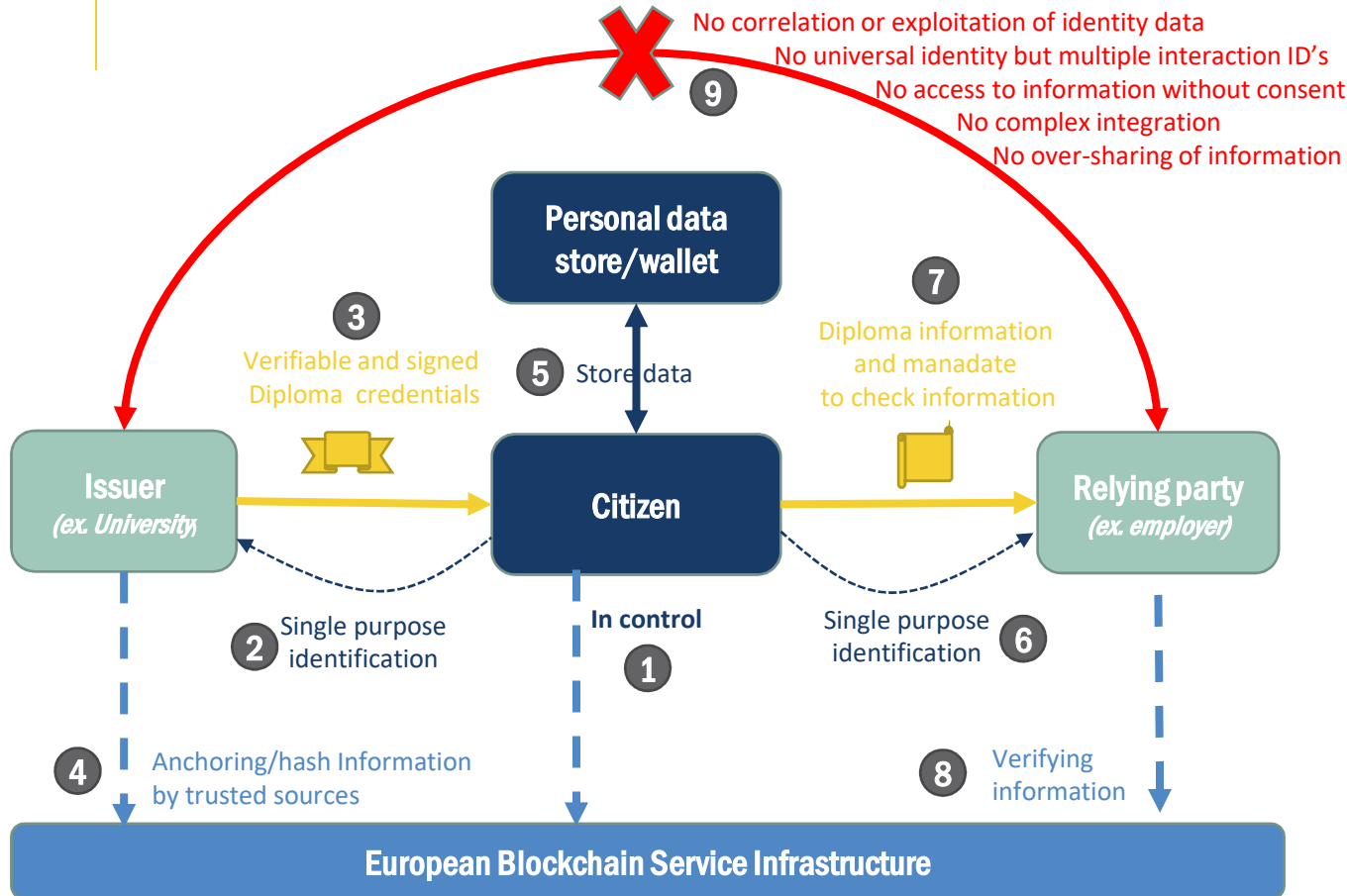
**'Self-Sovereign Identity** is the next step beyond user-centric identity and that means it begins at the same place: the user must be central to the administration of identity.'

— **Christopher Allen**



# European Self Sovereign Identity Framework

Added value in a decentralized identity context



## ESSIF

### Added value

- Involvement of Government services and information.
- Linking of decentralized identity with eIDAS and GDPR.
- Providing (multiple) government base identity.
- Single purpose identification.
- Secure trust anchor for issuers and credentials.
- Simplification of public services and access to public information cross border and cross sector.
- Standardisation of digital interactions for citizen in public and private sector.



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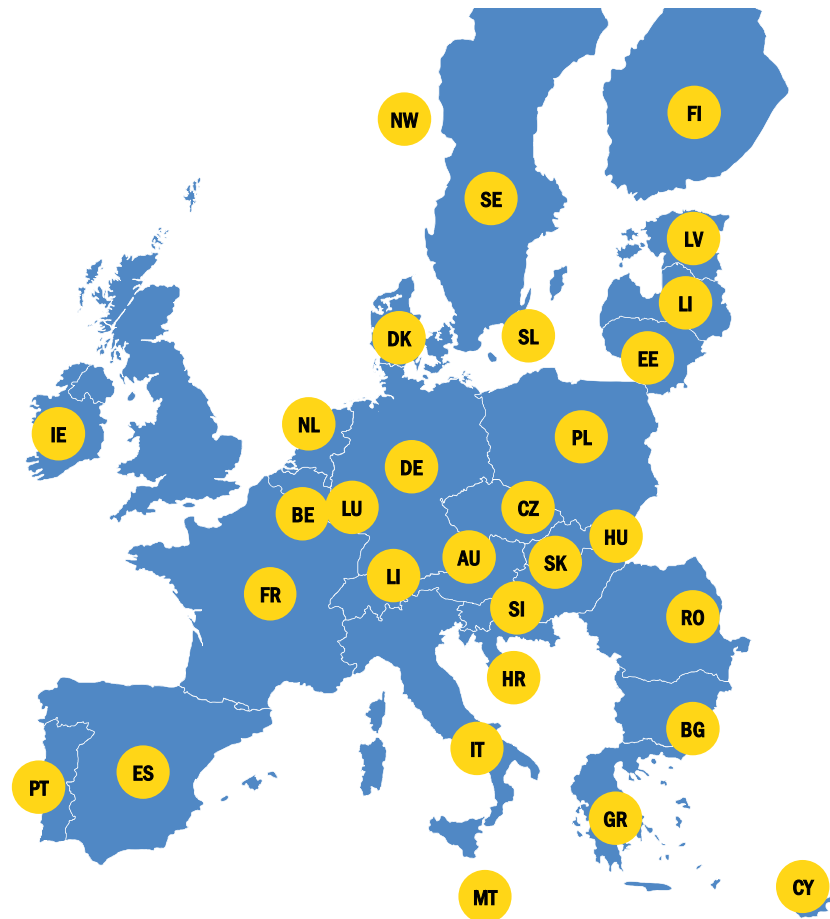


# European Self Sovereign Identity Framework



The European Blockchain Partnership is a group of 29 countries and the EC. We help public administrations accelerate the creation of trustworthy cross-border digital services.

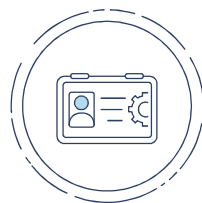
● Currently 27 live Nodes



**EBSI supports the creation of cross-border services e.g. for citizens to manage their own identity and educational credentials as well as to notarise documents.**



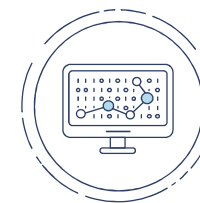
Notarisation  
of digital information



European Self-  
Sovereign Identity



Diplomas  
management



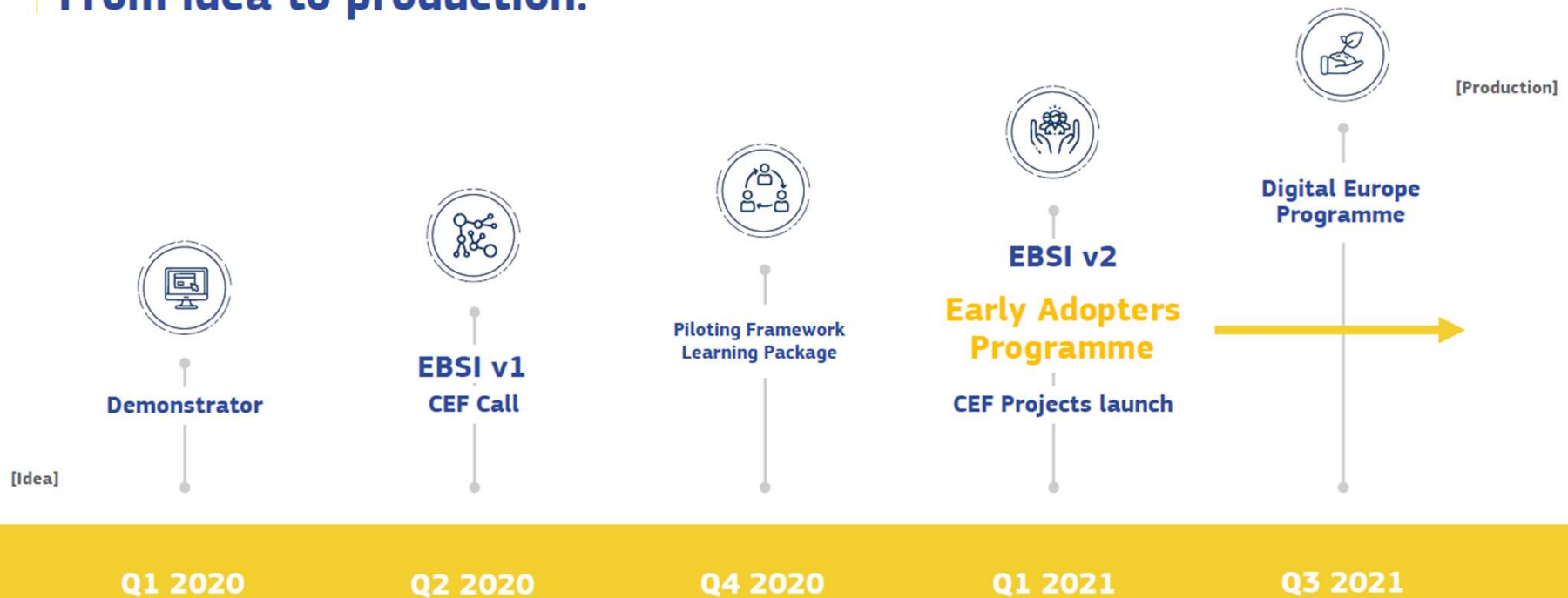
Trusted data  
sharing

(Reserved for TAXUD's  
Community at this stage)

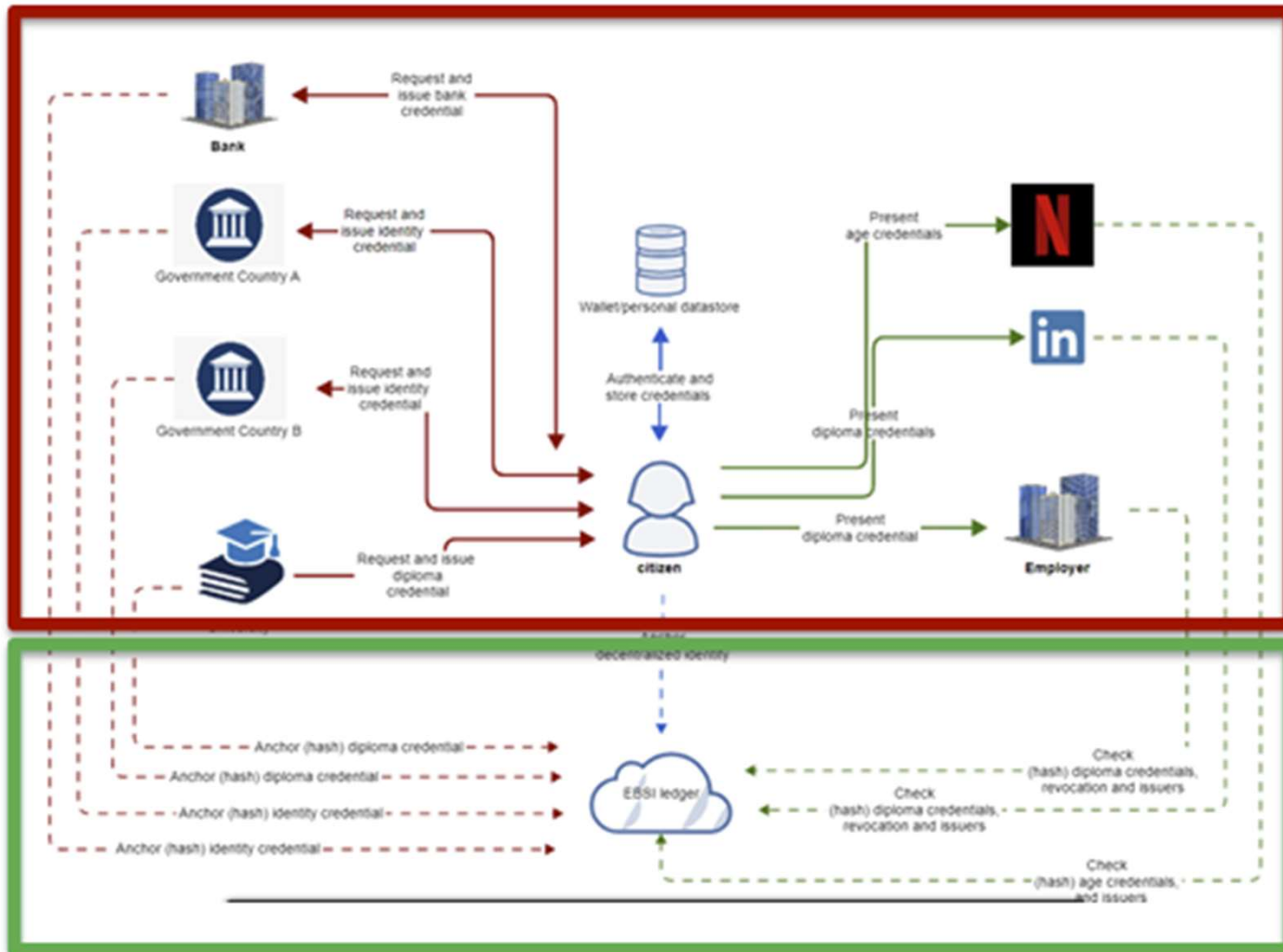
3 new use cases are in initiation phase / design phase

SME financing, European Social Security Identification Number, Asylum process management

# The story of EBSI in a nutshell. From idea to production.







# ESSIF - Universal availability

ESSIF added value towards identity market and SSI-market



Citizen

Public sector

Private sector



Define ESSIF compliance rules to protect citizens and enterprises and support interoperability

Secure anchoring of public service verifiable credentials and presentations on EBSI-ledgers of ESSIF

Specifications and implementations for public sectors authentic sources **involving identity** or cross-road DB to interact with SSI-market

Provide a bridge between eIDAS and SSI and apply different Trust Level of Assurance within the SSI-interactions

Secure, discrete and trustworthy validation of public services claims via EBSI-ledgers of ESSIF

Implementation of supporting ledger-capabilities to check issuers, revocations and other validation checks

Privacy secure and simplified interaction/sharing of public services information cross-border and cross-sector via data-owner

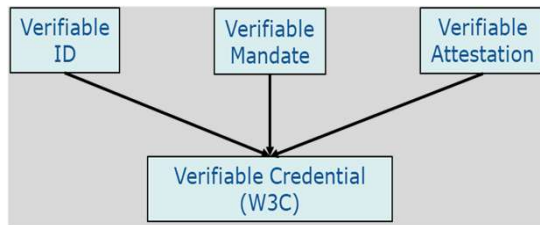
# W3C standards we build on

**ESSIF will be based on Open standards but implement them in a European way**

W3C Decentralized Identifiers (DIDs) v1.0  
 W3C Peer DID Method Specification (Jan. 03 2020)  
 W3C Verifiable Credentials Data Model 1.0  
 W3C Verifiable Claims Use Cases  
 DKMS (Decentralized Key Management System) Design and Architecture V4  
 W3C Linked Data Proofs 1.0

.. aligned with eIDAS and GDPR

From Technical Specs to Legal/Business Concepts



**ESSIF Verifiable ID**

```

{
  "@context": [
    "https://www.w3.org/2018/credentials/v1",
    "https://essif.europa.eu/schemas/vc/2019/v1",
    "https://essif.europa.eu/schemas/eidas/2019/v1"],
  "id": "did:ebasi-eth:00000001/credentials/1872",
  "type": ["VerifiableCredential", "EssifVerifiableID"],
  "issuer": "did:ebasi-eth:00000001",
  "issuanceDate": "2019-06-22T14:11:44Z",
  "credentialSubject": {
    "id": "did:ebasi-eth:00000002",
    "currentFamilyName": "Franz",
    "currentGivenName": "Hinterberger",
    "dateOfBirth": "1999-03-22T00:00:00Z",
    "placeOfBirth": "Salzburg, Austria"
  },
  "proof": {
    "type": "EidasSeal2019",
    "created": "2019-06-22T14:11:44Z",
    "proofPurpose": "assertionMethod",
    "verificationMethod": {
      "type": "EidasCertificate2019",
      "certSerial": "1088321447"
    },
    "proofValue": "BD214fdlnBvBA+y6D..fnc8Y="
  }
}
                
```

Eg eIDAS Minimal dataset

**ESSIF Verifiable Attestation**

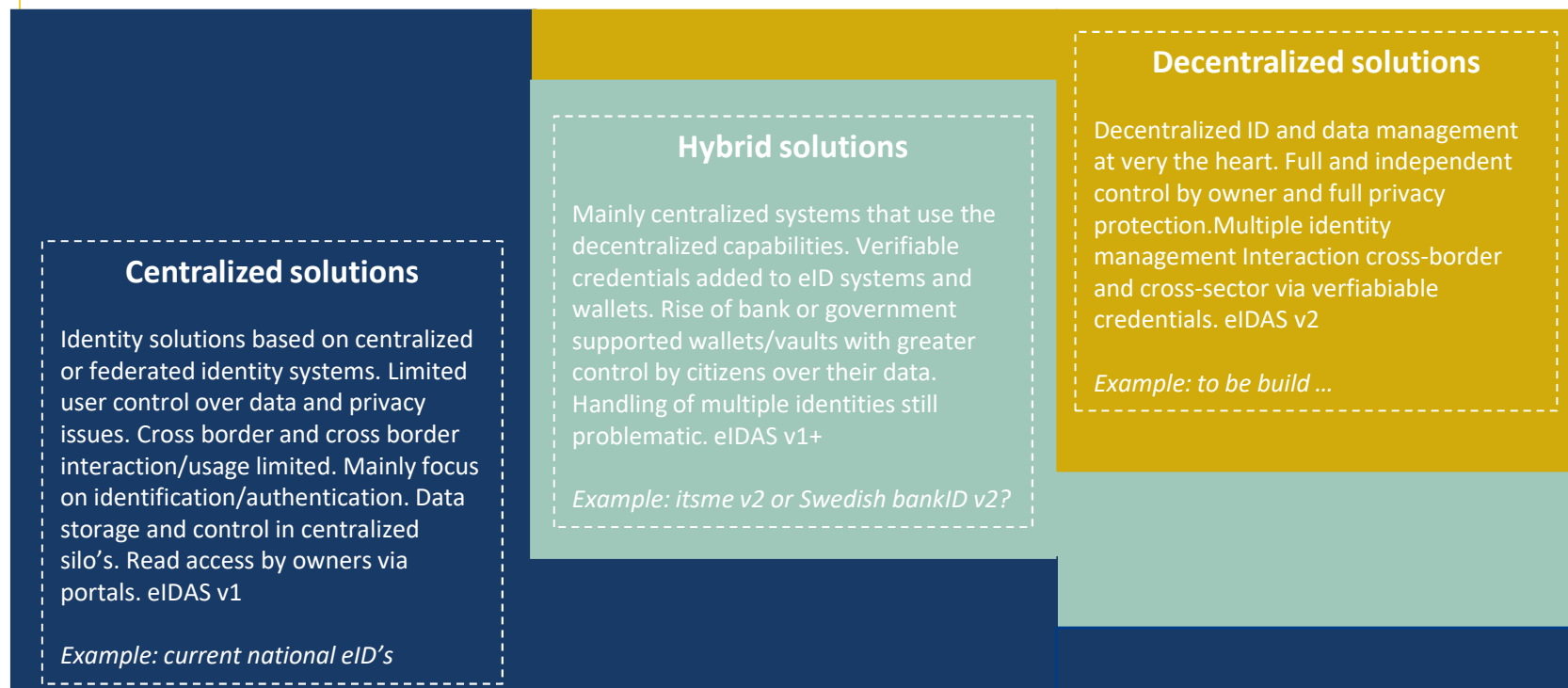
```

{
  "@context": ["https://www.w3.org/2018/credentials/v1", "https://essif.europa.eu/schema/diploma/v1"],
  "id": "did:alaustria:676fb4b4900/credentials/1872",
  "type": ["VerifiableCredential", "DiplomaCredential"],
  "issuer": "did:alaustria:676fb4b4900",
  "issuanceDate": "2019-06-22T14:11:44Z",
  "credentialSubject": {
    "id": "did:ebasi:zkxt-fsqg-qtwg-f",
    "alumniOf": {
      "name": "Barcelona University"
    },
    "graduatedAtTime": "2017-06-30T12:00:00Z",
    "degree": "MBA"
  },
  "proof": {
    "type": "EidasSeal2019",
    "created": "2019-06-22T14:11:44Z",
    "proofPurpose": "assertionMethod",
    "verificationMethod": {
      "type": "EidasCertificate2019",
      "certSerial": "1088321447"
    },
    "proofValue": "BD214fdlnBvBA+y6D..fnc8Y="
  }
}
                
```

Possibly Qualified eSeal

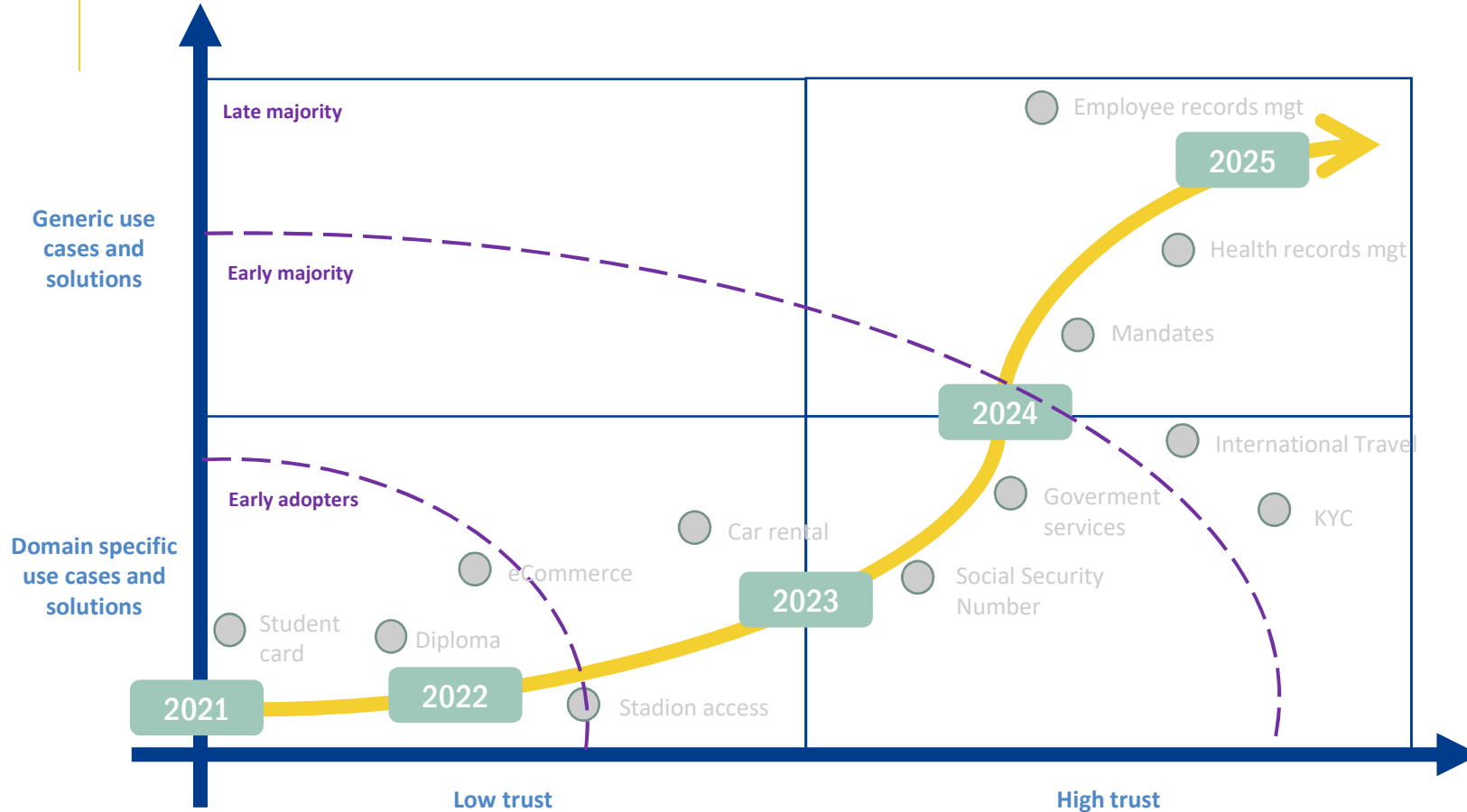
# ESSIF - Universal Availability

Transition towards decentralized identity/SSI



# ESSIF - Universal Availability

Estimated timeline and focus for ESSIF supported use cases and solutions





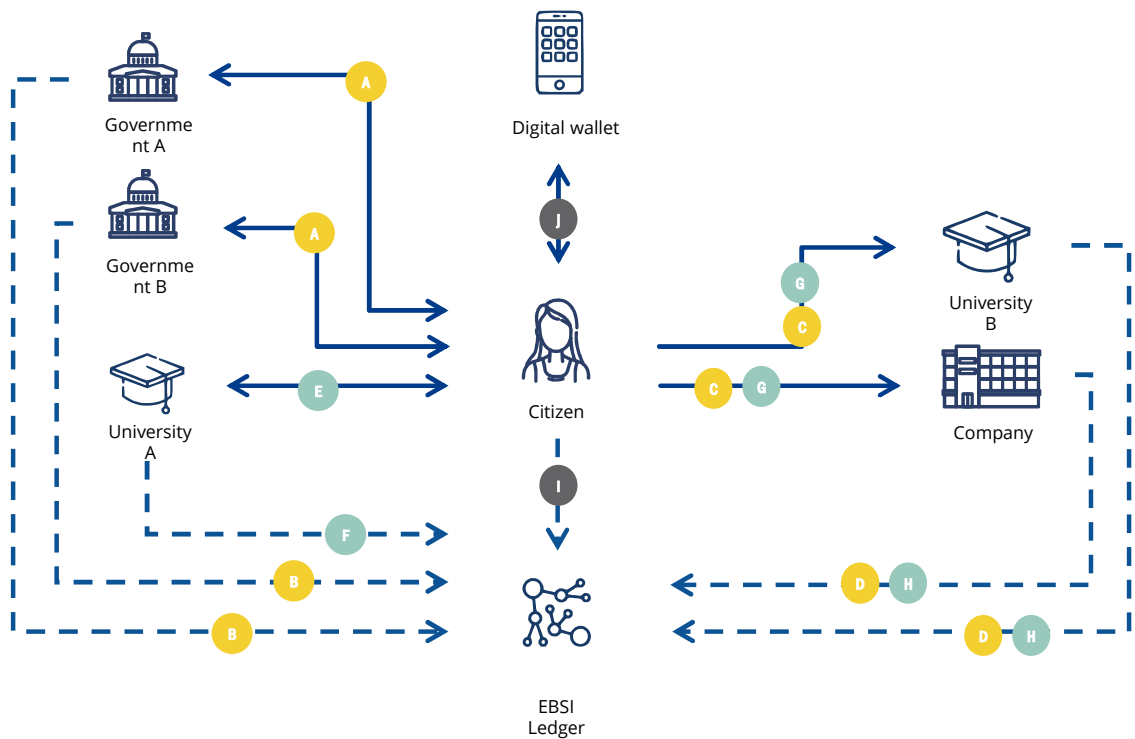
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# ESSIF-pilots

(to be included in the EU digital identity pilots – tbc)

# EBSI ESSIF and diploma use cases early adopters



## Identity

- A** Request and issue identity credential
- B** Store evidences\* of issuance (of identity credential)
- C** (Present identity credential)
- D** Check identity credential
- I** Anchor decentralized ID

## Diploma

- E** Request and issue diploma credential
- F** Store evidences\* of issuance (of diploma credential)
- G** Present diploma credential
- H** Check diploma credential

## Wallet

- J** Authenticate and store credentials



## Where are we now?

EA programme – Wave 1&2 status of Member state projects

### Wave 1

From **April until now**

# 10

Projects/MS started to experiment with EBSI by taking part in the Wave 1 of the EA Programme. Today, these projects are all almost in the “build” phase.  
Discover – Design – **Build**

### Wave 2

From **July until now**

# 18

Projects started to experiment with EBSI by taking part in the Wave 2 of the EA Programme. Today, these projects are all almost done with the “discovery” phase.  
Discover – **Design** – Build

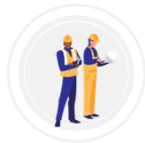
### Together

**Multi-university** pilot

# 22

We launched the MU pilot and invited all projects to take part in it. Today, 22 projects from both waves (14 projects from Wave 2) are ready to start the “design phase” of the MU pilot.  
Discover – **Design** – Build





## Posted Worker's To-Be Journeys

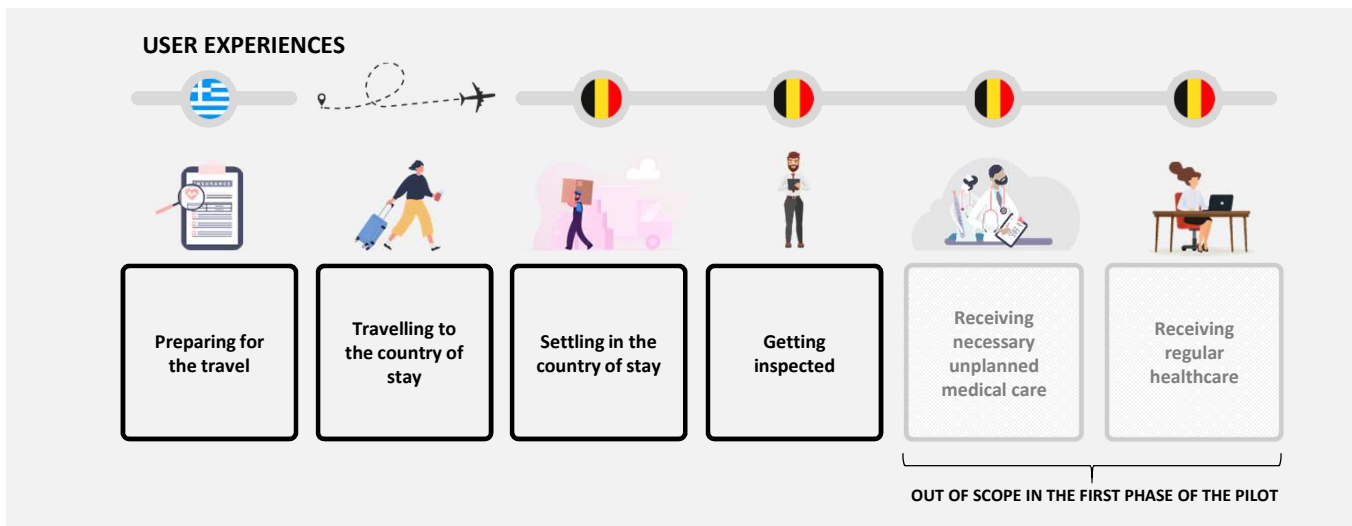
Georgios is an employee of a construction company in Greece. His company is sending him to a site in Belgium for a duration of 1 year.

LIFE  
EVENT

MEMBER  
STATES IN THIS  
SCENARIO



BELGIUM GREECE



### Focus on:

1. Issuance of PDA1
2. Verification of PDA1

# Member States involvement



## NINE MEMBER STATES ARE ALREADY CONTRIBUTING TO THE PILOT



Austria



Belgium



Croatia



Czech  
Republi  
c



Germany



Italy



Malta



Polan  
d



Sweden

## PARTICIPATION TO BE CONFIRMED



France



Greece



Slovakia



The  
Netherlands



# Germany and Spain and join forces on the development of a cross-border, decentralised digital identity ecosystem



Pressemitteilung 277

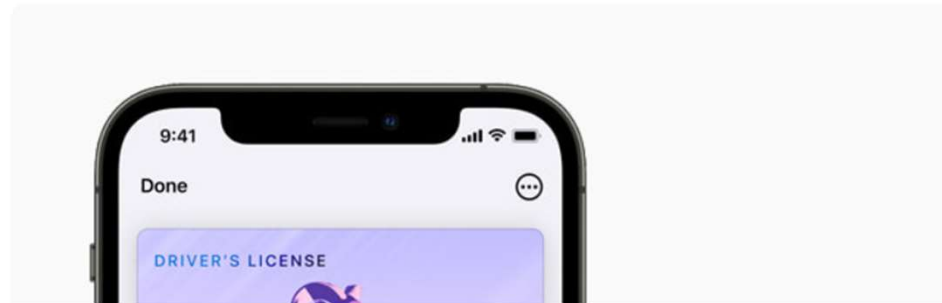
Donnerstag, 29. Juli 2021

Presse- und Informationsamt der Bundesregierung (BPA)

PRESS RELEASE  
September 1, 2021

# Apple announces first states signed up to adopt driver's licenses and state IDs in Apple Wallet

Arizona, Connecticut, Georgia, Iowa, Kentucky, Maryland, Oklahoma, and Utah are among the first states to bring state IDs and driver's licenses in Wallet to their residents



**European Self Sovereign Identity Framework**

# Connect. Make. Grow.

Join the ESSIF ecosystem and create value by connecting  
million of Europeans

See

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/ebsi>